Appendix H. Bibliography of ECOTOX Open Literature

METHOMYL
Papers that Were Accepted for ECOTOX

ECOTOX and EFED

1. Abo El-Ghar, G. E. S. and El-Sayed, A. E. G. M. (92). **Long-Term Effects of Insecticides on Diaeretiella rapae (M'Intosh), a Parasite of the Cabbage Aphid.** *Pestic.Sci.* 36: 109-114.

   EcoReference No.: 74131
   User Define 2: WASHT
   Chemical of Concern: MOM,CYP,TLM; Habitat: T; Effect Codes: MOR,REP.

2. Agnello, A. M., Spangler, S. M., Reissig, W. H., Lawson, D. S., and Weires, R. W. (92). **Seasonal Development and Management Strategies for Comstock Mealybug (Homoptera: Pseudococcidae) in New York Pear Orchards.** *J.Econ.Entomol.* 85: 212-225.

   EcoReference No.: 73713
   User Define 2: WASHT,CALFT,CORE
   Chemical of Concern: MOM,CPY,CBL,MP,AZ,ES,RSM,EFV,MVP; Habitat: T; Effect Codes: POP.

3. Ahmad, M., Hollingworth, R. M., and Wise, J. C. (2002). **Broad-Spectrum Insecticide Resistance in Obliquebanded Leafroller _Choristoneura rosaceana_ (Lepidoptera: Tortricidae) from Michigan.** *Pest Manag.Sci.* 58: 834-838.

   EcoReference No.: 70966
   User Define 2: WASHT,CALFT,CORE,SENT
   Chemical of Concern:
   IDC,CFP,EMMB,MFZ,TUZ,BFT,ZCYP,AZ,CPY,PSM,CYP,DM,EFV,ES,TDC,MOM,MZ,CBL,SS; Habitat: T; Effect Codes: MOR.

4. Ahrens, W. H. (90). **Enhancement of Soybean (Glycine max) Injury and Weed Control by Thifensulfuron-Insecticide Mixtures.** *Weed Technol.* 4: 524-528.

   EcoReference No.: 68422
   User Define 2: WASH,CALF,SENT
   Chemical of Concern: CPY,CBL,MOM,MLN; Habitat: T; Effect Codes: PHY.

5. Al-Baggou, B. K. and Mohammad, F. K. (99). **Antagonism of Methomyl-Induced Toxicosis by Diphenhydramine in Rats.** *Environ.Toxicol.Pharmacol.* 7: 119-125.

   EcoReference No.: 74379
   Chemical of Concern: MOM; Habitat: T; Effect Codes: MOR,PHY.

6. Aldosari, S. A., Watson, T. F., Sivasupramaniam, S., and Osman, A. A. (96). **Susceptibility of Field Populations of Beet Armyworm (Lepidoptera: Noctuidae) to Cyfluthrin, Methomyl, and Profenofos, and Selection for Resistance to Cyfluthrin.** *J.Econ.Entomol.* 89: 1359-1363.

   EcoReference No.: 74125
   User Define 2: WASHT,CORE
   Chemical of Concern: MOM,CYF,PFF; Habitat: T; Effect Codes: MOR.

7. Antal, M., Bedo, M., Constantinovits, G., Nagy, K., and Szepvolgyi, J. (79). **Studies on the Interaction of Methomyl and Ethanol in Rats.** *Food Cosmet.Toxicol.* 17: 333-338.

EcoReference No.: 74539
Chemical of Concern: MOM; Habitat: T; Effect Codes: BCM,GRO,BEH,CEL.

8. Armes, N. J., Jadhav, D. R., and DeSouza, K. R. (96). **A Survey of Insecticide Resistance in Helicoverpa armigera in the Indian Subcontinent.** *Bull.Entomol.Res.* 86: 499-514.

   EcoReference No.: 74171
   User Define 2: WASHT
   Chemical of Concern: MOM,FNV,CYP,ES; Habitat: T; Effect Codes: MOR.

9. Attique, M. R., Ghaffar, A., Arif, M. I., and Ahmad, Z. (98). **Ovicidal Activity of Some Insecticides on Eggs of Helicoverpa armigera (Hubner) (Noctuidae: Lepidoptera) in Pakistan.** *Pak.J.Zool.* 30: 229-232.

   EcoReference No.: 63369
   User Define 2: WASHT
   Chemical of Concern: MOM,PFF,TDC,BFT,CYH; Habitat: T; Effect Codes: MOR.

10. Babcock, J. M. and Tanigoshi, L. K. (88). **Resistance Levels of Typhlodromus occidentalis (Acari: Phytoseiidae) from Washington Apple Orchards to Ten Pesticides.** *Exp.Appl.Acarol.* 4: 151-157.

    EcoReference No.: 74105
    User Define 2: WASHT
    Chemical of Concern: CHX,FTT,PPG,AZ,DZ,MOM,CBL,FNV,ES,MDT; Habitat: T; Effect Codes: MOR.

11. Badawy, H. M. A. and El Arnaouty, S. A. (99). **Direct and Indirect Effects of Some Insecticides on Chrysoperla carnea (Stephens) s.l. (Neuroptera: Chrysopidae).** *J.Neuropterol.* 2: 67-74.

    EcoReference No.: 69720
    Chemical of Concern: PIM,PIRM,DMT,PFF,MLN,MOM; Habitat: T; Effect Codes: MOR,GRO.

12. Bala, A. E. A., Delorme, R., Kollmann, A., Kerhoas, L., Einhorn, J., Ducrot, P. H., and Auge, D. (99). **Insecticidal Activity of Daphnane Diterpenes from Lasiosiphon kraussianus (Meisn) (Thymelaeaceae) Roots.** *Pestic.Sci.* 55: 745-750.

    EcoReference No.: 73695
    User Define 2: WASHT
    Chemical of Concern: MOM,DM; Habitat: T; Effect Codes: MOR,BCM.

13. Barson, G. (89). **Response of Insecticide-Resistant and Susceptible Houseflies (Musca domestica) to a Commercial Granular Bait Formulation Containing Methomyl.** *Med.Vet.Entomol.* 3: 29-34.

    EcoReference No.: 74107
    User Define 2: WASHT
    Chemical of Concern: MOM; Habitat: T; Effect Codes: BEH,MOR.

14. Basheer, S., Vasudev, V., Venu, R., Guruprasad, K. P., and Harish, S. K. (99). **Toxic Effects of a Recently Introduced Carbamate Pesticide, Dunet (Methomyl) on Drosophila melanogaster.** *J.Environ.Biol.* 20: 135-139.

    EcoReference No.: 47354
    User Define 2: WASHT
    Chemical of Concern: MOM; Habitat: T; Effect Codes: GRO,MOR.

15. Bellows, T. S. Jr. and Morse, J. G. (93). **Toxicity of Insecticides Used in Citrus to Aphytis Melinus debach (Hymenoptera: Aphelinidae) and Rhizobius lophanthae (Blaisd.) (Coleoptera: Coccinellidae).** *Can.Entomol.* 125: 987-994.

EcoReference No.: 59334
Chemical of Concern: MOM,AZ,BFT,EFV,FPP,FVL,CBL,TDC,MVP,Naled,TCF; Habitat: T; Effect Codes: MOR.

16. Bhanukiran, Y., Rao, P. A., and Rao, K. T. (97). **Management of Spodoptera litura (Fabricius) on Groundnut with Combinations of Insecticides and Eco-friendly Chemicals.** *J.Entomol.Res.* 21: 71-74.

    EcoReference No.: 74152
    User Define 2: WASH
    Chemical of Concern: MOM,DFZ; Habitat: T; Effect Codes: POP.

17. Boyd, C. A., Weiler, M. H., and Porter, W. P. (90). **Behavioral and Neurochemical Changes Associated with Chronic Exposure to Low-Level Concentration of Pesticide Mixtures.** *J.Toxicol.Environ.Health* 30: 209-221.

    EcoReference No.: 74312
    Chemical of Concern: MOM,ADC,MBZ; Habitat: T; Effect Codes: BEH,BCM.

18. Bracy, O. L., Doyle, R. S., Kennedy, M., McNally, S. M., Weed, J. D., and Thorne, B. M. (79). **Effects of Methomyl and Ethanol on Behavior in the Sprague-Dawley Rat.** *Pharmacol.Biochem.Behav.* 10: 21-25.

    EcoReference No.: 74347
    Chemical of Concern: MOM; Habitat: T; Effect Codes: BEH,GRO,BCM.

19. Brandenburg, R. L. (85). **The Effect of Field Applications of Insecticides for Variegated Cutworm, Peridroma saucia (Hubner) (Noctuidae: Lepidoptera) Control on Non-Target Arthropods in Alfalfa.** *J.Kans.Entomol.Soc.* 58: 437-441.

    EcoReference No.: 63402
    Chemical of Concern: CPY,CBL,MOM; Habitat: T; Effect Codes: POP.

20. Brandenburg, R. L. (85). **Interaction of Alfalfa Plant Height and Insecticide Carrier Application Rates on Beneficial Arthropod Populations.** *Agric.Ecosyst.Environ.* 13: 159-166.

    EcoReference No.: 74146
    User Define 2: WASHT
    Chemical of Concern: MOM; Habitat: T; Effect Codes: POP.

21. Broadbent, A. B. and Pree, D. J. (97). **Resistance to Insecticides in Populations of Frankliniella occidentalis (Pergande) (Thysanoptera: Thripidae) from Greenhouses in the Niagara Region of Ontario.** *Can.Entomol.* 129: 907-913.

    EcoReference No.: 63606
    Chemical of Concern: MLN,CPY,BDC,DM,ACP,PPB,MOM; Habitat: T; Effect Codes: MOR.

22. Broadley, R. H. (83). **Toxicity of Insecticides to Coccinella repanda Thunberg and Harmonia octomaculata (Fabricius) (Coleoptera: Coccinellidae).** *Qld.J.Agric.Anim.Sci.* 40: 125-127.

    EcoReference No.: 70342
    User Define 2: WASHT,CALFT
    Chemical of Concern: CPY,MOM,PFF,MDT,CYP,DM,PMR,SPS; Habitat: T; Effect Codes: MOR.

23. Bues, R., Boudinhon, L., Toubon, J. F., and Faivre D'Arcier, F. (99). **Geographic and Seasonal Variability of Resistance to Insecticides in Cacopsylla pyri L. (Hom., Psyllidae).** *J.Appl.Entomol.* 123: 289-297.

EcoReference No.: 72767
User Define 2: WASHT,CALFT,CORE,SENT
Chemical of Concern:
AZ,CPY,CYP,PSM,MLN,MP,MOM,AMZ,PRN,PIM,CPYM,FNV,MVP,DM,PSM; Habitat: T; Effect Codes: MOR.

24. Buntin, G. D. (98). **Evaluation of Insecticides for Control of the Cabbage Seedpod Weevil in Canola.** *In: G.D.Buntin (Ed.), Res.Bull.No.435, Assessment of Crop Protectants for Use in Canola, Univ.of Ga., Athens, GA* 25-29.

EcoReference No.: 73097
User Define 2: NEW CSC,WASH,CALF,CORE
Chemical of Concern: EFV,MLN,ES,PMR,MOM,CBL,MP,PSM,AZD,PRN; Habitat: T; Effect Codes: POP,GRO,BCM.

25. Byrne, F. J. and Toscano, N. C. (2001). **An Insensitive Acetylcholinesterase Confers Resistance to Methomyl in the Beet Armyworm Spodoptera exigua (Lepidoptera: Noctuidae).** *J.Econ.Entomol.* 94: 524-528.

EcoReference No.: 58604
User Define 2: WASHT
Chemical of Concern: MOM; Habitat: T; Effect Codes: BCM,MOR.

26. Call, D. J., Poirier, S. H., Lindberg, C. A., Harting, S. L., Markee, T. P., Brooke, L. T., Zarvan, N., and Northcott, C. E. (89). **Pesticides in Terrestrial and Aquatic Environments.** *In: D.L.Weigmann (Ed.), Pesticides in Terrestrial and Aquatic Environments, Proc.Natl.Res.Conf., Virginia Polytechnic Inst.and State Univ., Blacksburg, VA* 317-336.

EcoReference No.: 14097
User Define 2: ECOTOX MED,WASH
Chemical of Concern: MOM,CBF,24DXY,DS,TBO,PPX
Endpoint: GRO,MOR; Habitat: A

27. Call, D. J., Poirier, S. H., Lindberg, C. A., Harting, S. L., Markee, T. P., Brooke, L. T., Zarvan, N., and Northcott, C. E. (89). **Pesticides in Terrestrial and Aquatic Environments.** *In: D.L.Weigmann (Ed.), Pesticides in Terrestrial and Aquatic Environments, Proc.Natl.Res.Conf., Virginia Polytechnic Inst.and State Univ., Blacksburg, VA* 317-336.

EcoReference No.: 14097
User Define 2: ECOTOX MED,WASH
Chemical of Concern: MOM,CBF,24DXY,DS,TBO,PPX; Habitat: A; Effect Codes: GRO,MOR.

28. Carter, F. L. (71). **In Vivo Studies of Brain Acetylcholinesterase Inhibition by Organophosphate and Carbamate Insecticides in Fish.** *Ph.D.Thesis, Louisiana State Univ.and Agric.and Mechanical College; Diss.Abstr.Int.B Sci.Eng.32(5):2772-2773 (Publ in Part As 942)* 202 p.

EcoReference No.: 14034
User Define 2: WASH,CALF
Chemical of Concern: CPY,MOM,CBF,AZ,ADC,DCTP,MP,MLN,CBL
Endpoint: BCM,GRO,MOR; Habitat: A

29. Carter, F. L. (71). **In Vivo Studies of Brain Acetylcholinesterase Inhibition by Organophosphate and Carbamate Insecticides in Fish.** *Ph.D.Thesis, Louisiana State Univ.and Agric.and Mechanical College; Diss.Abstr.Int.B Sci.Eng.32(5):2772-2773 (Publ in Part As 942)* 202 p.

EcoReference No.: 14034
User Define 2: WASH,CALF

Chemical of Concern: CPY,MOM,CBF,AZ,ADC,DCTP,MP,MLN,CBL; Habitat: A; Effect Codes: BCM,GRO,MOR.

30. Carter, F. L. (71). **In Vivo Studies of Brain Acetylcholinesterase Inhibition by Organophosphate and Carbamate Insecticides in Fish.** *Ph.D.Thesis, Louisiana State Univ.and Agric.and Mechanical College; Diss.Abstr.Int.B Sci.Eng.32(5):2772-2773 (Publ in Part As 942)* 202 p.

    EcoReference No.: 14034
    User Define 2: WASH,CALF
    Chemical of Concern: CPY,MOM,CBF,AZ,ADC,DCTP,MP,MLN,CBL; Habitat: A; Effect Codes: BCM,GRO,MOR.

31. Cesnik, R., Oetting, R. D., and Gardner, W. A. (95). **Western Flower Thrips on Impatiens Under Greenhouse Conditions, Spring 1994.** *In: A.K.Burditt,Jr.(Ed.), Arthropod Management Tests, Volume 20, Entomol.Soc.of Am., Lanham, MD* 298.

    EcoReference No.: 74172
    User Define 2: WASH
    Chemical of Concern: MOM; Habitat: T; Effect Codes: POP.

32. Chamberlin, J. R. and All, J. N. (91). **Grain Sorghum Response to Fall Armyworm and Corn Earworm Infestation.** *J.Econ.Entomol.* 84: 619-624.

    EcoReference No.: 73708
    User Define 2: WASH,CORE
    Chemical of Concern: MOM,CYP; Habitat: T; Effect Codes: POP,GRO.

33. Clare, A. S., Costlow, J. D., Bedair, H. M., and Lumb, G. (92). **Assessment of Crab Limb Regeneration as an Assay for Developmental Toxicity.** *Can.J.Fish.Aquat.Sci.* 49: 1268-1273.

    EcoReference No.: 13611
    User Define 2: ECOTOX MED,WASH,CORE
    Chemical of Concern: ACR,CBF,MOM,CYP
    Endpoint: GRO,MOR; Habitat: A

34. Clare, A. S., Costlow, J. D., Bedair, H. M., and Lumb, G. (92). **Assessment of Crab Limb Regeneration as an Assay for Developmental Toxicity.** *Can.J.Fish.Aquat.Sci.* 49: 1268-1273.

    EcoReference No.: 13611
    User Define 2: ECOTOX MED,WASH,CORE
    Chemical of Concern: ACR,CBF,MOM,CYP; Habitat: A; Effect Codes: GRO,MOR.

35. Clinch, P. B., Palmer-Jones, T., and Forster, I. W. (73). **Effect on Honey Bees of Dicrotophos and Methomyl Applied As Sprays to White Clover.** *N.Z.J.Exp.Agric.* 1: 97-99.

    EcoReference No.: 36200
    User Define 2: WASHT
    Chemical of Concern: MOM,DCTP; Habitat: T; Effect Codes: MOR,POP.

36. Coppage, D. L. (77). **Anticholinesterase Action of Pesticidal Carbamates in the Central Nervous System of Poisoned Fishes.** *In: J.F.Vernberg (Ed.), Symp.Physiological Responses of Marine Biota to Pollutants, Academic Press, New York, NY* 93-102.

    EcoReference No.: 7669
    User Define 2: ECOTOX MED,WASH,CALF
    Chemical of Concern: CBF,CBL,MOM,ADC

Endpoint: BCM; Habitat: A

37. Coppage, D. L. (77). **Anticholinesterase Action of Pesticidal Carbamates in the Central Nervous System of Poisoned Fishes.** *In: J.F.Vernberg (Ed.), Symp.Physiological Responses of Marine Biota to Pollutants, Academic Press, New York, NY* 93-102.

    EcoReference No.: 7669
    User Define 2: ECOTOX MED,WASH,CALF
    Chemical of Concern: CBF,CBL,MOM,ADC; Habitat: A; Effect Codes: BCM.

38. Coppage, D. L. (77). **Anticholinesterase Action of Pesticidal Carbamates in the Central Nervous System of Poisoned Fishes.** *In: J.F.Vernberg (Ed.), Symp.Physiological Responses of Marine Biota to Pollutants, Academic Press, New York, NY* 93-102.

    EcoReference No.: 7669
    User Define 2: ECOTOX MED,WASH,CALF
    Chemical of Concern: CBF,CBL,MOM,ADC; Habitat: A; Effect Codes: BCM.

39. Costlow, J. D. (89). **Effects of Environmental Factors on Larval Development of Marine Invertebrates: Part III. Regeneration as an Indicator of Environmental Stress.** *DOE/ER/60572-T1, Annual Progress Report* 8 p.(U.S.NTIS DE88-017248).

    EcoReference No.: 4649
    User Define 2: ECOTOX MED,WASH
    Chemical of Concern: CBF,MOM
    Endpoint: GRO; Habitat: A

40. Costlow, J. D. (89). **Effects of Environmental Factors on Larval Development of Marine Invertebrates: Part III. Regeneration as an Indicator of Environmental Stress.** *DOE/ER/60572-T1, Annual Progress Report* 8 p.(U.S.NTIS DE88-017248).

    EcoReference No.: 4649
    User Define 2: ECOTOX MED,WASH
    Chemical of Concern: CBF,MOM; Habitat: A; Effect Codes: GRO.

41. Dashiell, O. L. and Kennedy, G. L. Jr. (84). **The Effects of Fasting on the Acute Oral Toxicity of Nine Chemicals in the Rat.** *J.Appl.Toxicol.* 4: 320-5.

    EcoReference No.: 74538
    Chemical of Concern: MOM,CTC; Habitat: T; Effect Codes: MOR,PHY.

42. David, P. J. and Horsburgh, R. L. (85). **Ovicidal Activity of Methomyl on Eggs of Pest and Beneficial Insects and Mites Associated with Apples in Virginia.** *J.Econ.Entomol.* 78: 432-436.

    EcoReference No.: 74113
    User Define 2: WASHT
    Chemical of Concern: MOM; Habitat: T; Effect Codes: MOR.

43. Dekundy, A., Blaszczak, P., Kaminski, R., and Turski, W. A. (2001). **On the Interactions Between Antimuscarinic Atropine and NMDA Receptor Antagonists in Anticholinesterase-Treated Mice.** *Arch.Toxicol.* 74: 702-708.

    EcoReference No.: 73592
    User Define 2: WASHT
    Chemical of Concern: MOM; Habitat: T; Effect Codes: MOR,BEH,BCM.

44. Durant, J. A. and Moore, R. F. (89). **Ovo-larvicidal Activity of Selected Insecticide Treatments Against Heliothis spp. on Cotton.** *J.Agric.Entomol.* 6: 227-232.

EcoReference No.: 73703
User Define 2: WASHT,CORE
Chemical of Concern: MOM,CYF,TLM,TDC,PFF,AMZ,CYP,FYC,LCYT; Habitat: T; Effect Codes: MOR.

45. Duso, C., Camporese, P., and Van der Geest, L. P. S. (92). **Toxicity of a Number of Pesticides to Strains of Typhlodromus pyri and Amblyseius andersoni (Acari: Phytoseiidae).** *Entomophaga* 37: 363-372.

EcoReference No.: 73088
User Define 2: NEW CSC,WASHT,CALFT
Chemical of Concern: PRN,CBL,ACP,AZ,CPY,MDT,MOM,DM,CPYM,FNT,TCF,CBL; Habitat: T; Effect Codes: MOR,REP.

46. El-Medany, A., El-Medany, G., and Rahmy, A. E. (93). **Evaluation of the Effect of Methomyl Insecticide on the Testicular Function in Normal Albino Rats. Hormonal Histological and Histochemical Study.** *J.Med.Res.Inst.* 14: 165-187.

EcoReference No.: 74348
Chemical of Concern: MOM; Habitat: T; Effect Codes: CEL,BCM,MOR.

47. El-Refai, A., Fahmy, F. A., Abdel-Lateef, M. F. A., and Imam, A. K. E. (76). **Toxicity of Three Insecticides to Two Species of Fish.** *Int.Pest Control* 18: 4-8.

EcoReference No.: 6090
User Define 2: ECOTOX MED,WASH,CALF
Chemical of Concern: EN,MOM; Habitat: A; Effect Codes: MOR,ACC.

48. El-Sayed, E. I., Mohanna, A. H., and Abedl-Sattar, M. M. (83). **Patterns of Cross-Resistance in Endrin and Methomyl Selected Strains of the Egyptian Cotton Leafworm, Spodoptera littoralis (Boisd.).** *Bull.Entomol.Soc.Egypt* 13: 17-24.

EcoReference No.: 74153
User Define 2: WASHT
Chemical of Concern: CYP,EN,MOM,PHSL; Habitat: T; Effect Codes: MOR.

49. El-Sewedy, S. M., Zahran, M. A., Zeidan, M. A., Mostafa, M. H., and El-Bassiouni, E. A. (82). **Effect of Mechanism of Action of Methomyl and Cypermethrin Insecticides on Kynurenine Metabolizing Enzymes of Mouse Liver.** *J.Environ.Sci.Health Part B* 17: 527-539.

EcoReference No.: 72485
User Define 2: WASHT,CORE,SENT
Chemical of Concern: MOM,CYP; Habitat: T; Effect Codes: MOR,BCM,GRO.

50. El-Sheakh, A. A., Khatter, A. A., Hussein, M. Z., and El-Shemi, M. K. (90). **Toxicity of Five Insecticides to Tilapia Fish.** *Egypt.J.Appl.Sci.* 5: 34-40.

EcoReference No.: 16196
User Define 2: ECOTOX MED,WASH
Chemical of Concern: MOM,TDC; Habitat: A; Effect Codes: MOR.

51. El-Wakil, H. B. and Attia, A. M. (99). **Effect of Selected Insecticides on Terrestrial Snails Eobania vermiculata (Muller) and Theba pisana (Muller) with Respect to Some Morphological Changes in Egypt.** *J.Environ.Sci.Health Part B* 34: 47-60.

EcoReference No.: 72657
User Define 2: WASHT
Chemical of Concern: MOM,DFZ; Habitat: T; Effect Codes: GRO,MOR,POP.

52. El-Wakil, H. B. and Radwan, M. A. (91). **Biochemical Study on the Terrestrial Snail, Eubania vermiculata (Muller) Treated with Some Pesticides.** *J.Environ.Sci.Health Part B* 26: 479-489.

EcoReference No.: 74337
Chemical of Concern: MOM,ADC,MAL; Habitat: T; Effect Codes: BCM.

53. El-Wakil, H. B. and Radwan, M. A. (91). **Biochemical Study on the Terrestrial Snail, Eubania vermiculata (Muller) Treated with Some Pesticides.** *J.Environ.Sci.Health Part B* 26: 479-489.

EcoReference No.: 74337
Chemical of Concern: MOM,ADC,MAL; Habitat: T; Effect Codes: BCM.

54. Elzen, G. W., O'Brien, P. J., and Powell, J. E. (89). **Toxic and Behavioral Effects of Selected Insecticides on the Heliothis Parasitoid Microplitis croceipes.** *Entomophaga* 34: 87-94.

EcoReference No.: 74133
User Define 2: WASHT
Chemical of Concern: MOM,FNV,TDC; Habitat: T; Effect Codes: BEH,MOR.

55. Eulitz, E. G. (86). **Initial Experiments in the Control of False Wireworm (Tenebrionidae) on Tobacco Transplants.** *Phytophylactica* 18: 115-119.

EcoReference No.: 74106
User Define 2: WASHT
Chemical of Concern: TLF,TVP,CBL,ACP,MOM,ES,DZ,CPY; Habitat: T; Effect Codes: MOR,POP,BEH.

56. Fayez, V. and Bahig, M. R. E. (91). **Short Term Toxicity of Methomyl in Rats.** *Chemosphere* 23: 375-381.

EcoReference No.: 73597
User Define 2: WASHT
Chemical of Concern: MOM; Habitat: T; Effect Codes: BCM.

57. Fernandez-Alba, A. R., Hernando, D., Aguera, A., Caceres, J., and Malato, S. (2002). **Toxicity Assays: A Way for Evaluating AOPs Efficiency.** *Water Res.* 36: 4255-4262.

EcoReference No.: 73575
User Define 2: NEW CSC,WASH
Chemical of Concern: MOM; Habitat: A; Effect Codes: MOR,POP.

58. Ferree, D. C. and Hall, F. R. (78). **Effects of Growth Regulators and Multiple Applications of Pesticides on Net Photosynthesis and Transpiration of Greenhouse-Grown Apple Trees.** *J.Am.Soc.Hortic.Sci.* 103: 61-64.

EcoReference No.: 42817
User Define 2: REPS,WASH,CALF,CORE,SENT
Chemical of Concern: EPH,FO,DCF,PPG,MOM,MLN,DZ,DDVP,RSM,OML,ADC; Habitat: T; Effect Codes: PHY,GRO.

59. Ferree, D. C. and Hall, F. R. (78). **Effects of Growth Regulators and Multiple Applications of Pesticides on Net Photosynthesis and Transpiration of Greenhouse-Grown Apple Trees.** *J.Am.Soc.Hortic.Sci.* 103:

61-64.

EcoReference No.: 42817
User Define 2: REPS,WASH,CALF,CORE,SENT
Chemical of Concern: EPH,FO,DCF,PPG,MOM,MLN,DZ,DDVP,RSM,OML,ADC; Habitat: T; Effect Codes: PHY,GRO.

60. Fossi, M. C., Leonzio, C., Massi, A., Lari, L., and Casini, S. (92). **Serum Esterase Inhibition in Birds: A Nondestructive Biomarker to Assess Organophosphorus and Carbamate Contamination.** *Arch.Environ.Contam.Toxicol.* 23: 99-104.

EcoReference No.: 73591
User Define 2: WASHT
Chemical of Concern: MOM; Habitat: T; Effect Codes: BCM.

61. Gayen, A. K. and Knowles, C. O. (81). **Penetration and Fate of Methomyl and Its Oxime Metabolite in Insects and Twospotted Spider Mites.** *Arch.Environ.Contam.Toxicol.* 10: 55-67.

EcoReference No.: 73590
User Define 2: WASHT
Chemical of Concern: MOM; Habitat: T; Effect Codes: ACC.

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EcoReference No.: 12859
User Define 2: ECOTOX MED,WASH,CALF,CORE
Chemical of Concern: MOM,ACC,BMC,BMN,CBL,DS,DZ,MLN,PMR; Habitat: A; Effect Codes: MOR.

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User Define 2: WASHT
Chemical of Concern: BDC,MOM; Habitat: T; Effect Codes: ACC,MOR,BCM.

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User Define 2: WASHT
Chemical of Concern: MOM,FNV; Habitat: T; Effect Codes: POP,MOR.

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User Define 2: WASHT,CALFT,CORE
Chemical of Concern: MOM,DZ,PMR,FNV,CBL,PSM; Habitat: T; Effect Codes: MOR,REP.

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User Define 2: WASHT
Chemical of Concern: MOM,TDC; Habitat: T; Effect Codes: BCM.

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Chemical of Concern: MOM; Habitat: T; Effect Codes: CEL,MOR,BCM,PHY.

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Chemical of Concern: MOM; Habitat: T; Effect Codes: CEL,BCM.

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EcoReference No.: 72206
User Define 2: WASHT,CALFT,CORE,SENT
Chemical of Concern:
DZ,DDT,AND,PRN,CPY,PSM,PMR,Naled,MOM,MLN,DM,CYP,CBF,AZ,FNV,FNF,ACP,AND
Endpoint: MOR; Habitat: T

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EcoReference No.: 72206
User Define 2: WASHT,CALFT,CORE,SENT
Chemical of Concern:
DZ,DDT,AND,PRN,CPY,PSM,PMR,Naled,MOM,MLN,DM,CYP,CBF,AZ,FNV,FNF,ACP,AND; Habitat: T; Effect Codes: MOR.

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EcoReference No.: 74112
User Define 2: WASHT
Chemical of Concern: MOM,FNV,PMR,ES; Habitat: T; Effect Codes: MOR.

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EcoReference No.: 73595
User Define 2: WASHT,CALFT,CORE
Chemical of Concern: MOM,ACP,AZ,CPY,FNT,PMR,SPS,TDC,TCF; Habitat: T; Effect Codes: MOR.

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Chemical of Concern: MOM; Habitat: T; Effect Codes: CEL,REP.

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Chemical of Concern: MOM; Habitat: T; Effect Codes: GEN.

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EcoReference No.: 69718
User Define 2: WASHT,CORE
Chemical of Concern: ACP,MOM,SS; Habitat: T; Effect Codes: MOR.

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EcoReference No.: 50181
User Define 2: WASHT,CALFT
Chemical of Concern: MOM,MLT,ADC,CBF; Habitat: T

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EcoReference No.: 50181
LITE Eval Status: LITE EVAL CODED(MLT)(CBF)(MOM)(ADC)
ECOTOX Status:UR
User Define 5: Fish Wildl Tech Rep No. 29, U.S. Dep of Interior, Fish Wildl Serv. - Dicofol (Kelthane) as an Environmental Contaminant: A Review
MOM,MLT,ADC,CBF; Habitat: T

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EcoReference No.: 50181
User Define 2: WASHT,CALFT
Chemical of Concern: MOM,MLT,ADC,CBF; Habitat: T

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EcoReference No.: 50181
User Define 2: WASHT,CALFT
Chemical of Concern: MOM,MLT,ADC,CBF; Habitat: T

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EcoReference No.: 35249
User Define 2: CORE
User Define 3: 09/17/2004
Chemical of Concern:
ACP,CBL,DZ,DMT,EN,HCCH,MLN,MOM,Naled,PRN,PMR,PSM,SPS,TMP,TXP,AMTL,ATZ,BMN,MCPA, 24DXY,DMB,GYP,PAQT,PCL,PRO,PPN,TFN; Habitat: T; Effect Codes: MOR,GRO,DVP.

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EcoReference No.: 74108
User Define 2: WASHT
Chemical of Concern: MOM,EFV,ES,AZ,CPY; Habitat: T; Effect Codes: MOR.

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EcoReference No.: 74127
User Define 2: WASHT
Chemical of Concern: MOM,EVF,ES; Habitat: T; Effect Codes: MOR.

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EcoReference No.: 73707
User Define 2: WASHT,CORE
Chemical of Concern: MOM,ES,CYP,MDT; Habitat: T; Effect Codes: MOR.

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EcoReference No.: 73691
User Define 2: WASHT,CALFT
Chemical of Concern: MOM,ACP,CPY,PNV,TDC,MP,AMZ; Habitat: T; Effect Codes: MOR.

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EcoReference No.: 74338
Chemical of Concern: MOM,MCB; Habitat: T; Effect Codes: MOR.

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Chemical of Concern: MOM,MCB; Habitat: T; Effect Codes: MOR.

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EcoReference No.: 73706
User Define 2: WASHT,CORE
Chemical of Concern: MOM,CTN,PMR,AZ; Habitat: T; Effect Codes: GRO,MOR.

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EcoReference No.: 74111

User Define 2: WASHT,CORE
Chemical of Concern: MOM,PMR; Habitat: T; Effect Codes: MOR.

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EcoReference No.: 73711
User Define 2: WASHT,CALFT,CORE
Chemical of Concern: MOM,AV,PMR,CPY,BFT,PPB; Habitat: T; Effect Codes: MOR.

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EcoReference No.: 74350
Chemical of Concern:
PIM,CPY,DMT,ACP,PPHD,FNV,PHSL,MOM,ADC,MLN,DEM,DS,OML,AZ,ES; Habitat: T

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EcoReference No.: 74350
Chemical of Concern:
PIM,CPY,DMT,ACP,PPHD,FNV,PHSL,MOM,ADC,MLN,DEM,DS,OML,AZ,ES; Habitat: T

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EcoReference No.: 74543
Chemical of Concern: MOM,MP; Habitat: T; Effect Codes: POP,PHY,ACC.

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EcoReference No.: 74123
User Define 2: WASHT
Chemical of Concern: CBL,ES,PFF,DLD,MOM,TVP; Habitat: T; Effect Codes: BCM,MOR.

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EcoReference No.: 5395
User Define 2: ECOTOX MED,WASH
Chemical of Concern: MOM; Habitat: AT; Effect Codes: GRO,MOR,BCM,ACC,REP,PHY,CEL.

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EcoReference No.: 66559
User Define 2: WASHT
Chemical of Concern: MOM,PMR,TVP,DMT,CYF; Habitat: T; Effect Codes: MOR.

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EcoReference No.: 74339
Chemical of Concern: MOM; Habitat: T; Effect Codes: POP.

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EcoReference No.: 12221
User Define 2: TITLE MED,WASH
Chemical of Concern: MOM; Habitat: A; Effect Codes: POP,BCM.

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EcoReference No.: 73712
User Define 2: WASH,CORE
Chemical of Concern: MOM,AZ,CYP,MP; Habitat: T; Effect Codes: ACC,MOR.

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User Define 2: WASHT
Chemical of Concern: MOM,AZ,CPY,MP; Habitat : T; Effect Codes: ACC,MOR,PHY.

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EcoReference No.: 74117
User Define 2: WASHT
Chemical of Concern: FNV,MOM,CPY,MP,AZ,TDC,PSM,PHSL; Habitat: T; Effect Codes: MOR.

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EcoReference No.: 6605
User Define 2: TITLE MED,WASH
Chemical of Concern: MOM; Habitat: A; Effect Codes: POP,BCM.

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EcoReference No.: 74122
User Define 2: WASHT,CORE
Chemical of Concern: MOM,EVF,PMR; Habitat: T; Effect Codes: MOR.

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20: 403-410.

EcoReference No.: 74137
User Define 2: WASHT
Chemical of Concern:
CPYM,FNT,MP,FNTH,DZ,CPY,PRN,MLN,PSM,MDT,DDVP,TVP,CBL,BDC,PIRM,PIM,MOM; Habitat: T; Effect Codes: MOR.

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EcoReference No.: 73692
User Define 2: WASHT
Chemical of Concern: MOM; Habitat: T; Effect Codes: GRO.

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EcoReference No.: 68743
User Define 2: WASHT
Chemical of Concern: MOM; Habitat: T; Effect Codes: MOR,POP.

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EcoReference No.: 74110
User Define 2: WASHT,CORE
Chemical of Concern: MOM,FNV,PMR; Habitat: T; Effect Codes: MOR.

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EcoReference No.: 74121
User Define 2: WASHT,CORE
Chemical of Concern: MOM,AV,PMR; Habitat: T; Effect Codes: MOR.

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User Define 2: WASH
User Define 3: 08/12/04
Chemical of Concern: MOM,CN,PL,PCP,Cu,Zn,Cd; Habitat: A; Effect Codes: BEH,ACC.

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EcoReference No.: 74147
User Define 2: WASHT
Chemical of Concern: MOM,MDT; Habitat: T; Effect Codes: POP.

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Graves, J. B. (90). **Variations in Response of Soybean Looper (Lepidoptera: Noctuidae) to Selected Insecticides in Louisiana.** *J.Econ.Entomol.* 83: 27-34.

EcoReference No.: 74115
User Define 2: WASHT
Chemical of Concern: MOM,ACP,PMR,LCYT,TLM; Habitat: T; Effect Codes: MOR,POP.

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EcoReference No.: 74119
User Define 2: WASHT
Chemical of Concern: FNV,PMR,PFF,DCM,CYP,CYF,MOM,MP; Habitat: T; Effect Codes: MOR.

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EcoReference No.: 74712
Chemical of Concern: MOM; Habitat: T; Effect Codes: CEL,BCM.

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Chemical of Concern: MOM; Habitat: T; Effect Codes: BCM,CEL.

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User Define 2: WASHT
Chemical of Concern: MOM,ES,CYP,EFX,CPY,TDC; Habitat: T; Effect Codes: MOR.

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EcoReference No.: 62600
Chemical of Concern:
2INEB,DINO,DCF,Cu,ES,MOM,CBL,FNV,PHSL,CYP,DM,DMT,MLN,CPY,MP,FNTH,DDVP,PPHD,FVL, ACP,MZB,CBD; Habitat: T; Effect Codes: MOR.

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Chemical of Concern: MOM,PHSL,PPHD,CBL,CPY,DDVP,DCF,DMT,ES,FNT,MLN; Habitat: T; Effect Codes: MOR,POP.

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User Define 2: WASHT
Chemical of Concern: MOM; Habitat: T; Effect Codes: POP,MOR.

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Chemical of Concern: PPX,CPY,CBL,FNT,MOM; Habitat: T; Effect Codes: MOR,ACC.

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Chemical of Concern: MOM,TDC; Habitat: T; Effect Codes: MOR.

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EcoReference No.: 73698
User Define 2: WASHT,CALFT,CORE
Chemical of Concern: MOM,IMC,LCYT,CYF,DMT,AV,ACP,CBL,CPYM,PSPL; Habitat: T; Effect Codes: MOR.

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EcoReference No.: 44566
User Define 2: WASHT,CALFT,SENT
User Define 3: 7/15/03
Chemical of Concern: Cu,DZ,MOM,CBF,ADC,FMP,IZF,OML
Endpoint: GRO, MOR, REP; Habitat: T

122. Martin, S. H., Elzen, G. W., Graves, J. B., Micinski, S., Leonard, B. R., and Burris, E. (95). **Toxicological Responses of Tobacco Budworm (Lepidoptera: Noctuidae) from Louisiana, Mississippi, and Texas to Selected Insecticides.** *J.Econ.Entomol.* 88: 505-511.

EcoReference No.: 74174
User Define 2: WASHT
Chemical of Concern: MOM,CYP,PFF,SPS; Habitat: T; Effect Codes: MOR.

123. Martinez, D. G. and Pienkowski, R. L. (83). **Comparative Toxicities of Several Insecticides to an Insect Predator, a Nonpest Prey Species, and a Pest Prey Species.** *J.Econ.Entomol.* 76: 933-935.

EcoReference No.: 37837
User Define 3: 03/16/04
Chemical of Concern: MDT,AZ,CBF,MOM,CBL,MLN
Endpoint: MOR; Habitat: T

124. Martinez, D. G. and Pienkowski, R. L. (83). **Comparative Toxicities of Several Insecticides to an Insect Predator, a Nonpest Prey Species, and a Pest Prey Species.** *J.Econ.Entomol.* 76: 933-935.

EcoReference No.: 37837
User Define 3: 03/16/04
Chemical of Concern: MDT,AZ,CBF,MOM,CBL,MLN; Habitat: T; Effect Codes: MOR.

125. Mason, C. E. (86). **Progression of Knockdown and Mortality of Honey Bees (Hymenoptera: Apidae) Sprayed with Insecticides Mixed with Penncap-M.** *Environ.Entomol.* 15: 170-176.

EcoReference No.: 40005
Chemical of Concern: CBL,MLN,MP,OML,PRM,PHSL,MOM; Habitat: T; Effect Codes: MOR.

126. Mason, L. J., Seal, D. R., and Jansson, R. K. (91). **Response of Sweetpotato Weevil (Coleoptera: Apionidae) to Selected Insecticides.** *Fla.Entomol.* 74: 350-355.

EcoReference No.: 62617
User Define 2: WASHT
Chemical of Concern: MOM,CBL,ES,PRN,CPY; Habitat: T; Effect Codes: MOR.

127. Mayer, D. F., Johansen, C. A., Shanks, C. H. Jr., and Antonelli, A. L. (89). **Methomyl Insecticide and Domesticated Pollinators.** *J.Entomol.Soc.Br.Columbia* 86: 7-13.

EcoReference No.: 74176
User Define 2: WASHT
Chemical of Concern: MOM; Habitat: T; Effect Codes: MOR,BEH,ACC.

128. Mayer, F. L. J. and Ellersieck, M. R. (86). **Manual of Acute Toxicity: Interpretation and Data Base for 410 Chemicals and 66 Species of Freshwater Animals.** *Resour.Publ.No.160, U.S.Dep.Interior, Fish Wildl.Serv., Washington, DC* 505 p. (USGS Data File).

Selenium DRAFT/REFs 1999//Diazinon DRAFT/REFs 1999//Listed as the "USGS Acute Toxicity Data Base" in Independently Compiled Data section of the ECOTOX web site//
EcoReference No.: 6797
User Define 2: REPS,WASH,CALF,CORE,SENT
Chemical of Concern:
EDT,RSM,SZ,24DXY,ACP,ACR,ADC,ATZ,AZ,BS,Captan,CBF,CBL,CMPH,CPY,DBN,DFZ,DMB,DMT,DP
DP,DS,DU,DZ,FO,GYP,HCCH,HXZ,LNR,MBZ,MDT,MLN,MLT,MOM,MP,MTL,Naled,OYZ,PEB,PAQT,P
RT,PSM,Folpet,PYN,CYT,DMM,EFS,NAA,NTP,PMR,PPB,TFN,WFN
Endpoint: MOR,PHY; Habitat: A

129. Mayer, F. L. J. and Ellersieck, M. R. (86). **Manual of Acute Toxicity: Interpretation and Data Base for 410 Chemicals and 66 Species of Freshwater Animals.** *Resour.Publ.No.160, U.S.Dep.Interior, Fish Wildl.Serv., Washington, DC* 505 p. (USGS Data File).

EcoReference No.: 6797
User Define 2: REPS,WASH,CALF,CORE,SENT
Chemical of Concern:
EDT,RSM,SZ,24DXY,ACP,ACR,ADC,ATZ,AZ,BS,Captan,CBF,CBL,CMPH,CPY,DBN,DFZ,DMB,DMT,DP
DP,DS,DU,DZ,FO,GYP,HCCH,HXZ,LNR,MBZ,MDT,MLN,MLT,MOM,MP,MTL,Naled,OYZ,PEB,PAQT,P
RT,PSM,Folpet,PYN,CYT,DMM,EFS,NAA,NTP,PMR,PPB,TFN,WFN
Endpoint: MOR,PHY; Habitat: A

130. Mayer, F. L. J. and Ellersieck, M. R. (86). **Manual of Acute Toxicity: Interpretation and Data Base for 410 Chemicals and 66 Species of Freshwater Animals.** *Resour.Publ.No.160, U.S.Dep.Interior, Fish Wildl.Serv., Washington, DC* 505 p. (USGS Data File).

EcoReference No.: 6797
LITE Eval Status: LITE EVAL CODED(MLT)(MTL)(CBF)
ECOTOX Status:A
EDT,RSM,SZ,24DXY,ACP,ACR,ADC,ATZ,AZ,BS,Captan,CBF,CBL,CMPH,CPY,DBN,DFZ,DMB,DMT,DP
DP,DS,DU,DZ,FO,GYP,HCCH,HXZ,LNR,MBZ,MDT,MLN,MLT,MOM,MP,MTL,Naled,OYZ,PEB,PAQT,P
RT,PSM,Folpet,PYN,CYT,DMM,EFS,NAA,NTP,PMR,PPB,TFN; Habitat: A; Effect Codes: MOR,PHY.

131. Mayer, F. L. J. and Ellersieck, M. R. (86). **Manual of Acute Toxicity: Interpretation and Data Base for**

410 Chemicals and 66 Species of Freshwater Animals. *Resour.Publ.No.160, U.S.Dep.Interior, Fish Wildl.Serv., Washington, DC* 505 p. (USGS Data File).

EcoReference No.: 6797
User Define 2: REPS,WASH,CALF,CORE,SENT
Chemical of Concern:
EDT,RSM,SZ,24DXY,ACP,ACR,ADC,ATZ,AZ,BS,Captan,CBF,CBL,CMPH,CPY,DBN,DFZ,DMB,DMT,DPDP,DS,DU,DZ,FO,GYP,HCCH,HXZ,LNR,MBZ,MDT,MLN,MLT,MOM,MP,MTL,Naled,OYZ,PEB,PAQT,PRT,PSM,Folpet,PYN,CYT,DMM,EFS,NAA,NTP,PMR,PPB,TFN,WFN; Habitat: A; Effect Codes: MOR,PHY.

132. Mayer, F. L. J. and Ellersieck, M. R. (86). **Manual of Acute Toxicity: Interpretation and Data Base for 410 Chemicals and 66 Species of Freshwater Animals.** *Resour.Publ.No.160, U.S.Dep.Interior, Fish Wildl.Serv., Washington, DC* 505 p. (USGS Data File).

EcoReference No.: 6797
User Define 2: REPS,WASH,CALF,CORE,SENT
Chemical of Concern:
EDT,RSM,SZ,24DXY,ACP,ACR,ADC,ATZ,AZ,BS,Captan,CBF,CBL,CMPH,CPY,DBN,DFZ,DMB,DMT,DPDP,DS,DU,DZ,FO,GYP,HCCH,HXZ,LNR,MBZ,MDT,MLN,MLT,MOM,MP,MTL,Naled,OYZ,PEB,PAQT,PRT,PSM,Folpet,PYN,CYT,DMM,EFS,NAA,NTP,PMR,PPB,TFN,WFN; Habitat: A; Effect Codes: MOR,PHY.

133. McCutchen, B. F., Hoover, K., Preisler, H. K., Betana, M. D., Herrmann, R., Robertson, J. L., and Hammock, B. D. (97). **Interactions of Recombinant and Wild-Type Baculoviruses with Classical Insecticides and Pyrethroid-Resistant Tobacco Budworm (Lepidoptera: Noctuidae).** *J.Econ.Entomol.* 90: 1170-1180.

EcoReference No.: 74124
User Define 2: WASHT
Chemical of Concern: ATN,CYP,DDT,ES,MOM,PFF,PYT; Habitat: T; Effect Codes: MOR.

134. McPherson, R. M., Seagraves, M. P., Ottens, R. J., and Bundy, C. S. (2003). **Leaf Dip Bioassay to Determine Susceptibility of Tobacco Hornworm (Lepidoptera: Sphingidae) to Acephate, Methomyl and Spinosad.** *J.Entomol.Sci.* 38: 262-268.

EcoReference No.: 72750
User Define 2: WASHT,CORE,SENT,CSC
Chemical of Concern: ACP,MOM,SS; Habitat: T; Effect Codes: MOR,BEH.

135. Mingjing, Q., Zhaojun, H., Xinjun, X., and lina, Y. (2003). **Triazophos Resistance Mechanisms in the Rice Stem Borer (Chilo suppressalis Walker).** *Pestic.Biochem.Physiol.* 77: 99-105.

EcoReference No.: 73601
User Define 2: WASHT
Chemical of Concern: MOM,MTM,FPN; Habitat: T; Effect Codes: MOR.

136. Mochizuki, M. (94). **Variations in Insecticide Susceptibility of the Predatory Mite, Amblyseius womersleyi Schicha (Acarina: Phytoseiidae), in the Tea Fields of Japan.** *Appl.Entomol.Zool.* 29: 203-209.

EcoReference No.: 62893
User Define 2: WASHT
Chemical of Concern: MOM,MDT,PMR,CYP,FNV,FPP,FVL; Habitat: T; Effect Codes: MOR.

137. Mohaghegh, J., De Clercq, P., and Tirry, L. (2000). **Toxicity of Selected Insecticides to the Spined Soldier Bug, Podisus maculiventris (Heteroptera: Pentatomidae).** *Biocontrol Sci.Technol.* 10: 33-40.

EcoReference No.: 62894
Chemical of Concern: DM,MOM; Habitat: T; Effect Codes: MOR,GRO,REP.

138. Mohamed, A. I., Nair, G. A., Kassem, H., and Nuruzzaman, M. (95). **Impacts of Pesticides on the Survival and Body Mass of the Earthworm Aporrectodea caliginosa (Annelida: Oligochaeta).** *Acta Zool.Fenn.* 196: 344-347.

EcoReference No.: 40226
Chemical of Concern: MOM,PAQT,GYP,FNTH; Habitat: T; Effect Codes: MOR,GRO.

139. Morale, S. G. and Kurundkar, B. P. (89). **Effect of Some Pesticides on Root-Knot of Brinjal Caused by Meliodogyne incognita.** *Indian J.Plant Pathol.* 7: 164-166.

EcoReference No.: 74745
Chemical of Concern: MOM,CBF,OXC,PRT,CBD,TPE
Endpoint: GRO,POP,PHY,REP; Habitat: T

140. Morale, S. G. and Kurundkar, B. P. (89). **Effect of Some Pesticides on Root-Knot of Brinjal Caused by Meliodogyne incognita.** *Indian J.Plant Pathol.* 7: 164-166.

EcoReference No.: 74745
Chemical of Concern: MOM,CBF,OXC,PRT,CBD,TPE; Habitat: T; Effect Codes: GRO,POP,PHY,REP.

141. Nalecz-Jawecki, G., Kucharczyk, E., and Sawicki, J. (2002). **The Sensitivity of Protozoan Spirostomum ambiguum to Selected Pesticides.** *Fresenius Environ.Bull.* 11: 98-74.

EcoReference No.: 69821
User Define 2: WASH,CALF,CORE,SENT
User Define 3: 01/28/2004
Chemical of Concern: CYP,DM,PRM,HCCH,CBL,MOM,MLN,Captan,LNR,GYP,PDM,BT,DMB; Habitat: A; Effect Codes: MOR.

142. Nielsen, S. L. (86). **Postharvest Sprayings with 2 Systemic Pesticides Against the Black Currant Gall Mite (Cecidophyopsis ribis Westw.) on Black Currant (Ribes nigrum).** *Tidsskr.Planteavl.* 90: 385-388.

EcoReference No.: 74173
User Define 2: WASHT
Chemical of Concern: MOM,OML,ES; Habitat: T; Effect Codes: POP.

143. Nord, J. C. (90). **Toxicities of Insecticide Residues on Loblolly Pine Foliage to Leaffooted Pine Seed Bug Adults (Heteroptera: Coreidae).** *J.Entomol.Sci.* 25: 3-9.

EcoReference No.: 64390
Chemical of Concern: MOM,FNV,DM,AZ,PRM,PSM,FNT,PPX,TCF,MLN,CPYM,CPY,DMT; Habitat: T; Effect Codes: MOR.

144. Omer, A. D., Johnson, M. W., Tabashnik, B. E., Costa, H. S., and Ullman, D. E. (93). **Sweetpotato Whitefly Resistance to Insecticides in Hawaii: Intra-island Variation is Related to Insecticide Use.** *Entomol.Exp.Appl.* 67: 173-182.

EcoReference No.: 74148
User Define 2: WASHT
Chemical of Concern: MOM,ACP,PMR; Habitat: T; Effect Codes: MOR.

145. Othman, M. A., Antonious, G. F., Khattab, M. M., Abdel-All, A., and Khamis, A. E. (87). **Residues of Dimethoate and Methomyl on Tomato and Cabbage in Relation to Their Effect on Quality-Related**

Properties. *Environ.Toxicol.Chem.* 6: 947-952.

EcoReference No.: 73578
User Define 2: WASHT
Chemical of Concern: MOM,DMT; Habitat: T; Effect Codes: ACC.

146. Ottens, R. J., Todd, J. W., Herzog, G. A., and Bass, M. H. (84). **Toxicity of Selected Insecticides to Laboratory and Field Colonies of the Soybean Looper.** *J.Agric.Entomol.* 1: 367-370.

EcoReference No.: 73702
User Define 2: WASHT,CORE
Chemical of Concern: MOM,ACP,FNV,PMR,MP; Habitat: T; Effect Codes: MOR.

147. Palmer, W. E., Puckett, K. M., Anderson, J. R.,Jr., and Bromley, P. T. (98). **Effects of Foliar Insecticides on Survival of Northern Bobwhite Quail Chicks.** *J.Wildl.Manag.* 62: 1565-1573.

EcoReference No.: 66909
Chemical of Concern: MOM,MP,TDC; Habitat: T; Effect Codes: BCM,BEH,MOR.

148. Pantani, C., Pannunzio, G., De Cristofaro, M., Novelli, A. A., and Salvatori, M. (97). **Comparative Acute Toxicity of Some Pesticides, Metals, and Surfactants to Gammarus italicus Goedm. and Echinogammarus tibaldii Pink. and Stock.** *Bull.Environ.Contam.Toxicol.* 59: 963-967.

Cadmium 2001//Atrazine 2001//
EcoReference No.: 18621
User Define 2: ECOTOX MED,WASH,CALF
Chemical of Concern:
ACR,ATZ,AZ,CBF,CBL,DMT,FMP,HCCH,MLT,MOM,MP,Cd,ADC,DDT,MXC,OML,TBC,Cu,Cr,PPX,Zn, Hg
Endpoint: MOR; Habitat: A

149. Pantani, C., Pannunzio, G., De Cristofaro, M., Novelli, A. A., and Salvatori, M. (97). **Comparative Acute Toxicity of Some Pesticides, Metals, and Surfactants to Gammarus italicus Goedm. and Echinogammarus tibaldii Pink. and Stock.** *Bull.Environ.Contam.Toxicol.* 59: 963-967.

EcoReference No.: 18621
User Define 2: ECOTOX MED,WASH,CALF
Chemical of Concern:
ACR,ATZ,AZ,CBF,CBL,DMT,FMP,HCCH,MLT,MOM,MP,Cd,ADC,DDT,MXC,OML,TBC,Cu,Cr,PPX,Zn, Hg; Habitat: A; Effect Codes: MOR.

150. Pantani, C., Pannunzio, G., De Cristofaro, M., Novelli, A. A., and Salvatori, M. (97). **Comparative Acute Toxicity of Some Pesticides, Metals, and Surfactants to Gammarus italicus Goedm. and Echinogammarus tibaldii Pink. and Stock.** *Bull.Environ.Contam.Toxicol.* 59: 963-967.

EcoReference No.: 18621
User Define 2: ECOTOX MED,WASH,CALF
Chemical of Concern:
ACR,ATZ,AZ,CBF,CBL,DMT,FMP,HCCH,MLT,MOM,MP,Cd,ADC,DDT,MXC,OML,TBC,Cu,Cr,PPX,Zn, Hg; Habitat: A; Effect Codes: MOR.

151. Pap, L. and Farkas, R. (94). **Monitoring of Resistance of Insecticides in House Fly (Musca domestica) Populations in Hungary.** *Pestic.Sci.* 40: 245-258.

EcoReference No.: 70791
User Define 2: REPS,WASH,CORE,SENT

Chemical of Concern:
RSM,DDT,HCCH,MOM,CYP,DM,BRSM,PMR,MLN,TCF,PTP,DFZ,CYR,PYN,PPX; Habitat: T; Effect Codes: MOR,POP.

152. Parrott, W. L., Mccarty, J. C. Jr., Lane, H. C., Jenkins, J. N., and Hedin, P. A. (83). **Effect of Methomyl on Concentration of Anthocyanin, Tannin, and Chlorophyll in Cotton Leaves.** *Southwest.Entomol.* 8: 94-97.

EcoReference No.: 25338
User Define 2: WASH,CSC
Chemical of Concern: MOM; Habitat: T; Effect Codes: BCM.

153. Perez, C. J., Alvarado, P., Narvaez, C., Miranda, F., Hernandez, L., Vanegas, H., Hruska, A., and Shelton, A. M. (2000). **Assessment of Insecticide Resistance in Five Insect Pests Attacking Field and Vegetable Crops in Nicaragua.** *J.Econ.Entomol.* 93: 1779-1787.

EcoReference No.: 59602
Chemical of Concern: MOM,DM,MTM,CPY,ES; Habitat: T; Effect Codes: MOR.

154. Pitre, H. N. (88). **Relationship of Fall Armyworm (Lepidoptera: Noctuidae) from Florida, Honduras, Jamaica, and Mississippi: Susceptibility to Insecticides with Reference to Migration.** *Fla.Entomol.* 71: 56-61.

EcoReference No.: 73699
User Define 2: WASHT,CALFT,CORE
Chemical of Concern: MOM,CBL,PMR,CPY,MP; Habitat: T; Effect Codes: MOR.

155. Porter, W. P., Green, S. M., Debbink, N. L., and Carlson, I. (93). **Groundwater Pesticides: Interactive Effects of Low Concentrations of Carbamates Aldicarb and Methomyl and the Triazine Metribuzin on Thyroxine and Somatotropin Levels in White Rats.** *J.Toxicol.Environ.Health* 40: 15-34.

EcoReference No.: 72756
User Define 2: WASHT,CORE,SENT,NA
Chemical of Concern: ADC,MOM,MBZ,DMM; Habitat: T; Effect Codes: BCM.

156. Porter, W. P., Green, S. M., Debbink, N. L., and Carlson, I. (93). **Groundwater Pesticides: Interactive Effects of Low Concentrations of Carbamates Aldicarb and Methomyl and the Triazine Metribuzin on Thyroxine and Somatotropin Levels in White Rats.** *J.Toxicol.Environ.Health* 40: 15-34.

EcoReference No.: 72756
User Define 2: WASHT,CORE,SENT,NA
Chemical of Concern: ADC,MOM,MBZ,DMM; Habitat: T; Effect Codes: BCM.

157. Pree, D. J., Marshall, D. B., and Archibald, D. E. (90). **Resistance to Methomyl in Populations of the Spotted Tentiform Leafminer (Lepidoptera: Gracillariidae) from Southern Ontario.** *J.Econ.Entomol.* 83: 320-324.

EcoReference No.: 74136
User Define 2: WASHT
Chemical of Concern: MOM,OML,PMR,DFZ; Habitat: T; Effect Codes: MOR.

158. Pree, D. J., Whitty, K. J., Bittner, L. A., and Pogoda, M. K. (2002). **Mechanisms of Resistance to Organophosphorus Insecticides in Populations of the Obliquebanded Leafroller Choristoneura rosaceana (Harris) (Lepidoptera: Tortricidae) from Southern Ontario.** *Pest Manag.Sci.* 59: 79-84.

EcoReference No.: 74170
User Define 2: WASHT

Chemical of Concern: MOM,Naled,CPY,CBL,CYP1; Habitat: T; Effect Codes: MOR,BCM,ACC.

159. Price, J. F. and Kring, J. B. (91). **Response of Twospotted Spider Mite, Tetranychus urticae Koch, and Fruit Yield to New Miticides and Their Use Patterns in Strawberries.** *J.Agric.Entomol.* 8: 83-91.

EcoReference No.: 73705
User Define 2: WASH,CORE
Chemical of Concern: MOM,PPG,CTZ,CHX,FNV,FVL; Habitat: T; Effect Codes: GRO,POP.

160. Radwan, M. A., El-Wakil, H. B., and Osman, K. A. (92). **Toxicity and Biochemical Impact of Certain Oxime Carbamate Pesticides Against Terrestrial Snail, Theba pisana (Muller).** *J.Environ.Sci.Health Part B* 27: 759-773.

EcoReference No.: 74140
User Define 2: WASHT
Chemical of Concern: MOM,ADC,OML; Habitat: T; Effect Codes: MOR,BCM.

161. Radwan, M. A., El-Wakil, H. B., and Osman, K. A. (92). **Toxicity and Biochemical Impact of Certain Oxime Carbamate Pesticides Against Terrestrial Snail, Theba pisana (Muller).** *J.Environ.Sci.Health Part B* 27: 759-773.

EcoReference No.: 74140
User Define 2: WASHT
Chemical of Concern: MOM,ADC,OML; Habitat: T; Effect Codes: MOR,BCM.

162. Rathman, R. J., Johnson, M. W., Rosenheim, J. A., Tabashnik, B. E., and Purcell, M. (92). **Sexual Differences in Insecticide Susceptibility and Synergism with Piperonyl Butoxide in the Leafminer Parasitoid Diglyphus begini (Hymenoptera: Eulophidae).** *J.Econ.Entomol.* 85: 15-20.

EcoReference No.: 73710
User Define 2: WASHT,CORE
Chemical of Concern: MOM,PPB; Habitat: T; Effect Codes: MOR.

163. Rathman, R. J., Johnson, M. W., Tabashnik, B. E., and Spollen, K. M. (95). **Variation in Susceptibility to Insecticides in the Leafminer Parasitoid Ganaspidium utilis (Hymenoptera: Eucoilidae).** *J.Econ.Entomol.* 88: 475-479.

EcoReference No.: 74128
User Define 2: WASHT
Chemical of Concern: MOM,OML,PMR,MLN,FNV; Habitat: T; Effect Codes: MOR.

164. Richardson, J. M., Palumbo, J. C., Kerns, D. L., Umeda, K., and Natwick, E. T. (98). **Control of Desert Vegetable Pests with Success Naturalyte Insect Control.** *Down Earth* 53: 6-12.

EcoReference No.: 73121
User Define 2: NEW CSC,WASHT,CORE
Chemical of Concern:
SS,CYP,EFV,IDC,CYF,MOM,TDC,ES,CFP,TUZ,FDN,LCYT,TLM,ZCYP,EMMB; Habitat: T; Effect Codes: MOR,POP.

165. Rinkleff, J. H., Hutchison, W. D., Campbell, C. D., Bolin, P. C., and Bartels, D. W. (95). **Insecticide Toxicity in European Corn Borer (Lepidoptera: Pyralidae): Ovicidal Activity and Residual Mortality to Neonates.** *J.Econ.Entomol.* 88: 246-253.

EcoReference No.: 74109
User Define 2: WASHT

Chemical of Concern: MOM,PMR,MP,TDL,ZCYP,LCYP; Habitat: T; Effect Codes: MOR.

166. Roberts, B. L. and Dorough, H. W. (84). **Relative Toxicities of Chemicals to the Earthworm Eisenia foetida.** *Environ.Toxicol.Chem.* 3: 67-78.

EcoReference No.: 40531
User Define 2: CORE
User Define 3: 09/17/2004
Chemical of Concern:
Cd,Pb,Cu,DDT,PAH,PPB,IDM,DMM,CYP,PMR,CBF,ADC,MOM,CBL,PPX,CPY,NHN,CTC,TFN,CH3IBNZ,PAQT,MBZ,BMY,DCTP,ACP,TPM,Captan,PRN,MLN,CBD,NCTN,FML,FNF,ES,FNV,DU; Habitat: T; Effect Codes: MOR.

167. Roberts, B. L. and Dorough, H. W. (84). **Relative Toxicities of Chemicals to the Earthworm Eisenia foetida.** *Environ.Toxicol.Chem.* 3: 67-78.

EcoReference No.: 40531
User Define 2: CORE
User Define 3: 09/17/2004
Chemical of Concern:
Cd,Pb,Cu,DDT,PAH,PPB,IDM,DMM,CYP,PMR,CBF,ADC,MOM,CBL,PPX,CPY,NHN,CTC,TFN,CH3IBNZ,PAQT,MBZ,BMY,DCTP,ACP,TPM,Captan,PRN,MLN,CBD,NCTN,FML,FNF,ES,FNV,DU; Habitat: T; Effect Codes: MOR.

168. Roberts, M. H. Jr., Warinner, J. E., Tsai, C. F., Wright, D., and Cronin, L. E. (82). **Comparison of Estuarine Species Sensitivities to Three Toxicants.** *Arch.Environ.Contam.Toxicol.* 11: 681-692.

EcoReference No.: 10443
User Define 2: ECOTOX MED,WASH
Chemical of Concern: MOM,Cd; Habitat: A; Effect Codes: BCM,MOR.

169. Rose, R. L., Sparks, T. C., and Smith, C. M. (88). **Insecticide Toxicity to the Soybean Looper and the Velvetbean Caterpillar (Lepidoptera: Noctuidae) as Influenced by Feeding on Resistant Soybean (PI 227687) Leaves and Coumestrol.** *J.Econ.Entomol.* 81: 1288-1294.

EcoReference No.: 74118
User Define 2: WASHT
Chemical of Concern: ACP,PMR,FNV,MP,MOM; Habitat: T; Effect Codes: MOR.

170. Salama, H. S., Foda, M. S., Zaki, F. N., and Moawad, S. (84). **Potency of Combinations of Bacillus thuringiensis and Chemical Insecticides on Spodoptera littoralis (Lepidoptera: Noctuidae).** *J.Econ.Entomol.* 77: 885-890.

EcoReference No.: 74456
Chemical of Concern: MOM,CBL,FNV,DMT,PMR,PFF,CYP,DFZ; Habitat: T; Effect Codes: MOR.

171. Salama, H. S. and Moawed, S. M. (88). **Joint Action of Nuclear Polyhedrosis Virus and Chemical Insecticides Against the Black Cutworm, Agrotis ipsilon (Hufn.).** *Acta Biol.Hung.* 39: 99-107.

EcoReference No.: 74120
User Define 2: WASHT
Chemical of Concern: DCM,FNV,CYP,MOM; Habitat: T; Effect Codes: MOR.

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EcoReference No.: 74143
User Define 2: WASHT
Chemical of Concern: MOM; Habitat: T; Effect Codes: POP.

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Chemical of Concern: MOM; Habitat: T; Effect Codes: BCM.

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Chemical of Concern: MOM; Habitat: T; Effect Codes: BCM.

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Chemical of Concern: MOM; Habitat: T; Effect Codes: BCM.

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Chemical of Concern: MOM,FNV,MLN; Habitat: T; Effect Codes: MOR,GRO.

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User Define 2: WASHT
Chemical of Concern: CYR,TDC,FNV,MOM,PMR,MTM,ES; Habitat: T; Effect Codes: MOR.

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Chemical of Concern: CYR,CYF,DMT,FPN,TVP,PMR,SS,PYN,MOM; Habitat: T; Effect Codes: MOR,GRO.

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User Define 2: WASHT,CORE
Chemical of Concern: DDVP,DDT,MOM,PMR,DMT,Naled; Habitat: T; Effect Codes: MOR.

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User Define 2: REPS,WASH,CALF,CORE SENT
Chemical of Concern: SZ,MOM,PPB; Habitat: T; Effect Codes: MOR.

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User Define 2: WASHT
Chemical of Concern: MOM,MLN,PRN,AZ; Habitat: T; Effect Codes: MOR.

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User Define 2: WASHT
Chemical of Concern: MOM,DDVP,PPX; Habitat: T; Effect Codes: BCM,MOR.

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EcoReference No.: 74129
User Define 2: WASHT,CALFT
Chemical of Concern: DZ,MOM; Habitat: T; Effect Codes: MOR,PHY.

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EcoReference No.: 63055
User Define 2: WASHT
Chemical of Concern: MOM,DS,DMT,CPY,MLN,PRN,CBF
Endpoint: MOR; Habitat: T

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EcoReference No.: 63055
User Define 2: WASHT
Chemical of Concern: MOM,DS,DMT,CPY,MLN,PRN,CBF; Habitat: T; Effect Codes: MOR.

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EcoReference No.: 60134
Chemical of Concern: CBF,FNF,MOM,PSM,FNT,Cr,Cu,Cd
Endpoint: BEH,MOR; Habitat: A

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EcoReference No.: 60134
Chemical of Concern: CBF,FNF,MOM,PSM,FNT,Cr,Cu,Cd; Habitat: A; Effect Codes: BEH,MOR.

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Chemical of Concern: MOM,EFV,PMR,TDC,CBL; Habitat: T; Effect Codes: POP.

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User Define 2: WASHT
Chemical of Concern: MOM; Habitat: T; Effect Codes: BCM.

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EcoReference No.: 63722
Chemical of Concern: MOM,ACP,EFX; Habitat: T; Effect Codes: MOR,GRO.

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EcoReference No.: 74116
User Define 2: WASHT
Chemical of Concern: CPY,FNV,ACP,MOM,DMT,CBF
Endpoint: POP; Habitat: T

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EcoReference No.: 74116
User Define 2: WASHT
Chemical of Concern: CPY,FNV,ACP,MOM,DMT,CBF; Habitat: T; Effect Codes: POP.

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EcoReference No.: 74126
User Define 2: WASHT
Chemical of Concern: MOM,PMR; Habitat: T; Effect Codes: MOR.

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EcoReference No.: 64166
User Define 2: WASH
Chemical of Concern: MOM,ACP,AZ,BFT,CYH,CYP,ES,EFV,FPN,MP,OML,PFF,TDC; Habitat: T; Effect Codes: MOR.

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EcoReference No.: 41092
User Define 2: MED,WASH,CORE
Chemical of Concern: FNV,MOM,MP,PMR; Habitat: T; Effect Codes: PHY,GRO.

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EcoReference No.: 73594
User Define 2: WASHT,CORE
Chemical of Concern: MOM,PMR,FVT,DM,AZ,PSM; Habitat: T; Effect Codes: MOR.

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EcoReference No.: 74144
User Define 2: WASHT,CORE
Chemical of Concern: MOM,AV,CYR; Habitat: T; Effect Codes: POP.

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EcoReference No.: 73701
User Define 2: WASHT,CORE
Chemical of Concern: MOM,AV; Habitat: T; Effect Codes: MOR.

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User Define 2: WASHT
Chemical of Concern: MOM,MP; Habitat: T; Effect Codes: BCM,MOR.

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User Define 2: WASHT
Chemical of Concern: MOM; Habitat: T; Effect Codes: ACC,BCM.

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Chemical of Concern: MOM,PFF,CYP,LUF; Habitat: T; Effect Codes: POP.

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EcoReference No.: 74169
User Define 2: WASH
Chemical of Concern: MOM,EFV,ES,CBL; Habitat : T; Effect Codes: PHY,POP,ACC,MOR.

203. Wei, L. Y., Chao, J. S., and Hong, C. C. (97). **Assessment of the Ability of Propoxur, Methomyl, and Aldicarb, Three Carbamate Insecticides, to Induce Micronuclei In Vitro in Cultured Chinese Hamster Ovary Cells and In Vivo in BALB/c Mice.** *Environ.Mol.Mutagen.* 29: 386-393.

EcoReference No.: 74175
User Define 2: WASHT
Chemical of Concern: ADC,MOM,PPX; Habitat: T; Effect Codes: CEL.

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EcoReference No.: 74175
User Define 2: WASHT
Chemical of Concern: ADC,MOM,PPX; Habitat: T; Effect Codes: CEL.

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EcoReference No.: 73709
User Define 2: WASHT,CALFT
Chemical of Concern: MOM,CBF,CBL
Endpoint: POP; Habitat: T

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EcoReference No.: 73709
User Define 2: WASHT,CALFT
Chemical of Concern: MOM,CBF,CBL; Habitat: T; Effect Codes: POP.

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User Define 2: MED,WASH,CORE
Chemical of Concern: CBF,DS,MOM,PRT
Endpoint: POP,GRO; Habitat: T

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EcoReference No.: 73704
User Define 2: WASHT,CORE
Chemical of Concern: MOM,ACP,DM,PMR,IMC,CFP,TDC,EMMB; Habitat: T; Effect Codes: MOR.

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EcoReference No.: 70972
User Define 2: WASHT
Chemical of Concern: MOM,CFP,PMR,TDC; Habitat: T; Effect Codes: MOR,POP.

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EcoReference No.: 44270
User Define 2: ECOTOX MED,WASH,CALF
Chemical of Concern: CBL,AZ,DMT,MOM,PHSL,FNV; Habitat: T; Effect Codes: PHY.

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Chemical of Concern: MOM,CBL,FNV,DMT,PHSL; Habitat: T; Effect Codes: PHY.

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EcoReference No.: 71546
User Define 2: WASHT
Chemical of Concern: FNV,IMC,MOM,DMT,ES; Habitat: T; Effect Codes: MOR,REP.

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EcoReference No.: 73604
User Define 2: WASHT
Chemical of Concern: MOM,FVT; Habitat: T; Effect Codes: BCM,PHY.

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EcoReference No.: 66667
User Define 2: WASHT
Chemical of Concern: MOM,BFT,SS,CYT; Habitat: T; Effect Codes: MOR.

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EcoReference No.: 73599
User Define 2: WASHT,CALFT,CORE
Chemical of Concern:
MOM,PMR,CYP,CYT,BFT,TMT,FVL,DZ,CPY,MP,CBL,TDC,DDVP,SPS,TLM,MLN,FNV; Habitat: T; Effect Codes: MOR.

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EcoReference No.: 55928
User Define 2: WASHT
Chemical of Concern: MOM,PMR,CYP,FNV,DZ,BDC,AMZ,IMC; Habitat: T; Effect Codes: MOR.

ECOTOX only

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EcoReference No.: 2841
User Define 2: ECOTOX MED,WASH
Chemical of Concern: DMT,MOM,NSM; Habitat: A; Effect Codes: MOR,PHY,BEH.

2. Aboul-Ela, I. A. and Khalil, M. T. (87). **The Chronic Toxicity of Three Pollutants upon the Freshwater Snail Helisoma trivolvis.** *Proc.Zool.Soc.A.R.Egypt* 13: 17-29.

EcoReference No.: 2855
User Define 2: ECOTOX MED,WASH
Chemical of Concern: DMT,MOM,NSM; Habitat: A; Effect Codes: GRO,REP.

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EcoReference No.: 46844
User Define 2: WASH,SENT
User Define 3: 03/03/2004
Chemical of Concern: MOM; Habitat: T; Effect Codes: ACC.

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EcoReference No.: 64055
Chemical of Concern: ACP,PTBNa,AZ,BFT,CPY,DCTP,EFV,MLN,MOM,OML; Habitat: T; Effect Codes: PHY,GRO.

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EcoReference No.: 74370
Chemical of Concern: MOM,PMR,PRN,DCF,BMY,Captan,CTN; Habitat: T; Effect Codes: PHY,BCM.

6. Boyd, C. A., Weiler, M. H., and Porter, W. P. (90). **Behavioral and Neurochemical Changes Associated with Chronic Exposure to Low-Level Concentration of Pesticide Mixtures.** *J.Toxicol.Environ.Health* 30: 209-221.

EcoReference No.: 74312
Chemical of Concern: MOM,ADC,MBZ; Habitat: T; Effect Codes: BEH,BCM.

7. Carter, F. L. and Graves, J. B. (72). **Measuring Effects of Insecticides on Aquatic Animals.** *La.Agric.* 16: 14-15.

EcoReference No.: 942
User Define 2: ECOTOX MED,WASH,CALF
Chemical of Concern: CPY,MP,MLN,DCTP,MOM,CBL,ADC,CBF,DDT,TXP,MRX
Endpoint: MOR; Habitat: A

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EcoReference No.: 942
User Define 2: ECOTOX MED,WASH,CALF
Chemical of Concern: CPY,MP,MLN,DCTP,MOM,CBL,ADC,CBF,DDT,TXP,MRX; Habitat: A; Effect Codes: MOR.

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EcoReference No.: 942
User Define 2: ECOTOX MED,WASH,CALF
Chemical of Concern: CPY,MP,MLN,DCTP,MOM,CBL,ADC,CBF,DDT,TXP,MRX; Habitat: A; Effect Codes: MOR.

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EcoReference No.: 71766
User Define 2: WASH,SENT
Chemical of Concern: Captan,MOM,DINO,BMY,Cu,THM; Habitat: T; Effect Codes: MOR.

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EcoReference No.: 74361
Chemical of Concern: MOM,DDVP; Habitat: T; Effect Codes: PHY.

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EcoReference No.: 74357
Chemical of Concern: MOM; Habitat: T; Effect Codes: MOR.

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EcoReference No.: 74663
Chemical of Concern: MOM; Habitat: A; Effect Codes: MOR.

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EcoReference No.: 74356
Chemical of Concern: MOM,CBF,OML
Endpoint: MOR; Habitat: T

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EcoReference No.: 74356
Chemical of Concern: MOM,CBF,OML; Habitat: T; Effect Codes: MOR.

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EcoReference No.: 74364
Chemical of Concern: MOM; Habitat: T; Effect Codes: ACC.

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of Agrochemicals II, Meet.Am.Chem.Soc., Washington, D.C. 107-120.

EcoReference No.: 74373
Chemical of Concern: DFZ,FNV,PMR,DCM,CPYM,MOM,ACP,DDVP,DZ; Habitat: T; Effect Codes: MOR.

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EcoReference No.: 36955
Chemical of Concern: AZ,ES,PMR,FNV,CYP,MOM; Habitat: T; Effect Codes: MOR.

19. Harris, C. R. and Svec, H. J. (70). **Laboratory Studies on the Contact Toxicity of Some Insecticides to Honeybees.** *Pestic.Prog.* 8: 25-28.

EcoReference No.: 70979
User Define 2: WASHT,CALFT,CORE
Chemical of Concern:
PRN,CBL,DLD,AND,DZ,EN,CHD,DDT,ES,HPT,MLN,MOM,CPY,CBF,Naled,AZ,DMT
Endpoint: MOR; Habitat: T

20. Harris, C. R. and Svec, H. J. (70). **Laboratory Studies on the Contact Toxicity of Some Insecticides to Honeybees.** *Pestic.Prog.* 8: 25-28.

EcoReference No.: 70979
User Define 2: WASHT,CALFT,CORE
Chemical of Concern:
PRN,CBL,DLD,AND,DZ,EN,CHD,DDT,ES,HPT,MLN,MOM,CPY,CBF,Naled,AZ,DMT; Habitat: T; Effect Codes: MOR.

21. Harris, C. R. and Svec, H. J. (68). **Toxicological Studies on Cutworms IV. Laboratory Investigations on the Toxicity of Insecticides to the Variegated Cutworm with Special Reference to Method of Application on Insecticidal Activity.** *J.Econ.Enthomol.* 61: 970-973.

EcoReference No.: 44296
User Define 3: BPK/TRV
Chemical of Concern: DDT,MOM,AND,PRN,CPY; Habitat: T; Effect Codes: MOR.

22. Harvey, J. Jr., Jelinek, A. G., and Sherman, H. (73). **Metabolism of Methomyl in the Rat.** *J.Agric.Food Chem.* 21: 769-775.

EcoReference No.: 74355
Chemical of Concern: MOM; Habitat: T; Effect Codes: PHY.

23. Harvey, J. Jr. and Reiser, R. W. (73). **Metabolism of Methomyl in Tobacco, Corn, and Cabbage.** *J.Agric.Food Chem.* 21: 775-783.

EcoReference No.: 74358
Chemical of Concern: MOM; Habitat: T; Effect Codes: PHY.

24. Hashimoto, Y. and Fukami, J. I. (69). **Toxicity of Orally and Topically Applied Pesticide Ingredients to Carp, Cyprinus carpio Linne.** *Sci.Pest Control (Botyu-Kagaku)* 34: 63-66.

EcoReference No.: 9038
User Define 2: ECOTOX MED,WASH,CALF
Chemical of Concern:

DDT,EN,DLD,AND,PRN,MP,DZ,MOM,RTN,ATN,FBM,Ziram,PCP,FNT,ANZ; Habitat: A; Effect Codes: MOR.

25. Hashimoto, Y. and Nishiuchi, Y. (81). **Establishment of Bioassay Methods for the Evaluation of Acute Toxicity of Pesticides to Aquatic Organisms.** *J.Pestic.Sci.* 6: 257-264 (JPN) (ENG ABS).

    EcoReference No.: 5761
    User Define 2: REPS,WASH,CALF,CORE,SENT
    Chemical of Concern:
    DDT,TPN,FNTH,24OXY,PRN,PAQT,CBL,PYN,RIN,Zineb,CZE,FBM,PPX,FBM,PPX,MOM,ES,TBC,MLN,FE,SZ,PCP,Captan,AND,DZ,ETN,FLAC,PPN,FNT; Habitat: A; Effect Codes: MOR.

26. Humaydan, H. S. and Scott, E. W. (77). **Methomyl Insecticide Selective Phytotoxicity on Sweet Corn Hybrids and Inbreds Having the Texas Male Sterile Cytoplasm.** *Hortscience* 12: 312-313.

    EcoReference No.: 41570
    User Define 2: WASH,SENT
    User Define 3: 05/26/2004
    Chemical of Concern: MOM; Habitat: T; Effect Codes: GRO.

27. Jaglan, P. S. and Arnold, T. S. (84). **Metabolism of the Insecticidal Carbamate Methyl N-(((((1,1-Dimethylethyl)(5-5-Dimethyl-2-Thioxo-1,3,2-Dioxaphosphorinan-2-yl)-Amino)thio)-Methylamino) Carbonyl)-Ethanimidothioate in Rats.** *J.Agric.Food Chem.* 32: 618-622.

    EcoReference No.: 74354
    Chemical of Concern: MOM; Habitat: T; Effect Codes: PHY,ACC.

28. Jalaluddin, M. and Mohanasundaram, M. (89). **Residual Toxicity of Four Insecticides Recommended for Control of Coconut Coccids on the Parasitoid Fauna of Opisina arenosella Wlk.** *Entomon* 14: 199-202.

    EcoReference No.: 74149
    User Define 2: WASHT
    Chemical of Concern: MOM,DMT,MP; Habitat: T; Effect Codes: MOR.

29. Kanazawa, J. (83). **In Vitro and In Vivo Effects of Organophosphorus and Carbamate Insecticides on Brain Acetylcholinesterase Activity of Fresh-Water Fish, Topmouth gudgeon.** *Bull.Natl.Inst.Agric.Sci.Ser.C* 37: 19-30.

    EcoReference No.: 11600
    User Define 2: ECOTOX MED,WASH,CALF
    Chemical of Concern: DZ,FNT,PRN,PPX,CBL,MOM; Habitat: A; Effect Codes: BCM,MOR,BEH,PHY.

30. Khater, A. A., El-Sheakh, A. A., El-Sheamy, M. K., and Hussein, M. Z. (90). **Biochemical Effects of Lannate and Larvin on Tilapia nilotica Fingerlings.** *Egypt.J.Appl.Sci.* 5: 227-235.

    EcoReference No.: 16197
    User Define 2: ECOTOX MED,WASH
    Chemical of Concern: MOM,TDC; Habitat: A; Effect Codes: BCM.

31. Khodayari, K., Smith, R. J. Jr., and Tugwell, N. P. (86). **Interaction of Propanil and Selected Insecticides on Rice (Oryza sativa).** *Weed Sci.* 34: 800-803.

    EcoReference No.: 74315
    Chemical of Concern: MOM,MP,CBL,PPN; Habitat: T; Effect Codes: PHY,POP,GRO.

32. Kiigemagi, U. and Deinzer, M. L. (79). **Dislodgeable and Total Residues of Methomyl on Mint Foliage.**

Bull.Environ.Contam.Toxicol. 22: 517-21.

EcoReference No.: 74359
Chemical of Concern: MOM; Habitat: T; Effect Codes: ACC.

33. Krieger, R. I., South, P., Trigo, A. M., and Flores, I. (98). **Toxicity of Methomyl Following Intravenous Administration in the Horse.** *Vet.Hum.Toxicol.* 40: 267-269.

EcoReference No.: 63148
User Define 2: WASHT
Chemical of Concern: MOM; Habitat: T; Effect Codes: PHY,BEH.

34. Kuehnle, A. R. and Earle, E. D. (89). **In Vitro Selection for Methomyl Resistance in CMS-T Maize.** *Theor.Appl.Genet.* 78: 672-682.

EcoReference No.: 74141
User Define 2: WASH
Chemical of Concern: MOM; Habitat: T; Effect Codes: GRO.

35. Mansour, S. A. (87). **Is it Possible to Use the Honey Bee Adult as a Bioindicator for the Detection of Pesticide Residues in Plants?** *Acta Biol.Hung.* 38: 69-76.

EcoReference No.: 67982
Chemical of Concern: MOM,CBL,PIRM,FNT,CPY,DCF,FNV,PPX,DZ; Habitat: T; Effect Codes: MOR,ACC.

36. Mansour, S. A., Ali, A. D., and Al-Jalili, M. K. (84). **The Residual Toxicity to Honeybees of Some Insecticides on Clover Flowers: Laboratory Studies.** *J.Apic.Res.* 23: 213-216.

EcoReference No.: 35334
User Define 2: WASHT,NEW1
Chemical of Concern: CBL,FNV,PIRM,PPX,FNT,CPY,MOM,DCF,DZ; Habitat: T; Effect Codes: MOR.

37. Martin, N. A. (86). **Toxicity of Pesticides to Allolobophora caliginosa (Oligochaeta: Lumbricidae).** *N.Z.J.Agric.Res.* 29: 699-706.

EcoReference No.: 44566
User Define 2: WASHT,CALFT,SENT
User Define 3: 7/15/03
Chemical of Concern: Cu,DZ,MOM,CBF,ADC,FMP,IZF,OML; Habitat: T; Effect Codes: GRO, MOR, REP.

38. Martin, N. A. (86). **Toxicity of Pesticides to Allolobophora caliginosa (Oligochaeta: Lumbricidae).** *N.Z.J.Agric.Res.* 29: 699-706.

EcoReference No.: 44566
User Define 2: WASHT,CALFT,SENT
User Define 3: 7/15/03
Chemical of Concern: Cu,DZ,MOM,CBF,ADC,FMP,IZF,OML; Habitat: T; Effect Codes: GRO, MOR, REP.

39. McNamara, D. G. and Pitcher, R. S. (74). **The Control of Arabismosaic Virus in Hops by Soil Fumigation and Fallowing.** *Agro-Ecosystems* 1: 123-129.

EcoReference No.: 74371
Chemical of Concern: MOM,MB,ABC,DPDP,DZM; Habitat: T; Effect Codes: POP.

40. Muirhead-Thomson, R. C. and Merryweather, J. (70). **Ovicides in Simulium Control.** *Nature 221:858 (ABS) (1969) /Bull.W.H.O.* 42: 174-177.

EcoReference No.: 4567
User Define 2: ECOTOX MED,WASH,CALF,CORE
Chemical of Concern: DDVP,ABT,PYN,HCCH,DZ,MXC,DDT,FNTH,CPY,MOM; Habitat: T; Effect Codes: GRO.

41. Niazi, F. R., Raychaudhuri, S. P., and Mahmood, K. (82). **Effect of Seed Dressing Sunnhemp for the Prevention of Tobacco Mosaic Virus Infection.** *Trop.Pest.Manag.* 28: 238-241.

EcoReference No.: 74360
Chemical of Concern: CBF,PRT,MOM,BMY
Endpoint: PHY; Habitat: T

42. Niazi, F. R., Raychaudhuri, S. P., and Mahmood, K. (82). **Effect of Seed Dressing Sunnhemp for the Prevention of Tobacco Mosaic Virus Infection.** *Trop.Pest.Manag.* 28: 238-241.

EcoReference No.: 74360
Chemical of Concern: CBF,PRT,MOM,BMY; Habitat: T; Effect Codes: PHY.

43. Nishiuchi, Y. (80). **Toxicity of Formulated Pesticides to Fresh Water Organisms LXXII.** *The Aquiculture /Suisan Zoshoku 27(4):238-244 (JPN).*

EcoReference No.: 6701
User Define 2: ECOTOX MED,WASH
Chemical of Concern: ACP,MOM,Naled,PPG; Habitat: A; Effect Codes: MOR.

44. Nishiuchi, Y. (72). **Toxicity of Pesticides to Some Water Organisms.** *Bull.Agric.Chem.Insp.Stn.(Noyaku Kensasho Hokoku)* 12: 122-128 (JPN) (ENG TRANSL).

EcoReference No.: 10258
User Define 2: REPS,WASH,CALF,CORE,NO(PCB)
User Define 3: 06/03/2004
Chemical of Concern:
3CE,AMTL,AMTR,AND,As,ATZ,BS,Captan,CBL,CPA,CPY,CTN,Cu,DBN,DCPA,DDT,DDVP,DLD,DMBPRN,DMT,DPA,DSMA,DU,DZ,EDB,EDC,EN,EPTC,ES,ETN,Fe,FLAC,FML,FNT,FNTH,HCCT,Hg,HPT,LNR,MCAP,MCPB,MCPP,MDT,MLN,MOM,MP,MTAS,Naled,Ni,NTCNAl,OPHP,Pb,PCB,PCP,PCP,PCZ,PEB,PHMD,PHSL,PHTH,PNB,PPX,PPZ,PSM,PYN,RTN,SFL,SID,STREP,SZ,TBC,TFN,THM,TPE,TPH,TPM,Zn; Habitat: A; Effect Codes: MOR.

45. Nishiuchi, Y. and Asano, K. (79). **Toxicity of Pesticides to Some Fresh Water Organisms. LIX.** *The Aquiculture /Suisan Zoshoku* 27: 48-55 (JPN) (ENG TRANSL).

EcoReference No.: 6954
User Define 2: REPS,WASH,CALF,CORE,SENT
User Define 3: 07/31/03
Chemical of Concern:
Folpet,PNB,DMT,MLN,Captan,BMC,DU,LNR,DZ,PSM,MDT,PEB,CTN,PQT,ATZ,PPG,CPY,PMT,ACR,MOM,BT,TBC,ACP,HCCH,TFN,PHMD; Habitat: A; Effect Codes: MOR.

46. Nishiuchi, Y. and Yoshida, K. (72). **Toxicities of Pesticides to Some Fresh Water Snails.** *Bull.Agric.Chem.Insp.Stn.* 12: 86-92 (JPN) (ENG ABS) (ENG TRANSL) (Author Communication Used).

EcoReference No.: 9158
User Define 2: WASH,CALF,CORE,SENT

Chemical of Concern:
CZE,PEB,CTN,AMTR,MDT,PPN,PAQT,DDVP,PHMD,TBC,TFN,ES,NPH,TDE,Folpet,DOD,DINO,Ziram,Zineb,PYN,DCF,CuS,RTN,MOM,ETN,DDVP,DMT,FNT,DDT,PCP,AND,CBL,EN,DEM,PRN,MP,PHSL,DZ,TCF; Habitat: A; Effect Codes: PHY,GRO.

47. Norland, R. L., Mulla, M. S., Pelsue, F. W., and Ikeshoji, T. (74). **Conventional and New Insecticides for the Control of Chironomid Midges.** *Proc.Ann.Conf.Calif.Mosq.Control Assoc.* 42: 181-183.

EcoReference No.: 5817
User Define 2: REPS,WASH,CALF,CORE,SENT
Chemical of Concern: AZM,HCCH,DZ,MLN,EIN,AZ,MOM; Habitat: A; Effect Codes: MOR.

48. Office of Pesticide Programs (2000). **Pesticide Ecotoxicity Database (Formerly: Environmental Effects Database (EEDB)).** *Environmental Fate and Effects Division, U.S.EPA, Washington, D.C.*

Contact: Brian Montaque - Email: montaque.brian@epa.gov//
EcoReference No.: 344
User Define 2: REPS,WASH,CALF,CORE,SENT
Chemical of Concern:
24DXY,ACL,ACP,ACR,ATZ,AZ,BDF,BMC,BML,BMN,BS,BT,Captan,CBF,CBL,CFE,CFE,CLNB,CMPH,CPC,CPY,CTN,CTZ,CYD,CYF,CYP,CYT,DBN,DCNA,DFT,DFZ,DM,DMB,DMM,DMP,DMT,DPC,DPDP,DS,DU,DZ,DZM,EFL,EFS,EFV,EP,FHX,FMP,FO,Folpet,FPP,FVL,GYP,HCCH,HXZ,IPD,IZP,LNR,MB,MBZ,MDT,MFX,MFZ,MGK,MLN,MLT,MOM,MP,MTC,MTL,MTM,NAA,Naled,NFZ,NPP,NTP,OXF,OXT,OYZ,PDM,PEB,PHMD,PMR,PMT,PNB,PPB,PPG,PPMH,PQT,PRB,PRT,PSM,PYN,SMM,SMT,SS,SXD,SZ,TBC,TDC,TDZ,TET,TFN,TFR,TMT,TPR,TRB,WFN,ZnP
Endpoint: MOR,POP,PHY,GRO,REP; Habitat: AT

49. Office of Pesticide Programs (2000). **Pesticide Ecotoxicity Database (Formerly: Environmental Effects Database (EEDB)).** *Environmental Fate and Effects Division, U.S.EPA, Washington, D.C.*

EcoReference No.: 344
User Define 2: REPS,WASH,CALF,CORE,SENT
Chemical of Concern:
24DXY,ACL,ACP,ACR,ATZ,AZ,BDF,BMC,BML,BMN,BS,BT,Captan,CBF,CBL,CFE,CFE,CLNB,CMPH,CPC,CPY,CTN,CTZ,CYD,CYF,CYP,CYT,DBN,DCNA,DFT,DFZ,DM,DMB,DMM,DMP,DMT,DPC,DPDP,DS,DU,DZ,DZM,EFL,EFS,EFV,EP,FHX,FMP,FO,Folpet,FPP,FVL,GYP,HCCH,HXZ,IPD,IZP,LNR,MB,MBZ,MDT,MFX,MFZ,MGK,MLN,MLT,MOM,MP,MTC,MTL,MTM,NAA,Naled,NFZ,NPP,NTP,OXF,OXT,OYZ,PDM,PEB,PHMD,PMR,PMT,PNB,PPB,PPG,PPMH,PQT,PRB,PRT,PSM,PYN,SMM,SMT,SS,SXD,SZ,TBC,TDC,TDZ,TET,TFN,TFR,TMT,TPR,TRB,WFN,ZnP
Endpoint: MOR,POP,PHY,GRO,REP; Habitat: AT

50. Office of Pesticide Programs (2000). **Pesticide Ecotoxicity Database (Formerly: Environmental Effects Database (EEDB)).** *Environmental Fate and Effects Division, U.S.EPA, Washington, D.C.*

EcoReference No.: 344
User Define 2: REPS,WASH,CALF,CORE,SENT
Chemical of Concern:
24DXY,ACL,ACP,ACR,ATZ,AZ,BDF,BMC,BML,BMN,BS,BT,Captan,CBF,CBL,CFE,CFE,CLNB,CMPH,CPC,CPY,CTN,CTZ,CYD,CYF,CYP,CYT,DBN,DCNA,DFT,DFZ,DM,DMB,DMM,DMP,DMT,DPC,DPDP,DS,DU,DZ,DZM,EFL,EFS,EFV,EP,FHX,FMP,FO,Folpet,FPP,FVL,GYP,HCCH,HXZ,IPD,IZP,LNR,MB,MBZ,MDT,MFX,MFZ,MGK,MLN,MLT,MOM,MP,MTC,MTL,MTM,NAA,Naled,NFZ,NPP,NTP,OXF,OXT,OYZ,PDM,PEB,PHMD,PMR,PMT,PNB,PPB,PPG,PPMH,PQT,PRB,PRT,PSM,PYN,SMM,SMT,SS,SXD,SZ,TBC,TDC,TDZ,TET,TFN,TFR,TMT,TPR,TRB,WFN,ZnP
Endpoint: MOR,POP,PHY,GRO,REP; Habitat: AT

51. Office of Pesticide Programs (2000). **Pesticide Ecotoxicity Database (Formerly: Environmental Effects**

Database (EEDB)). *Environmental Fate and Effects Division, U.S.EPA, Washington, D.C.*

EcoReference No.: 344
LITE Eval Status: NO EFED (344)
ECOTOX Status: AT
Citation Source: ECOTOX CST
24DXY,ACL,ACP,ACR,ATZ,AZ,BMC,BMN,BS,BT,Captan,CBF,CBL,CFE,CFE,CMPH,CPY,CTN,CTZ,CYD,CYF,CYP,CYT,DBN,DCNA,DFZ,DM,DMB,DMM,DMP,DMT,DPDP,DS,DU,DZ,DZM,EFL,EFS,EFV,EP,FHX,FMP,FO,Folpet,FPP,FVL,GYP,HCCH,HXZ,IPD,IZP,LNR,MB,MBZ,MDT,MFX,MFZ,MGK,MLN,MLT,MOM,MP,MTC,MTL,MTM,NAA,Naled,NFZ,NPP,NTP,OXF,OXT,OYZ,PDM,PEB,PMR,PMT,PNB,PPB,PPG,PPMH,PQT,PRB,PRT,PSM,PYN,SMM,SMT,SS,SZ,TBC,TDC,TDZ,TET,TFN,TFR,TMT,TPR,TRB; Effect Codes: AT.

52. Office of Pesticide Programs (2000). **Pesticide Ecotoxicity Database (Formerly: Environmental Effects Database (EEDB)).** *Environmental Fate and Effects Division, U.S.EPA, Washington, D.C.*

EcoReference No.: 344
User Define 2: REPS,WASH,CALF,CORE,SENT
Chemical of Concern:
24DXY,ACL,ACP,ACR,ATZ,AZ,BDF,BMC,BML,BMN,BS,BT,Captan,CBF,CBL,CFE,CFE,CLNB,CMPH,CPC,CPY,CTN,CTZ,CYD,CYF,CYP,CYT,DBN,DCNA,DFT,DFZ,DM,DMB,DMM,DMP,DMT,DPC,DPDP,DS,DU,DZ,DZM,EFL,EFS,EFV,EP,FHX,FMP,FO,Folpet,FPP,FVL,GYP,HCCH,HXZ,IPD,IZP,LNR,MB,MBZ,MDT,MFX,MFZ,MGK,MLN,MLT,MOM,MP,MTC,MTL,MTM,NAA,Naled,NFZ,NPP,NTP,OXF,OXT,OYZ,PDM,PEB,PHMD,PMR,PMT,PNB,PPB,PPG,PPMH,PQT,PRB,PRT,PSM,PYN,SMM,SMT,SS,SXD,SZ,TBC,TDC,TDZ,TET,TFN,TFR,TMT,TPR,TRB,WFN,ZnP; Habitat: AT; Effect Codes: MOR,POP,PHY,GRO,REP.

53. Pree, D. J., Whitty, K. J., Van Driel, L., and Walker, G. M. (98). **Resistance to Insecticides in Oriental Fruit Moth Populations (Grapholita molesta) from the Niagara Peninsula of Ontario.** *Can.Entomol.* 130: 245-256.

EcoReference No.: 63915
Chemical of Concern: MOM,PFF,CBF,AZ,PSM,EPRN,MLN,Naled,FNT,CPY,ACP,MTM,MDT,CBL,CYP
Endpoint: POP,MOR,GRO; Habitat: T

54. Pree, D. J., Whitty, K. J., Van Driel, L., and Walker, G. M. (98). **Resistance to Insecticides in Oriental Fruit Moth Populations (Grapholita molesta) from the Niagara Peninsula of Ontario.** *Can.Entomol.* 130: 245-256.

EcoReference No.: 63915
Chemical of Concern:
MOM,PFF,CBF,AZ,PSM,EPRN,MLN,Naled,FNT,CPY,ACP,MTM,MDT,CBL,CYP; Habitat: T; Effect Codes : POP,MOR,GRO.

55. Saafan, S. E. and Mostafa, I. Y. (95). **Effect of Combined Treatment of Methomyl and Lindane on the Activities of Auxins and Gibberellins in Zea mays Plants.** *Egypt.J.Physiol.Sci.* 19: 229-239.

EcoReference No.: 74363
Chemical of Concern: MOM,HCCH; Habitat: T; Effect Codes: BCM.

56. Sances, F. V., Gaston, L. K., Campos, R., Dusch, M., and Toscano, N. C. (93). **Multiple Insecticide Treatments Affect Harvest Residues of Lettuce.** *J.Econ.Entomol.* 86: 1781-1785.

EcoReference No.: 74135
User Define 2: WASH
Chemical of Concern: MOM,MVP,PMR; Habitat: T; Effect Codes: ACC.

57. Sanders, H. O., Finley, M. T., and Hunn, J. B. (83). **Acute Toxicity of Six Forest Insecticides to Three Aquatic Invertebrates and Four Fishes.** *U.S.Fish Wildl.Serv., Tech.Pap.No.110, Washington, D.C.* 1-5 (Author Communication Used) (Publ in Part As 6797).

EcoReference No.: 15574
User Define 2: ECOTOX MED,WASH,CALF
Chemical of Concern: MOM,CBL,TCF,FNT,ACP; Habitat: A; Effect Codes: MOR.

58. Sasikumar, N., Clare, A. S., Gerhart, D. J., Stover, D., and Rittschof, D. (95). **Comparative Toxicities of Selected Compounds to Nauplii of Balanus amphitrite amphitrite Darwin and Artemia sp.** *Bull.Environ.Contam.Toxicol.* 54: 289-296.

EcoReference No.: 53890
User Define 2: WASH,SENT
User Define 3: 05/05/03
Chemical of Concern: Cu,TBT,MOM; Habitat: A; Effect Codes: MOR.

59. Schafer, E. W. and Bowles, W. A. (85). **Acute Oral Toxicity and Repellency of 933 Chemicals to House and Deer Mice.** *Arch.Environ.Contam.Toxicol.* 14: 111-129.

EcoReference No.: 35426
User Define 2: REPS,CORE,SENT
User Define 3: 08/12/04
Chemical of Concern: ADC,CST,MOM,CPC,ZnP
Endpoint: MOR; Habitat: T

60. Schafer, E. W. and Bowles, W. A. (85). **Acute Oral Toxicity and Repellency of 933 Chemicals to House and Deer Mice.** *Arch.Environ.Contam.Toxicol.* 14: 111-129.

EcoReference No.: 35426
User Define 2: REPS,CORE,SENT
User Define 3: 08/12/04
Chemical of Concern: ADC,CST,MOM,CPC,ZnP; Habitat: T; Effect Codes: MOR.

61. Schafer, E. W. and Bowles, W. A. (85). **Acute Oral Toxicity and Repellency of 933 Chemicals to House and Deer Mice.** *Arch.Environ.Contam.Toxicol.* 14: 111-129.

EcoReference No.: 35426
User Define 2: REPS,CORE,SENT
User Define 3: 08/12/04
Chemical of Concern: ADC,CST,MOM,CPC,ZnP; Habitat: T; Effect Codes: MOR.

62. Shaaban, A. M., El-Zemaity, M. S., Sobeiha, A. M. K., and Amin, A. M. (86). **Chemical Degradation and Bioeffectiveness of Methomyl and Pyridaphenthion on and in Lettuce and Bean Leaves.** *Ann.Agric.Sci.(Cairo)* 31: 1479-1493.

EcoReference No.: 74362
Chemical of Concern: MOM; Habitat: T; Effect Codes: ACC,MOR.

63. Shlosberg, A., Bellaiche, M., Hanji, V., and Ershov, E. (96). **Treatment of Anticholinesterase Toxicosis in Birds.** *Israel J.Vet.Med.* 51: 129.

EcoReference No.: 74345
Chemical of Concern: MOM,DZ; Habitat: T; Effect Codes: MOR.

64. Strickman, D. (85). **Aquatic Bioassay of 11 Pesticides Using Larvae of the Mosquito, Wyeomyia smithii**

(Diptera: Culicidae). *Bull.Environ.Contam.Toxicol.* 35: 133-142.

EcoReference No.: 11480
User Define 2: REPS,WASH,CALF,CORE,SENT
Chemical of Concern: DDT,HPT,CPY,MLN,TMP,CBL,MOM,PPX,PMR,RSM; Habitat: A; Effect Codes: MOR,GRO.

65. Thompson, A. R. and Gore, F. L. (72). **Toxicity of Twenty-Nine Insecticides to Folsomia candida: Laboratory Studies.** *J.Econ.Entomol.* 65: 1255-1260.

EcoReference No.: 40474
User Define 3: 06/01/2004
Chemical of Concern: DIELDRIN, DDT,CBF,ADC,MOM; Habitat: T; Effect Codes: MOR.

66. Thompson, A. R. and Gore, F. L. (72). **Toxicity of Twenty-Nine Insecticides to Folsomia candida: Laboratory Studies.** *J.Econ.Entomol.* 65: 1255-1260.

EcoReference No.: 40474
User Define 3: 06/01/2004
Chemical of Concern: DIELDRIN, DDT,CBF,ADC,MOM; Habitat: T; Effect Codes: MOR.

67. Wheeler, B. A. and Bass, M. H. (71). **Effects of Certain Systemic Insecticides on Growth and Yield of Soybeans.** *J.Econ.Entomol.* 64: 1219-1221.

EcoReference No.: 41080
User Define 2: MED,WASH,CORE
Chemical of Concern: CBF,DS,MOM,PRT; Habitat: T; Effect Codes: POP,GRO.

68. Wolfenbarger, D. A., Riley, D. G., and Cartwright, B. (97). **Can Response Levels to any Insecticide be Maintained be a Population of Beet Armyworm?** *In: Proc.Beltwide Cotton Conf.* 2: 1024-1028.

EcoReference No.: 71583
User Define 2: WASHT,CALFT
Chemical of Concern: CPY,MOM; Habitat: T; Effect Codes: MOR.

69. Yawetz, A., Manelis, R., and Gasith, A. (93). **Cholinesterase Enzymatic Profiles and the Exposure of Fish to Organophosphorus and Carbamate Pesticides in Israel.** *Water Sci.Technol.* 27: 465-472.

EcoReference No.: 13643
User Define 2: ECOTOX MED,WASH,CALF
Chemical of Concern: CBL,MLN,MOM,PRN; Habitat: A; Effect Codes: MOR,BCM.

70. Yokoyama, T., Saka, H., Fujita, S., and Nishiuchi, Y. (88). **Sensitivity of Japanese Eel, Anguilla japonica, to 68 Kinds of Agricultural Chemicals.** *Bull.Agric.Chem.Insp.Stn.* 28: 26-33 (JPN) (ENG ABS).

EcoReference No.: 8570
User Define 2: ECOTOX MED,WASH,CALF,CORE
Chemical of Concern:
ACP,Captan,CBL,CTN,DMT,DS,DZ,FO,HXZ,IZP,MDT,MLN,MOM,PPG,PSM,TET,CYP,FVL,PMR,TFR;
Habitat: A; Effect Codes: MOR.

1. 86). **Methomyl.** *Pesticide residues in food -- 1986. Evaluations 1986. Part 1. Residues., 1986, pp. 237-238, fao plant production and protection paper [fao plant prod. Prot. Pap.], Vol. 78.*

   Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
   Conference: Joint Meeting of the FAO Panel of Experts on Pesticide Residues in Food and the Environment and the WHO Expert Group on Pesticide Residues, Rome (Italy), 29 Sep-8 Oct 1986
   Abstract: Residue and analytical aspects of methomyl were evaluated by the Joint Meeting in 1975, 1976, 1977, and 1978. Among the items of further information considered desirable were modifications or refinements of available methods of analysis to make them suitable for regulatory purposes and further data on the disappearance of residues during storage. No further information on the fate of residues during storage came to the attention of the meeting. Preliminary studies examined at the 1875 meeting indicated that 70-90% of the methomyl residues on tomatoes, peas and cabbage were removed by cooking and 50-90% of the residues on celery were removed by trimming.

2. Adams, V. D., Watts, R. J., and Pitts, M. E. (85). **ORGANICS.** *J Water Pollut Control Fed* 57 : 463-493.

   Chem Codes: Chemical of Concern: SZ,MOM,ADC,CBF; Rejection Code: FATE.
   ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM WASTEWATER SOIL POLLUTION WATER POLLUTION
   KEYWORDS: Biochemical Methods-General
   KEYWORDS: Biochemical Studies-General
   KEYWORDS: Toxicology-Environmental and Industrial Toxicology
   KEYWORDS: Public Health: Environmental Health-Sewage Disposal and Sanitary Measures
   KEYWORDS: Public Health: Environmental Health-Air
   KEYWORDS: Soil Science-Physics and Chemistry (1970-)

3. Adams, V. D., Watts, R. J., and Pitts, M. E. (85). **ORGANICS.** *J Water Pollut Control Fed* 57 : 463-493.

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   KEYWORDS: Public Health: Environmental Health-Sewage Disposal and Sanitary Measures
   KEYWORDS: Public Health: Environmental Health-Air
   KEYWORDS: Soil Science-Physics and Chemistry (1970-)

4. Ahmed, Y. M. (91). **Kinetic Study on Inhibition of Earthworm Acetylcholinesterase by Carbamate Insecticides.** *J.Egypt Soc.Parasitol.* 21: 283-292.

   Chem Codes: User Define 2: WASHT
   Chemical of Concern: MOM,ADC,CBF; Rejection Code: IN VITRO.

5. Ahmed, Y. M. (91). **Kinetic Study on Inhibition of Earthworm Acetylcholinesterase by Carbamate Insecticides.** *J.Egypt Soc.Parasitol.* 21: 283-292.

   Chem Codes: User Define 2: WASHT
   Chemical of Concern: MOM,ADC,CBF; Rejection Code: IN VITRO.

6. Akey, W. C., Russell, T., Alford, C., Morrison, T., and Denning, M. (97). **Will the toad croak? An endangered species decision case.** *Journal of Natural Resources and Life Sciences Education* 26 : 148-156.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: NO TOX DATA.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. In 1992, the USEPA proposed a ban on the use of 43 pesticides in a large portion of Albany County, Wyoming. The ban was intended to protect the habitat of an endangered species, the Wyoming toad (Bufo hemiophyrs baxteri), as required by the Endangered Species Act of 1973. For many years, portions of Albany County that included Wyoming toad habitat had been routinely sprayed with insecticides to control mosquitoes. Residents were concerned that without adequate mosquito control, recreation, tourism, agriculture, public health, and property values could be impacted. A task force comprised of local residents of diverse backgrounds and viewpoints was appointed in 1992 by the governor of Wyoming and Albany County commissioners to consider how best to (i) protect the Wyoming toad and aid its recovery, and (ii) maintain effective mosquito control. The goal of the group was to submit an alternative proposal to the U.S. Fish and Wildlife Service and to the USEPA that would meet
KEYWORDS: General Biology-Conservation
KEYWORDS: Ecology
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Chordata
KEYWORDS: Salientia

7. Akey, W. C., Russell, T., Alford, C., Morrison, T., and Denning, M. (97). **Will the toad croak? An endangered species decision case.** *Journal of Natural Resources and Life Sciences Education* 26 : 148-156.

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KEYWORDS: Salientia

8. Akhtar, M. H., Khan, S. U., and Kacew, S. (92). **Bioavailability of Bound Pesticide Residues and Potential Toxicologic Consequences.** *Proc.Soc.Exp.Biol.Med.* 199: 13-21.

Chem Codes: EcoReference No.: 74453
Chemical of Concern: MOM,CBF,ATZ,DLD; Rejection Code: REVIEW.

9. Al-Ibrahim, B. A., Sherif, S. A., and Sofian, B. Ee (98). **Eliciting the least-risky pesticide production plans for greenhouse-tomato varieties: A risk programming application to Saudi growers.** *Dirasat Agricultural Sciences* 25 : 22-37.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO TOX DATA.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. More than 40% of the standing tomato-greenhouse projects located in the Saudi central region are being shut down. High productivity of the tomato greenhouse stands alone versus high investment, production, and maintenance costs. pesticide is known to be used excessively despite its high unit price, causing high variations in the gross margin of the monetary unit spent on this input. Moreover, farmers seem to stick to some tomato varieties for unknown economic reasons. Four production plans based on the use of pesticides and fertilizers are identified. This paper presents three

different scenarios regarding the maximization of the gross margin for the Saudi Riyals spent on pesticides per unit of land for tomato-greenhouse projects, taking into consideration tomato varieties grown and pesticide plan implemented. Both linear and MOTAD programming are implemented and the results are contrasted with those of the current status. The results showed that two tomato varieties: R
KEYWORDS: General Biology-Information
KEYWORDS: Mathematical Biology and Statistical Methods
KEYWORDS: Horticulture-Vegetables
KEYWORDS: Pest Control
KEYWORDS: Solanaceae

10. Albert, A. (**XENOBIOSIS FOODS DRUGS AND POISONS IN THE HUMAN BODY.** *Albert, A. Xenobiosis: Foods, Drugs and Poisons in the Human Chapman and Hall: New York, New York, Usa; London, England, Uk. Isbn 0-412-28810-9(Paper); Isbn 0-412-28800-1(Cloth).; 0 (0). 1987. X+367p.*

Chem Codes: Chemical of Concern: PNB,MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK PHARMACOKINETICS DRUG DEPENDENCE ENVIRONMENTAL POLLUTION FOOD TOXICANTS FOOD CARCINOGENS DRUG SIDE EFFECTS MALNUTRITION
KEYWORDS: General Biology-Textbooks
KEYWORDS: Social Biology
KEYWORDS: Behavioral Biology-Human Behavior
KEYWORDS: Biochemical Studies-General
KEYWORDS: Pathology
KEYWORDS: Pathology
KEYWORDS: Metabolism-General Metabolism
KEYWORDS: Nutrition-Malnutrition
KEYWORDS: Food Technology-General
KEYWORDS: Psychiatry-Addiction-Alcohol
KEYWORDS: Pharmacology-General
KEYWORDS: Pharmacology-Drug Metabolism
KEYWORDS: Pharmacology-Clinical Pharmacology (1972-)
KEYWORDS: Toxicology-General
KEYWORDS: Toxicology-Foods
KEYWORDS: Toxicology-Pharmacological Toxicology (1972-)
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis
KEYWORDS: Immunology and Immunochemistry-Immunopathology
KEYWORDS: Allergy
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Hominidae

11. Alho, C. Jr and Vieira, L. M. (97). **Fish and wildlife resources in the pantanal wetlands of Brazil and potential disturbances from the release of environmental contaminants.** *Environmental Toxicology and Chemistry* 16 : 71-74.

Chem Codes: Chemical of Concern: PNB,MOM,ADC,CBF; Rejection Code: SURVEY.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. The Pantanal is one of the world's largest wetland ecosystems, encompassing 140,000 km2. The region is a breeding ground for waterfowl, and enormous rookeries of storks, herons, egrets, and ibises indicate a vast abundance of birds. The Pantanal is also one of the most important refuges for many of Brazil's threatened or endangered species, such as jaguars, giant anteaters, and swamp deer. The productive web of waters supports an important fishery industry. The Pantanal, with its extraordinary diversity and abundance of wildlife, is a threatened region. Deforestation, expanding agriculture, illegal hunting and fishing, unplanned tourism, and pollution with pesticides have caused a progressive deterioration of the natural environment, placing one of Brazil's most important ecosystems at risk. Gold mining is still common in the northern Pantanal. Along the Cuiaba river are 700 functional gold-mining dredges. In the town of Pocone, unregulated gold mines have also contamin

KEYWORDS: Ecology
KEYWORDS: Ecology
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Ciconiiformes
KEYWORDS: Falconiformes
KEYWORDS: Gruiformes
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KEYWORDS: Cervidae
KEYWORDS: Felidae
KEYWORDS: Myrmecophagidae

12. Alho, C. Jr and Vieira, L. M. (97). **Fish and wildlife resources in the pantanal wetlands of Brazil and potential disturbances from the release of environmental contaminants.** *Environmental Toxicology and Chemistry* 16 : 71-74.

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    KEYWORDS: Felidae
    KEYWORDS: Myrmecophagidae

13. Ali, M. S. (89). **Determination of N-Methylcarbamate Pesticides in Liver by Liquid Chromatography.** *J.Assoc.Off.Anal.Chem.* 72: 586-592.

    Chem Codes: Chemical of Concern: MOM,ADC,CBF,CBL,MCB; Rejection Code: IN VITRO.

14. Ali, M. S. (89). **Determination of N-Methylcarbamate Pesticides in Liver by Liquid Chromatography.** *J.Assoc.Off.Anal.Chem.* 72: 586-592.

    Chem Codes: Chemical of Concern: MOM,ADC,CBF,CBL,MCB; Rejection Code: IN VITRO.

15. Ali, M. S., White, J. D., Bakowski, R. S., Philippo, E. T. , and Ellis, R. L. (93). **Analyte stability study of N-methylcarbamate pesticides in beef and poultry liver tissues by liquid chromatography.** *Journal of Aoac International* 76 : 1309-1316.

    Chem Codes: Chemical of Concern: MOM,ADC; Rejection Code: METHODS.
    ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. TO Optimize conditions for sample collection, preparation, storage, and analysis and to assure the validity of our previously published liquid chromatographic

(LC) method for carbamate analysis in tissue, stabilities of 16 N-methylcarbamates in beef, duck, and chicken liver tissues were studied by using 2 sampling protocols. Tissue samples were fortified at room temperature to a concentration 5 to 10 times greater than either the Environmental Protection Agency tolerance level for each compound (if established) or the concentration used in the previously published method. Thereafter, samples were continuously frozen at -4ęC for varying time intervals. In the first study, samples were analyzed one day (initial) and 0.5, 1, 1.5, 2, 3, 4, 5, and 6 months after fortification. In the second study, samples were analyzed one day (initial) and 0.5, 1, 2, 3, and 6 months after fortification. For each residue and species, a minimum of 4 samples were analyzed by LC at each point i
KEYWORDS: General Biology-Institutions
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-Molecular Properties and Macromolecules
KEYWORDS: Food Technology-General
KEYWORDS: Food Technology-Meats and Meat by-Products
KEYWORDS: Food Technology-Poultry and Eggs
KEYWORDS: Food Technology-Evaluations of Physical and Chemical Properties (1970-)
KEYWORDS: Toxicology-Foods
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control

16. Ali, M. S., White, J. D., Bakowski, R. S., Philippo, E. T. , and Ellis, R. L. (93). **Analyte stability study of N-methylcarbamate pesticides in beef and poultry liver tissues by liquid chromatography.** *Journal of Aoac International* 76 : 1309-1316.

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KEYWORDS: Food Technology-Evaluations of Physical and Chemical Properties (1970-)
KEYWORDS: Toxicology-Foods
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control

17. All, J. N., Stancil, J. D., Johnson, T. B., and Gouger, R. (96). **Controlling fall armyworm (Lepidoptera:Noctuidae) infestations in whorl stage corn with genetically modified Bacillus thuringiensis formulations.** *Florida Entomologist* 79 : 311-317.

Chem Codes: Chemical of Concern: MOM; Rejection Code: BIOLOGICAL TOXICANT.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Development of more potent strains of Bacillus thuringiensis (Berliner) (Bt) using recombinant DNA technology may lead to improved insecticidal products for controlling pests like the fall armyworm, Spodoptera frugiperda (J. E. Smith), which have been difficult to manage with conventional Bt-based products. EG1999, a variant Bt strain developed by recombinant DNA

technology from EG2348 (the active ingredient of the bioinsecticide Condor), showed improved control of FAW infestations in whorl stage field corn in 1994 (oil flowable and granular formulations) and sweetcorn in 1995 (wettable granule (ECX9526) (WG)) and granular (ECX9526 (G) formulations) as compared with Javelin (WG), an insecticide derived from a naturally occurring Bt strain, and methomyl (Lannate LV). In 1994, leaf samples taken 1 h, 1, 2, 3, 5, and 7 d after spraying and assayed in the laboratory with fall armyworm showed that the Bt products (recombinant and natural) had less than 48 h residual toxicity MH - POISONING
KEYWORDS: Toxicology-General
KEYWORDS: Agronomy-Grain Crops
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Field
KEYWORDS: Economic Entomology-Biological Control
KEYWORDS: Invertebrata
KEYWORDS: Endospore-Forming Gram-Positives (1992-)
KEYWORDS: Gramineae
KEYWORDS: Lepidoptera

18. All, J. N(A) , Stancil, J. D(A), Johnson, T. B., and Gouger, R. (96). **Controlling fall armyworm (Lepidoptera:Noctuidae) infestations in whorl stage corn with genetically modified Bacillus thuringiensis formulations.** 311-317; Rejection Code: BIOLOGICAL TOXICANT/<Major Concept> Agronomy (Agriculture)/Economic Entomology/Pathology/Pest Assessment Control And Management/Toxicology/<Biosystematic> Endospore-Forming Gram-Positives--Eubacteria, Bacteria/Gramineae--Monocotyledones, Angiospermae, Spermatophyta, Plantae/Lepidoptera--Insecta, Arthropoda, Invertebrata, Animalia/<Organisms> Endospore-Forming Gram-Positive Rods And Cocci (Endospore-Forming Gram-Positives)/Fall Armyworm (Lepidoptera)/Bacillus Thuringiensis (Endospore-Forming Gram-Positives)/Gramineae (Gramineae)/<Super Taxa> Angiosperms/Animals/Arthropods/Bacteria/Eubacteria/Insects/Invertebrates/Microorganisms/Monocots/Plants/Spermatophytes/Vascular Plants/<Chemicals> Lannate/<Misc.> Biological Control Agent/Genetic Modifications/Insecticide/Javelin/Lannate Lv/Pesticides/Whorl Stage Corn.
Development of more potent strains of Bacillus thuringiensis (Berliner) (Bt) using recombinant DNA technology may lead to improved insecticidal products for controlling pests like the fall armyworm, Spodoptera frugiperda (J. E. Smith), which have been difficult to manage with conventional Bt-based products. EG1999, a variant Bt strain developed by recombinant DNA technology from EG2348 (the active ingredient of the bioinsecticide Condor), showed improved control of FAW infestations in whorl stage field corn in 1994 (oil flowable and granular formulations) and sweetcorn in 1995 (wettable granule (ECX9526) (WG)) and granular (ECX9526 (G) formulations) as compared with Javelin (WG), an insecticide derived from a naturally occurring Bt strain, and methomyl (Lannate LV). In 1994, leaf samples taken 1 h, 1, 2, 3, 5, and 7 d after spraying and assayed in the laboratory with fall armyworm showed that the Bt products (recombinant and natural) had less than 48 h residual toxicity to 1st instar larvae. In 1994 freshly hatched FAW were placed on plants in A-frame cages to evaluate this as a method to establish artificial field infestations for use when natural FAW populations are low. The plant damage and insecticide control in the cages were similar to the heavy natural infestations outside the cages.

19. Allen, S. E. , Parkinson, J. A., and Rowland, A. P. (89). **POLLUTANTS.** *Allen, S. E. (Ed.). Chemical Analysis of Ecological Materials, Second Edition. Xii+368p. Blackwell Scientific Publications Inc.: Cambridge, Massachusetts, Usa* Oxford, England, Uk. Illus. Isbn 0-632-01742-2.; 0 : 201-239.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: CHEM METHOD.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM PLANT METABOLIC BY-PRODUCT SOIL SUBSTANCES EUTROPHICATION HEAVY METALS COLLECTION STORAGE
KEYWORDS: Methods
KEYWORDS: Methods
KEYWORDS: Ecology
KEYWORDS: Ecology
KEYWORDS: Ecology
KEYWORDS: Biochemical Studies-Minerals
KEYWORDS: Biophysics-General Biophysical Techniques

KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Plant Physiology
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Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: CHEM METHOD.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM PLANT METABOLIC BY-PRODUCT SOIL SUBSTANCES EUTROPHICATION HEAVY METALS COLLECTION STORAGE
KEYWORDS: Methods
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KEYWORDS: Ecology
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KEYWORDS: Biochemical Studies-Minerals
KEYWORDS: Biophysics-General Biophysical Techniques
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KEYWORDS: Plant Physiology
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KEYWORDS: Soil Science-Physics and Chemistry (1970-)
KEYWORDS: Plantae-Unspecified
KEYWORDS: Animalia-Unspecified

21. Ames, R. G., Brown, S. K., Mengle, D. C., Kahn, E., Stratton, J. W., and Jackson, R. J. (89). **Cholinesterase activity depression among California agricultural pesticide applicators.** *American journal of industrial medicine [am. J. Ind. Med.]* 15: 143-150.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
Abstract: Cholinesterase activity measurements for 542 California agricultural pesticide applicators under medical supervision during the first 9 months of 1985 were analyzed. Twenty-six workers, 4.8% of the sample, had cholinesterase values at or below the California threshold values for removal from continued exposure to cholinesterase-inhibiting pesticides (60% of baseline for red blood cell cholinesterase and 50% of baseline for plasma cholinesterase activity). Eight of these 26 workers, 31.5%, had pesticide-related illnesses. Pesticides most frequently associated with cholinesterase depressions exceeding California threshold values included mevinphos (Phosdrin), oxydemeton methyl (Metasystox-R), methomyl (Lannate), and acephate (Orthene); these pesticides included organophosphates in toxicity categories I and II and one carbamate in toxicity category I.

22. Ammon, H. L., Seymour, R. J., Huffman, W. M., and D'silva, T. D. (1995Aug15). **Thiodicarb.** *Acta Crystallogr C 1995 Aug 15;51 (Pt 8):1619-21.* 51 (Pt 8): 1619-21.

Chem Codes: Chemical of Concern: MOM; Rejection Code: METHODS.
ABSTRACT: Dimethyl N,N'-[thiobis(methyliminocarbonyloxy)] bis-(ethanimidothiolate), C10H18N4O4S3, is an example of a sulfenylated biscarbamate insecticide. The molecule has an approximate twofold axis through the central S atom which joins the two methyliminocarbonyloxyethanimidothiolate units. One of the two arms is planar in the crystal. Semi-empirical geometry optimization for an isolated molecule favors a model with both arms planar and, thus, crystal packing may be responsible for the observed non-planarity in one arm. Bond lengths and angles have similar values to those of the 'monomeric' carbamate insecticide methomyl.

23. Andersen, H. R., Vinggaard, A., Hoj rasmussen, T., Gjermandsen, I. M., and Cecilie bonefeld-Jorgensen, E. (2002). **Effects of Currently Used Pesticides in Assays for Estrogenicity, Androgenicity, and Aromatase Activity in Vitro.** *Toxicology and applied pharmacology [toxicol. Appl. Pharmacol.].* 179: 1-12.

Chem Codes: Chemical of Concern: MOM; Rejection Code: IN VITRO.
Academic Press Abstract: Twenty-four pesticides were tested for interactions with the estrogen receptor (ER) and the androgen receptor (AR) in transactivation assays. Estrogen-like effects on MCF-7 cell proliferation and effects on CYP19 aromatase activity in human placental microsomes were also investigated. Pesticides (endosulfan, methiocarb, methomyl, pirimicarb, propamocarb, deltamethrin, fenpropathrin, dimethoate, chlorpyriphos, dichlorvos, tolchlofos-methyl, vinclozolin, iprodion, fenarimol, prochloraz, fosetyl-aluminum, chlorothalonil, daminozid, paclobutrazol, chlormequat chlorid, and ethephon) were selected according to their frequent use in Danish greenhouses. In addition, the metabolite mercaptodimethur sulfoxide, the herbicide tribenuron-methyl, and the organochlorine dieldrin, were included. Several of the pesticides, dieldrin, endosulfan, methiocarb, and fenarimol, acted both as estrogen agonists and androgen antagonists. Prochloraz reacted as both an estrogen and an androgen antagonist. Furthermore, fenarimol and prochloraz were potent aromatase inhibitors while endosulfan was a weak inhibitor. Hence, these three pesticides possess at least three different ways to potentially disturb sex hormone actions. In addition, chlorpyrifos, deltamethrin, tolclofos-methyl, and tribenuron-methyl induced weak responses in one or both estrogenicity assays. Upon cotreatment with 17 beta -estradiol, the response was potentiated by endosulfan in the proliferation assay and by pirimicarb, propamocarb, and daminozid in the ER transactivation assay. Vinclozolin reacted as a potent AR antagonist and dichlorvos as a very weak one. Methomyl, pirimicarb, propamocarb, and iprodion weakly stimulated aromatase activity. Although the potencies of the pesticides to react as hormone agonists or antagonists are low compared to the natural ligands, the integrated response in the organism might be amplified by the ability of the pesticides to act via several mechanism and the frequent simultaneous exposure to several pesticides. [copy]2002 Elsevier Science (USA).

24. Anderson, J. F. and Wojtas, M. A. (86). **Honey bees (Hymenoptera: Apidae) contaminated with pesticides and polychlorinated biphenyls.** *Journal of economic entomology [j. Econ. Entomol.]* 79: 1200-1205.

Chem Codes: Chemical of Concern: MOM; Rejection Code: SURVEY.
Abstract: Multiple pesticides were simultaneously present in dead honey bees, Apis mellifera L., or in brood comb in 28 of 55 poisoned apiaries in Connecticut in 1983-85. Methyl parathion (Penncap-M), carbaryl, and endosulfan were each detected in 34, 33, and 13 of the apiaries, respectively. Less frequently detected pesticides were methomyl, chlordane, diazinon, captan, and malathion. Health of colonies poisoned with methyl parathion only or methyl parathion in combination with other insecticides was often severely affected, whereas colonies affected by carbaryl only or carbaryl plus insecticides other than methyl parathion often recovered. Arocolor 1248 and 1260 (polychlorinated biphenyls) were detected in dead bees, brood comb, honey comb, or honey. Detectable quantities of polychlorinated biphenyls less than or equal to 0.80 ppm were in 4 of 71 honey samples.

25. Anderson, J. Pe (95). **FATE OF PESTICIDES IN SUBSURFACE SOILS AND GROUNDWATER.** *Ragsdale, N. N., P. C. Kearney and J. R. Plimmer (Ed.). Acs Conference Proceedings Series: Eighth International Congress of Pesticide Chemistry Options 2000* Conference, Washington, D.c., Usa, July 4-9, 1994. Xiv+450p. American Chemical Society: Washington, Dc, Usa. Isbn 0-8412-2995-3.; 0 : 127-140.

Chem Codes: Chemical of Concern: MOM,CBF,ADC; Rejection Code: FATE.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER MEETING PAPER
MICROORGANISMS BIODEGRADATION SUBSOIL TOPSOIL
KEYWORDS: Ecology
KEYWORDS: Biochemical Studies-General
KEYWORDS: Metabolism-General Metabolism
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Food and Industrial Microbiology-Biodegradation and Biodeterioration
KEYWORDS: Soil Microbiology
KEYWORDS: Soil Science-Physics and Chemistry (1970-)

KEYWORDS: Pest Control
KEYWORDS: Microorganisms-Unspecified

26. Anderson, J. Pe (95). **FATE OF PESTICIDES IN SUBSURFACE SOILS AND GROUNDWATER.** *Ragsdale, N. N., P. C. Kearney and J. R. Plimmer (Ed.). Acs Conference Proceedings Series: Eighth International Congress of Pesticide Chemistry Options 2000* Conference, Washington, D.c., Usa, July 4-9, 1994. Xiv+450p. American Chemical Society: Washington, Dc, Usa. Isbn 0-8412-2995-3.; 0 : 127-140.

    Chem Codes: Chemical of Concern: MOM,CBF,ADC; Rejection Code: FATE.
    ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER MEETING PAPER MICROORGANISMS BIODEGRADATION SUBSOIL TOPSOIL
    KEYWORDS: Ecology
    KEYWORDS: Biochemical Studies-General
    KEYWORDS: Metabolism-General Metabolism
    KEYWORDS: Toxicology-Environmental and Industrial Toxicology
    KEYWORDS: Public Health: Environmental Health-Air
    KEYWORDS: Food and Industrial Microbiology-Biodegradation and Biodeterioration
    KEYWORDS: Soil Microbiology
    KEYWORDS: Soil Science-Physics and Chemistry (1970-)
    KEYWORDS: Pest Control
    KEYWORDS: Microorganisms-Unspecified

27. Anklam, E., Berg, H., Mathiasson, L., Sharman, M., and Ulberth, F. (98). **SUPERCRITICAL FLUID EXTRACTION SEF IN FOOD ANALYSIS A REVIEW.** *Food Additives and Contaminants* 15 : 729-750.

    Chem Codes: Chemical of Concern: PNB,MOM,CBF,ADC; Rejection Code: HUMAN HEALTH.
    ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM LITERATURE REVIEW SUPERCRITICAL EXTRACTION CARBON DIOXIDE SUPERCRITICAL FLUID LIPIDS STEROIDS FLAVOR COMPOUNDS SPICES AROMA COMPOUNDS FRUITS VEGETABLES MYCOTOXINS FOOD CONTAMINANT PESTICIDES ENVIRONMENTAL ANTIOXIDANTS FOODS METHODOLOGY FOOD ANALYSIS EXTRACTION SPICES FRUIT VEGETABLE GRAIN PRODUCT
    KEYWORDS: Biochemical Methods-General
    KEYWORDS: Biochemical Studies-General
    KEYWORDS: Food Technology-General
    KEYWORDS: Toxicology-General
    KEYWORDS: Pest Control

28. Anklam, E., Berg, H., Mathiasson, L., Sharman, M., and Ulberth, F. (98). **SUPERCRITICAL FLUID EXTRACTION SEF IN FOOD ANALYSIS A REVIEW.** *Food Additives and Contaminants* 15 : 729-750.

    Chem Codes: Chemical of Concern: PNB,MOM,CBF,ADC; Rejection Code: HUMAN HEALTH.
    ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM LITERATURE REVIEW SUPERCRITICAL EXTRACTION CARBON DIOXIDE SUPERCRITICAL FLUID LIPIDS STEROIDS FLAVOR COMPOUNDS SPICES AROMA COMPOUNDS FRUITS VEGETABLES MYCOTOXINS FOOD CONTAMINANT PESTICIDES ENVIRONMENTAL ANTIOXIDANTS FOODS METHODOLOGY FOOD ANALYSIS EXTRACTION SPICES FRUIT VEGETABLE GRAIN PRODUCT
    KEYWORDS: Biochemical Methods-General
    KEYWORDS: Biochemical Studies-General
    KEYWORDS: Food Technology-General
    KEYWORDS: Toxicology-General
    KEYWORDS: Pest Control

29. Anon (97). **Meeting of the Plant Protection Association of India on Plant Protection towards Sustainability (Hyderabad, India; December 22-24, 1997).** *Indian Journal of Plant Protection* 25 : 175-223.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: ABSTRACT.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. This meeting contains abstracts of 121 papers, including 100 posters, written in English, covering pesticide management and biological control in agricultural crops.
KEYWORDS: Economic Botany
KEYWORDS: Pest Control
KEYWORDS: Angiospermae

30. Anon (97). **Meeting of the Plant Protection Association of India on Plant Protection towards Sustainability (Hyderabad, India; December 22-24, 1997).** *Indian Journal of Plant Protection* 25 : 175-223.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: ABSTRACT.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. This meeting contains abstracts of 121 papers, including 100 posters, written in English, covering pesticide management and biological control in agricultural crops.
KEYWORDS: Economic Botany
KEYWORDS: Pest Control
KEYWORDS: Angiospermae

31. Antoniou, V. , Zantopoulos, N., and Tsoukali, H. (97). **Fatal animal poisonings in northern Greece: 1990-1995.** *Veterinary and Human Toxicology* 39 : 35-36.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: SURVEY.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Fatal animal poisonings in northern Greece from 1990 to 1995 are recorded. A total of 926 specimens have been analyzed by chromatographic techniques. Pesticides caused 78% of the poisoning cases and all other toxic substances caused 22%. The animals affected were mainly cats, dogs, sheep, birds and bees.
KEYWORDS: Toxicology-General
KEYWORDS: Veterinary Science-Pathology
KEYWORDS: Pest Control
KEYWORDS: Animalia-Unspecified
KEYWORDS: Hymenoptera
KEYWORDS: Aves-Unspecified
KEYWORDS: Bovidae
KEYWORDS: Canidae
KEYWORDS: Felidae

32. Antoniou, V. , Zantopoulos, N., and Tsoukali, H. (97). **Fatal animal poisonings in northern Greece: 1990-1995.** *Veterinary and Human Toxicology* 39 : 35-36.

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KEYWORDS: Veterinary Science-Pathology
KEYWORDS: Pest Control
KEYWORDS: Animalia-Unspecified
KEYWORDS: Hymenoptera
KEYWORDS: Aves-Unspecified
KEYWORDS: Bovidae
KEYWORDS: Canidae
KEYWORDS: Felidae

33. Arafah, A., Eltohamy, M., Ezzilarab, A., and Hussein, L. (88). **The vitamin B1 status among Egyptians occupationally exposed to pesticides.** *Int J Vitam Nutr Res 1988;58(3):351.* 58: 351.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.

34. Aranda, G. and Gauvrit, C. (86). **TOPOGRAPHICAL GEOMETRIC FACTORS GOVERNING THE BIOLOGICAL ACTIVITIES OF METHOMYL DERIVATIVES ON BINDING RECEPTORS OF MAIZE MITOCHONDRIA I. BIOLOGICAL ACTIVITIES.** *Bioorg Chem* 14 : 194-201.

Chem Codes: Chemical of Concern: MOM; Rejection Code: IN VITRO.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM INSECTICIDE MOLECULAR PROBE
KEYWORDS: Cytology and Cytochemistry-Plant
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-Molecular Properties and Macromolecules
KEYWORDS: Toxicology-General
KEYWORDS: In Vitro Studies
KEYWORDS: Phytopathology-Nonparasitic Diseases
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Gramineae

35. Aranda, G. and Poiret, B. (87). **TOPOGRAPHICAL GEOMETRIC FACTORS GOVERNING THE BIOLOGICAL ACTIVITIES OF METHOMYL DERIVATIVES ON MITOCHONDRIAL BINDING RECEPTORS II. SYNTHESIS.** *Bioorg Chem* 15 : 346-357.

Chem Codes: Chemical of Concern: MOM; Rejection Code: INVITRO.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM INSECTICIDE MOLECULAR PROBES SPECTROSCOPY ANALYTICAL DATA NMR CARBAMATE TOXICOLOGY
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Biophysics-Molecular Properties and Macromolecules
KEYWORDS: Toxicology-General
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control

36. Aranda, G. and Riant, O. (90). **SYNTHESIS OF METHOMYL DERIVATIVES AS NEW PHOTOSENSITIVE MOLECULAR PROBES.** *Synth Commun* 20 : 733-750.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO TOX DATA.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM CORN INSECTICIDE MITOCHONDRIAL MEMBRANE
KEYWORDS: Cytology and Cytochemistry-Plant
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-Molecular Properties and Macromolecules
KEYWORDS: Biophysics-Membrane Phenomena
KEYWORDS: External Effects-Light and Darkness
KEYWORDS: Toxicology-General
KEYWORDS: Plant Physiology
KEYWORDS: Phytopathology-Nonparasitic Diseases
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Gramineae

37. Archibald, S. O. and Winter, C. K. (89). **PESTICIDE RESIDUES AND CANCER RISKS.** *Calif Agric* 43 : 6-9.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM HUMAN LETTUCE TOMATO RISK ASSESSMENT FOOD INDUSTRY CONSUMER INFORMATION
KEYWORDS: Mathematical Biology and Statistical Methods
KEYWORDS: Food Technology-Fruits
KEYWORDS: Toxicology-Foods
KEYWORDS: Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis
KEYWORDS: Agronomy-General
KEYWORDS: Pest Control
KEYWORDS: Compositae
KEYWORDS: Solanaceae
KEYWORDS: Hominidae

38. Archibald, S. O. and Winter, C. K. (90). **PESTICIDES IN OUR FOOD ASSESSING THE RISKS.** *Winter, C. K., J. N. Seiber and C. F. Nuckton (Ed.). Chemicals in the Human Food Chain. Xv+276p. Van Nostrand Reinhold: Florence, Kentucky, Usa* London, England, Uk. Illus. Maps. Isbn 0-442-00421-4.; 0 : 1-50.

Chem Codes: Chemical of Concern: SZ,PNB,MTL,MOM,CBF,ADC; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM HUMAN HERBICIDE CARCINOGENIC RISK USAGE REGULATIONS UNITED STATES DEPARTMENT OF AGRICULTURE FDA CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE CALIFORNIA USA
KEYWORDS: General Biology-Institutions
KEYWORDS: Behavioral Biology-Human Behavior
KEYWORDS: Biochemical Studies-General
KEYWORDS: Nutrition-General Studies
KEYWORDS: Toxicology-Foods
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis
KEYWORDS: Public Health-Public Health Administration and Statistics
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Public Health: Disease Vectors-Inanimate
KEYWORDS: Pest Control
KEYWORDS: Hominidae

39. Archibald, S. O. and Winter, C. K. (90). **PESTICIDES IN OUR FOOD ASSESSING THE RISKS.** *Winter, C. K., J. N. Seiber and C. F. Nuckton (Ed.). Chemicals in the Human Food Chain. Xv+276p. Van Nostrand Reinhold: Florence, Kentucky, Usa* London, England, Uk. Illus. Maps. Isbn 0-442-00421-4.; 0 : 1-50.

Chem Codes: Chemical of Concern: SZ,PNB,MTL,MOM,CBF,ADC; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM HUMAN HERBICIDE CARCINOGENIC RISK USAGE REGULATIONS UNITED STATES DEPARTMENT OF AGRICULTURE FDA CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE CALIFORNIA USA
KEYWORDS: General Biology-Institutions
KEYWORDS: Behavioral Biology-Human Behavior
KEYWORDS: Biochemical Studies-General
KEYWORDS: Nutrition-General Studies
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KEYWORDS: Public Health-Public Health Administration and Statistics
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Public Health: Disease Vectors-Inanimate
KEYWORDS: Pest Control
KEYWORDS: Hominidae

40. Argauer, R. J., Eller, K. I., Ibrahim, M. A., and Brown, R. T. (95). **Determining propoxur and other carbamates in meat using HPLC fluorescence and gas chromatography/ion trap mass spectrometry after supercritical fluid extraction.** *Journal of Agricultural and Food Chemistry* 43 : 2774-2778.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Supercritical fluid extraction (SFE) using CO2 was examined for separating carbamate pesticides from interfering coextractives prior to analysis either by liquid chromatography with fluorescence detection or by gas chromatography/ion trap mass spectrometry (GC). Pre-extraction of the ground meat with acetonitrile prior to SFE left behind over 99% of the fat and fiber in ground meat. The concentrated acetonitrile extracts containing the carbamates and other coextractives were adsorbed on a pelletized diatomaceous earth for SFE. SFE further reduced the amount of coextractives 10-fold. This procedure allows larger, more representative samples to be routinely analyzed, removes interferences that appear in the fluorescence mode, and reduces many of the non-volatiles that can accumulate on the capillary column in the GC/ITMS mode and shorten its lifetime after multiple injections.
KEYWORDS: Methods
KEYWORDS: Radiation-Radiation and Isotope Techniques
KEYWORDS: Comparative Biochemistry
KEYWORDS: Biochemistry-Gases (1970-)
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Studies
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Biophysics-Molecular Properties and Macromolecules
KEYWORDS: Physiology
KEYWORDS: Metabolism-General Metabolism
KEYWORDS: Food Technology-Meats and Meat by-Products
KEYWORDS: Food Technology-Evaluations of Physical and Chemical Properties (1970-)
KEYWORDS: Food Technology-Preparation
KEYWORDS: Muscle-Physiology and Biochemistry
KEYWORDS: Toxicology-Foods
KEYWORDS: Public Health-Public Health Laboratory Methods
KEYWORDS: Pest Control

41. Argauer, R. J., Eller, K. I., Ibrahim, M. A., and Brown, R. T. (95). **Determining propoxur and other carbamates in meat using HPLC fluorescence and gas chromatography/ion trap mass spectrometry after supercritical fluid extraction.** *Journal of Agricultural and Food Chemistry* 43 : 2774-2778.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: NO SPECIES.
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KEYWORDS: Methods
KEYWORDS: Radiation-Radiation and Isotope Techniques
KEYWORDS: Comparative Biochemistry
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KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Studies
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Biophysics-Molecular Properties and Macromolecules

KEYWORDS: Physiology
KEYWORDS: Metabolism-General Metabolism
KEYWORDS: Food Technology-Meats and Meat by-Products
KEYWORDS: Food Technology-Evaluations of Physical and Chemical Properties (1970-)
KEYWORDS: Food Technology-Preparation
KEYWORDS: Muscle-Physiology and Biochemistry
KEYWORDS: Toxicology-Foods
KEYWORDS: Public Health-Public Health Laboratory Methods
KEYWORDS: Pest Control

42. Armbrust, K. L. and Reilly, D. (96). **RATE CONSTANTS OF SELECTED PESTICIDES WITH PHOTOCHEMICALLY GENERATED HYDROXYL RADICALS.** *211th American Chemical Society National Meeting, New Orleans, Louisiana, Usa, March 24-28, 1996. Abstracts of Papers American Chemical Society* 211 : Agro 189.

Chem Codes: Chemical of Concern: MOM; Rejection Code: METHODS.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM MEETING ABSTRACT METHOMYL OXAMYL INSECTICIDE BENSULFURON METHYL AZIMSULFURON SULFOMETURON METHYL HERBICIDE AQUATIC DEGRADATION
KEYWORDS: General Biology-Symposia
KEYWORDS: Ecology
KEYWORDS: Biochemical Studies-General
KEYWORDS: External Effects-Light and Darkness
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control

43. Armes, N. J. , Jadhav, D. R., Bond, G. S., and King, A. B. S. (92). **Insecticide resistance in Helicoverpa armigera in South India.** *Pesticide science [pestic. Sci.]* 34: 355-364.

Chem Codes: Chemical of Concern: MOM; Rejection Code: SURVEY.
Abstract: Cypermethrin, quinalphos, endosulfan and methomyl were bioassayed against strains of Helicoverpa armigera collected from field crops in Andhra Pradesh and Tamil Nadu, South India, during the 1989-90 and 1990-91 cropping seasons. In 1989, high levels of resistance to cypermethrin were recorded in strains from cotton in the cotton-growing regions of Guntur, Andhra Pradesh and Coimbatore, Tamil Nadu, and from pigeon pea near Hyderabad. There was no evidence for resistance to quinalphos or methomyl at the time. In 1990-91 sampling was more extensive and although tolerance to cypermethrin was lower than the previous season, the survey indicated that pyrethroid-resistant populations were present throughout much of Andhra Pradesh. Tolerance to quinalphos had increased slightly in 1990-91, while resistance to methomyl had increased substantially, particularly in the cotton-growing area of Guntur. Endosulfan tolerance had increased slightly compared to strains tested in 1986-88 in an earlier study. The geographic and temporal variations in severity of pyrethroid resistance in H. armigera in Andhra Pradesh are believed to arise because of dynamic interactions between local selection pressure and immigration of resistant and susceptible moths at certain times of the year.

44. Bain, L. J. and Leblanc, G. A. (96). **Interaction of structurally diverse pesticides with the human MDR1 gene product P-glycoprotein.** *Toxicology and Applied Pharmacology* 141 : 288-298.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. P-glycoprotein (P-gp) is a 170-kDa membrane-bound glycoprotein shown to efflux a wide variety of chemicals, such as chemotherapeutic agents and carcinogens. Experiments were conducted using B1610 murine melanoma cells transfected with the human MDR1 gene (B16/hMDR1 cells), which codes for P-gp, to determine whether this transporter may contribute to the cellular efflux of some pesticides. Thirty-eight pesticides representing several classes of compounds were evaluated for their potential to bind to P-gp, as measured by the inhibition of efflux of the P-gp substrate doxorubicin. Carbamate and pyrethroid insecticides exhibited little interaction with P-gp, while many of the organophosphorus and organochlorine pesticides significantly inhibited the efflux of doxorubicin. Pesticides that significantly inhibited the efflux of doxorubicin were then assessed for P-gp-mediated efflux. One

pesticide, endosulfan, exhibited slight though significant transport mediated by P-gp. Com
KEYWORDS: Cytology and Cytochemistry-Animal
KEYWORDS: Genetics and Cytogenetics-Human
KEYWORDS: Toxicology-General
KEYWORDS: Pest Control
KEYWORDS: Muridae

45. Bain, L. J. and Leblanc, G. A. (96). **Interaction of structurally diverse pesticides with the human MDR1 gene product P-glycoprotein.** *Toxicology and Applied Pharmacology* 141 : 288-298.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. P-glycoprotein (P-gp) is a 170-kDa membrane-bound glycoprotein shown to efflux a wide variety of chemicals, such as chemotherapeutic agents and carcinogens. Experiments were conducted using B1610 murine melanoma cells transfected with the human MDR1 gene (B16/hMDR1 cells), which codes for P-gp, to determine whether this transporter may contribute to the cellular efflux of some pesticides. Thirty-eight pesticides representing several classes of compounds were evaluated for their potential to bind to P-gp, as measured by the inhibition of efflux of the P-gp substrate doxorubicin. Carbamate and pyrethroid insecticides exhibited little interaction with P-gp, while many of the organophosphorus and organochlorine pesticides significantly inhibited the efflux of doxorubicin. Pesticides that significantly inhibited the efflux of doxorubicin were then assessed for P-gp-mediated efflux. One pesticide, endosulfan, exhibited slight though significant transport mediated by P-gp. Com
KEYWORDS: Cytology and Cytochemistry-Animal
KEYWORDS: Genetics and Cytogenetics-Human
KEYWORDS: Toxicology-General
KEYWORDS: Pest Control
KEYWORDS: Muridae

46. Baker, G. J. and Kovaliski, J. (99). **Detection of insecticide resistance in Plutella xylostella (L.) (Lepidoptera: Plutellidae) populations in South Australian crucifer crops.** *Australian journal of entomology [aust. J. Entomol.]* 38: 132-134.

Chem Codes: Chemical of Concern: MOM; Rejection Code: SURVEY.
Abstract: In response to reports of failures of sprays to control Plutella xylostella infestations in vegetable-growing areas around Adelaide in 1991, the extent of resistance to six insecticides in several South Australian populations of P. xylostella was determined. Populations sampled from vegetable crops in the Adelaide region were five- to 200-fold resistant to organophosphates (chlorpyrifos, methamidophos and mevinphos), eight- to 400-fold resistant to pyrethroids (esfenvalerate and permethrin) and six-fold resistant to the carbamate methomyl compared with a susceptible strain. Mevinphos and esfenvalerate were the most effective of the tested insecticides. These, together with Bacillus thuringiensis products, have continued until 1998 to be used almost exclusively for the control of P. xylostella in South Australian vegetable crops in the absence of any resistance management strategy.

47. Baker, L. W. , Fitzell, D. L., Seiber, J. N., Parker, T. R. , Shibamoto, T., Poore, M. W., Longley, K. E., Tomlin, R. P., Propper, R., and Duncan, D. W. (96). **Ambient air concentrations of pesticides in California.** *Environmental Science & Technology* 30 : 1365-1368.

Chem Codes: MOM,MLT,ADC,CBF; Rejection Code: METHODS.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. The California Air Resources Board conducted ambient air monitoring of pesticides in support of the California Department of Pesticide Regulation toxic air contaminant program. Monitoring was done in several communities in a county of high use during the month of expected peak use of a particular pesticide in order to assess general population exposure. Additional sampling was conducted adjacent to specific agricultural applications to assess maximum short-term concentrations to which the public might be exposed. Medium and low volume samplers were used with appropriate collection media (e.g., Teflon filters, XAD-2 adsorbent resin), followed by laboratory analysis. Concentrations measured around specific applications would be expected to be representative of other areas, especially in California, with comparable application rates, crops, and weather conditions. Since the program began in 1986, monitoring

has been conducted for 22 pesticides. Results for three soil fumig
KEYWORDS: Ecology
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-Molecular Properties and Macromolecules
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control

48. Baker, L. W. , Fitzell, D. L., Seiber, J. N., Parker, T. R. , Shibamoto, T., Poore, M. W., Longley, K. E., Tomlin, R. P., Propper, R., and Duncan, D. W. (96). **Ambient air concentrations of pesticides in California.** *Environmental Science & Technology* 30 : 1365-1368.

Chem Codes: Chemical of Concern: MOM,MLT,ADC,CBF; Rejection Code: METHODS.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. The California Air Resources Board conducted ambient air monitoring of pesticides in support of the California Department of Pesticide Regulation toxic air contaminant program. Monitoring was done in several communities in a county of high use during the month of expected peak use of a particular pesticide in order to assess general population exposure. Additional sampling was conducted adjacent to specific agricultural applications to assess maximum short-term concentrations to which the public might be exposed. Medium and low volume samplers were used with appropriate collection media (e.g., Teflon filters, XAD-2 adsorbent resin), followed by laboratory analysis. Concentrations measured around specific applications would be expected to be representative of other areas, especially in California, with comparable application rates, crops, and weather conditions. Since the program began in 1986, monitoring has been conducted for 22 pesticides. Results for three soil fumig
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KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-Molecular Properties and Macromolecules
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control

49. Baker, L. W. , Fitzell, D. L., Seiber, J. N., Parker, T. R. , Shibamoto, T., Poore, M. W., Longley, K. E., Tomlin, R. P., Propper, R., and Duncan, D. W. (96). **Ambient air concentrations of pesticides in California.** *Environmental Science & Technology* 30 : 1365-1368.

Chem Codes: Chemical of Concern: MOM,MLT,ADC,CBF; Rejection Code: METHODS.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. The California Air Resources Board conducted ambient air monitoring of pesticides in support of the California Department of Pesticide Regulation toxic air contaminant program. Monitoring was done in several communities in a county of high use during the month of expected peak use of a particular pesticide in order to assess general population exposure. Additional sampling was conducted adjacent to specific agricultural applications to assess maximum short-term concentrations to which the public might be exposed. Medium and low volume samplers were used with appropriate collection media (e.g., Teflon filters, XAD-2 adsorbent resin), followed by laboratory analysis. Concentrations measured around specific applications would be expected to be representative of other areas, especially in California, with comparable application rates, crops, and weather conditions. Since the program began in 1986, monitoring has been conducted for 22 pesticides. Results for three soil fumig
KEYWORDS: Ecology
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-Molecular Properties and Macromolecules
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control

50. Barcelo, D. (88). **A REVIEW OF LIQUID CHROMATOGRAPHY IN ENVIRONMENTAL PESTICIDE ANALYSIS.** *Chromatographia* 25 : 928-936.

Chem Codes: Chemical of Concern: SZ,MOM,CBF,ADC; Rejection Code: NO SPECIES.

ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM REVIEW ELECTROCHEMICAL DETECTION UV DETECTION
KEYWORDS: Radiation-Radiation and Isotope Techniques
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Biophysics-Molecular Properties and Macromolecules
KEYWORDS: External Effects-Light and Darkness
KEYWORDS: External Effects-Electric
KEYWORDS: Pest Control

51. Barcelo, D. (88). **A REVIEW OF LIQUID CHROMATOGRAPHY IN ENVIRONMENTAL PESTICIDE ANALYSIS.** *Chromatographia* 25 : 928-936.

Chem Codes: Chemical of Concern: SZ,MOM,CBF,ADC; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM REVIEW ELECTROCHEMICAL DETECTION UV DETECTION
KEYWORDS: Radiation-Radiation and Isotope Techniques
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Biophysics-Molecular Properties and Macromolecules
KEYWORDS: External Effects-Light and Darkness
KEYWORDS: External Effects-Electric
KEYWORDS: Pest Control

52. Barcelo, D., Chiron, S., Fernandez-Alba, A., Valverde, A., and Alpendurada, M. F. (96). **MONITORING PESTICIDES AND METABOLITES IN SURFACE WATER AND GROUNDWATER IN SPAIN.** *Meyer, M. T. And E. M. Thurman (Ed.). Acs Symposium Series, 630. Herbicide Metabolites in Surface Water and Groundwater* Symposium Held During the 209th National Meeting of the American Chemical Society, Anaheim, California, Usa, April 2-7, 1995. X+318p. American Chemical Society: Washington, Dc, Usa. Isbn 0-8412-3405-1.; 630 : 237-253.

Chem Codes: SZ,MTL,MOM,CBF; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER MEETING PAPER ALACHLOR ANALYSIS PESTICIDE POLLUTANT METOLACHLOR ATRAZINE SIMAZINE MOLINATE PROPANIL BENTAZONE MCPA CARBOFURAN METHIOCARB METHOMYL 3-HYDROXYCARBOFURAN PESTICIDE METABOLITE METHIOCARB SULFONE DEETHYLATRAZINE DEISOPROPYLATRAZINE 8-HYDROXYBENTAZONE AUTOMATED ON-LINE SOLID PHASE EXTRACTION-LIQUID CHROMATOGRAPHY SURFACE WATER GROUNDWATER PESTICIDES POLLUTION ANALYTICAL METHOD AQUIFER EBRO RIVER ESTUARY ALMERIA SPAIN
KEYWORDS: General Biology-Symposia
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control

53. Barcelo, D., Chiron, S., Fernandez-Alba, A., Valverde, A., and Alpendurada, M. F. (96). **MONITORING PESTICIDES AND METABOLITES IN SURFACE WATER AND GROUNDWATER IN SPAIN.** *Meyer, M. T. And E. M. Thurman (Ed.). Acs Symposium Series, 630. Herbicide Metabolites in Surface Water and Groundwater* Symposium Held During the 209th National Meeting of the American Chemical Society, Anaheim, California, Usa, April 2-7, 1995. X+318p. American Chemical Society: Washington, Dc, Usa. Isbn 0-8412-3405-1.; 630 : 237-253.

Chem Codes: Chemical of Concern: SZ,MTL,MOM,CBF; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER MEETING PAPER ALACHLOR ANALYSIS PESTICIDE POLLUTANT METOLACHLOR ATRAZINE SIMAZINE

MOLINATE PROPANIL BENTAZONE MCPA CARBOFURAN METHIOCARB METHOMYL 3-HYDROXYCARBOFURAN PESTICIDE METABOLITE METHIOCARB SULFONE DEETHYLATRAZINE DEISOPROPYLATRAZINE 8-HYDROXYBENTAZONE AUTOMATED ON-LINE SOLID PHASE EXTRACTION-LIQUID CHROMATOGRAPHY SURFACE WATER GROUNDWATER PESTICIDES POLLUTION ANALYTICAL METHOD AQUIFER EBRO RIVER ESTUARY ALMERIA SPAIN
KEYWORDS: General Biology-Symposia
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control

54. Barcelo, D., Chiron, S., Valverde, A., and Fernandez Alba a (95). **MONITORING GROUNDWATER POLLUTION BY CARBAMATE INSECTICIDES AND THEIR TRANSFORMATION PRODUCTS.** *209th American Chemical Society National Meeting, Anaheim, California, Usa, April 2-6, 1995. Abstracts of Papers American Chemical Society* 209 : Envr 57.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM MEETING ABSTRACT METHOMYL HYDROXYCARBOFURAN METHIOCARB SULFONE SEASON
KEYWORDS: General Biology-Symposia
KEYWORDS: Ecology
KEYWORDS: Comparative Biochemistry
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-Molecular Properties and Macromolecules
KEYWORDS: Metabolism-General Metabolism
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control

55. Barden, J. A. and Marini, R. P. (98). **Incidence of Diseases on Fruit of Nine Apple Genotypes as Influenced by Six Fungicide Treatments.** *Fruit Var.J.* 52: 128-136.

Chem Codes: Chemical of Concern: MOM,AZ,Captan,BMY,Ziram,MZB,MYC; Rejection Code: MIXTURE/NO CONC.

56. Beach, E. D. , Fernandez-Cornejo, J., Huang, W. Y., and Uri, N. D. (95). **The potential risks of groundwater and surface water contamination by agricultural chemicals used in vegetable production.** *Journal of Environmental Science and Health Part a Environmental Science and Engineering & Toxic and Hazardous Substance Control* 30 : 1295-1325.

Chem Codes: Chemical of Concern: SZ,MTL,MOM,CBF,ADC; Rejection Code: SURVEY.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. This study identifies those agricultural chemicals used in vegetable production in Arizona, Florida, Michigan, and Texas that are potential contaminants of groundwater and surface water which, in turn, pose risks to human health. Arizona and Florida are more likely to have nitrate leaching problems than Michigan or Texas. The potential for pesticide leaching is relatively high in Arizona head lettuce production and Michigan asparagus production but only moderate in Florida tomato production and Texas watermelon production. The potential for soil-adsorbed runoff and solution runoff in Arizona head lettuce, Florida tomatoes, and Michigan asparagus production is low to moderate. The potential for these sorts of losses in Texas watermelon production is relatively high. Vegetable production around Phoenix, Arizona, in southeast Texas, and in the entire state of Florida is located such that groundwater aquifers which supply drinking water are vulnerable to contamination.
KEYWORDS: General Biology-Conservation
KEYWORDS: Ecology
KEYWORDS: Biochemical Studies-General
KEYWORDS: Pathology

KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Soil Science-Physics and Chemistry (1970-)
KEYWORDS: Horticulture-Temperate Zone Fruits and Nuts
KEYWORDS: Horticulture-Vegetables
KEYWORDS: Pest Control
KEYWORDS: Hominidae

57. Beach, E. D. , Fernandez-Cornejo, J., Huang, W. Y., and Uri, N. D. (95). **The potential risks of groundwater and surface water contamination by agricultural chemicals used in vegetable production.** *Journal of Environmental Science and Health Part a Environmental Science and Engineering & Toxic and Hazardous Substance Control* 30 : 1295-1325.

Chem Codes: Chemical of Concern: SZ,MTL,MOM,CBF,ADC; Rejection Code: SURVEY.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. This study identifies those agricultural chemicals used in vegetable production in Arizona, Florida, Michigan, and Texas that are potential contaminants of groundwater and surface water which, in turn, pose risks to human health. Arizona and Florida are more likely to have nitrate leaching problems than Michigan or Texas. The potential for pesticide leaching is relatively high in Arizona head lettuce production and Michigan asparagus production but only moderate in Florida tomato production and Texas watermelon production. The potential for soil-adsorbed runoff and solution runoff in Arizona head lettuce, Florida tomatoes, and Michigan asparagus production is low to moderate. The potential for these sorts of losses in Texas watermelon production is relatively high. Vegetable production around Phoenix, Arizona, in southeast Texas, and in the entire state of Florida is located such that groundwater aquifers which supply drinking water are vulnerable to contamination.
KEYWORDS: General Biology-Conservation
KEYWORDS: Ecology
KEYWORDS: Biochemical Studies-General
KEYWORDS: Pathology
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Soil Science-Physics and Chemistry (1970-)
KEYWORDS: Horticulture-Temperate Zone Fruits and Nuts
KEYWORDS: Horticulture-Vegetables
KEYWORDS: Pest Control
KEYWORDS: Hominidae

58. Beasley, V. R. (93). **Pesticides and Pets.** *In: K.D.Racke and A.R.Leslie (Eds.), 203rd Natl.Meet.of the Am.Chem.Soc., Apr.5-10, 1992, San Francisco, California, ACS Symp.Ser.No.522, Pesticides in Urban Environments: Fate and Significance, Am.Chem.Soc., Washington, D.C.* 344-351.

Chem Codes: EcoReference No.: 74376
Chemical of Concern: MOM,CPY; Rejection Code: REVIEW.

59. Bedo, M. and Cieleszky, V. (80). **Nutritional toxicology in the evaluation of pesticides.** *Bibl Nutr Dieta* 20-31.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.

60. Behl, E. and Eiden, C. A. (91). **FIELD-SCALE MONITORING STUDIES TO EVALUATE MOBILITY OF PESTICIDES IN SOILS AND GROUNDWATER.** *Nash, R. G. And A. R. Leslie (Ed.). Acs (American Chemical Society) Symposium Series, 465. Groundwater Residue Sampling Design* 199th National Meeting, Boston, Massachusetts, Usa, April 22-27, 1990. Xii+395p. American Chemical Society: Washington, D.c., Usa. Illus. Maps. Isbn 0-8412-2091-3.; 0 : 27-46.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM INSECTICIDES FUNGICIDES RODENTICIDE

RESIDUES CONTAMINATION LEACHING EPA USA
KEYWORDS: General Biology-Symposia
KEYWORDS: Methods
KEYWORDS: Ecology
KEYWORDS: Ecology
KEYWORDS: Biochemical Studies-General
KEYWORDS: Movement (1971-)
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health-Public Health Administration and Statistics
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control

61. Bellar, T. A. and Budde, W. L. (88). **DETERMINATION OF NONVOLATILE ORGANIC COMPOUNDS IN AQUEOUS ENVIRONMENTAL SAMPLES USING LIQUID CHROMATOGRAPHY-MASS SPECTROMETRY.** *Anal Chem* 60 : 2076-2083.

Chem Codes: Chemical of Concern: SZ,MOM,ADC,CBF; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM EPA POLLUTION PESTICIDES
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control

62. Bellar, T. A. and Budde, W. L. (88). **DETERMINATION OF NONVOLATILE ORGANIC COMPOUNDS IN AQUEOUS ENVIRONMENTAL SAMPLES USING LIQUID CHROMATOGRAPHY-MASS SPECTROMETRY.** *Anal Chem* 60 : 2076-2083.

Chem Codes: Chemical of Concern: SZ,MOM,ADC,CBF; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM EPA POLLUTION PESTICIDES
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control

63. Berville, A., Ghazi, A., Charbonnier, M., and Bonavent, J. F. (84). **Effects of Methomyl and Helminthosporium maydis Toxin on Matrix Volume, Proton Motive Force, and NAD Accumulation in Maize (Zea mays L.) Mitochondria.** *Plant Physiol.* 76: 508-517.

Chem Codes: Chemical of Concern: MOM; Rejection Code: IN VITRO.

64. Beyer, W. N. (90). **EVALUATING SOIL CONTAMINATION.** *U S Fish Wildl Serv Biol Rep* 90 : I-Viii, 1-25.

Chem Codes: Chemical of Concern: MOM,CBF,ADC; Rejection Code: MIXTURE.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM EARTHWORMS SEWAGE SLUDGE SEDIMENTS WILDLIFE FOOD CHAINS
KEYWORDS: Ecology
KEYWORDS: Ecology
KEYWORDS: Ecology
KEYWORDS: Ecology
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air

KEYWORDS: Soil Science-Physics and Chemistry (1970-)
KEYWORDS: Invertebrata
KEYWORDS: Oligochaeta
KEYWORDS: Vertebrata-Unspecified

65. Beyer, W. N. (90). **EVALUATING SOIL CONTAMINATION.** *U S Fish Wildl Serv Biol Rep* 90 : I-Viii, 1-25.

Chem Codes: Chemical of Concern: MOM,CBF,ADC; Rejection Code: MIXTURE.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM EARTHWORMS SEWAGE SLUDGE SEDIMENTS WILDLIFE FOOD CHAINS
KEYWORDS: Ecology
KEYWORDS: Ecology
KEYWORDS: Ecology
KEYWORDS: Ecology
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Soil Science-Physics and Chemistry (1970-)
KEYWORDS: Invertebrata
KEYWORDS: Oligochaeta
KEYWORDS: Vertebrata-Unspecified

66. Bhushan, B. and Hoondal, G. S. (99). **Effect of Fungicides, Insecticides and Allosamidin on a Thermostable Chitinase from Bacillus sp. BG-11.** *World J.Microbiol.Biotechnol.* 15: 403-404.

Chem Codes: Chemical of Concern: MZB,CuS,BMY,MLN,MOM,Captan,CTN,DINO,MLX,TDF,ACP,CYP,DMT,HPT; Rejection Code: BACTERIA.

67. Blevins, R. D., Lijinksy, W., and Regan, J. D. (1977Jul). **Nitrosated methylcarbamate insecticides: effect on the DNA of human cells.** *Mutat Res 1977 Jul;44(1):1-7.* 44: 1-7.

Chem Codes: MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: Normal human skin cells were treated with six insecticide esters of N-methylcarbamic acid or their N-nitroso derivatives. The DNA of the cells was sedimented in alkaline sucrose gradients at various times after treatment. The insecticides used were aldicarb, baygon, BUX-TEN, carbofuran, landrin, and methomyl. Numerous single-strand breaks were apparent in the DNA of all the nitroso derivative-treated cells but not in the DNA of those treated with the parent insecticides. Since the effect of the nitroso derivatives on the DNA could be observed for at least 20 h after removal of the chemical from the cultures, the DNA repairing events normally occurring in human cells after damage initiated by these chemical agents was not repaired as UV-type DNA damage or ionizing-type DNA damage in human cells. These observations suggest that the human cellular DNA in vivo is irreversibly altered by nitrosated N-methyl carbamate insecticides resulting in numerous alkali-sensitive bonds.

68. Blevins, R. D., Lijinksy, W., and Regan, J. D. (1977Jul). **Nitrosated methylcarbamate insecticides: effect on the DNA of human cells.** *Mutat Res 1977 Jul;44(1):1-7.* 44: 1-7.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: Normal human skin cells were treated with six insecticide esters of N-methylcarbamic acid or their N-nitroso derivatives. The DNA of the cells was sedimented in alkaline sucrose gradients at various times after treatment. The insecticides used were aldicarb, baygon, BUX-TEN, carbofuran, landrin, and methomyl. Numerous single-strand breaks were apparent in the DNA of all the nitroso derivative-treated cells but not in the DNA of those treated with the parent insecticides. Since the effect of the nitroso derivatives on the DNA could be observed for at least 20 h after removal of the chemical from the cultures, the DNA repairing events normally occurring in human cells after damage initiated by these chemical agents was not repaired as UV-type

DNA damage or ionizing-type DNA damage in human cells. These observations suggest that the human cellular DNA in vivo is irreversibly altered by nitrosated N-methyl carbamate insecticides resulting in numerous alkali-sensitive bonds.

69. Blevins, R. D., Lijinksy, W., and Regan, J. D. (1977Jul). **Nitrosated methylcarbamate insecticides: effect on the DNA of human cells.** *Mutat Res 1977 Jul;44(1):1-7.* 44: 1-7.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: Normal human skin cells were treated with six insecticide esters of N-methylcarbamic acid or their N-nitroso derivatives. The DNA of the cells was sedimented in alkaline sucrose gradients at various times after treatment. The insecticides used were aldicarb, baygon, BUX-TEN, carbofuran, landrin, and methomyl. Numerous single-strand breaks were apparent in the DNA of all the nitroso derivative-treated cells but not in the DNA of those treated with the parent insecticides. Since the effect of the nitroso derivatives on the DNA could be observed for at least 20 h after removal of the chemical from the cultures, the DNA repairing events normally occurring in human cells after damage initiated by these chemical agents was not repaired as UV-type DNA damage or ionizing-type DNA damage in human cells. These observations suggest that the human cellular DNA in vivo is irreversibly altered by nitrosated N-methyl carbamate insecticides resulting in numerous alkali-sensitive bonds.

70. Blewett, T. C. and Krieger, R. I. (**Field leaf-test kit for rapid determination of dislodgeable foliar residues of organophosphate and N-methyl carbamate insecticides.** 45: 120-4 CODEN: BECTA6; ISSN: 0007-4861.

Chem Codes: Chemical of Concern: CHLOR; Rejection Code: SURVEY.
Dislodgeable phosalone, chlorpyrifos, methomyl, azinphos-Me, and phosmet residue levels were detd. on grape, pear, almond and pumpkin foliage, by gas chromatog. and cholinesterase inhibition activity (leaf-test kit). The 2 methods were in good agreement; the leaf-test kit method has the advantage of being rapid, not requiring org. solvents. Detection levels <0.1 .mu.g/cm2 may be possible.

71. Blondell, J. (97). **EPIDEMIOLOGY OF PESTICIDE POISONING IN THE UNITED STATES WITH SPECIAL REFERENCE TO OCCUPATIONAL CASES.** *Occupational Medicine (Philadelphia)* 12 : 209-220.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM JOURNAL ARTICLE HUMAN OCCUPATIONAL PHYSICIAN WORKER OCCUPATIONAL HEALTH EPIDEMIOLOGY PESTICIDE POISONINGS MORTALITY DATA HOSPITALIZATIONS EMERGENCY ROOM VISITS PUBLIC HEALTH POISON CONTROL CENTER DATA PESTICIDE TOXIN PESTICIDES ESTIMATIONS OCCUPATIONAL EXPOSURE TOXICITY DIAGNOSIS NORTH AMERICA CALIFORNIA USA
KEYWORDS: Pathology
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health-Health Services and Medical Care
KEYWORDS: Public Health: Environmental Health-Occupational Health
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Public Health: Epidemiology-Miscellaneous
KEYWORDS: Hominidae

72. Blondell, J. (97). **EPIDEMIOLOGY OF PESTICIDE POISONING IN THE UNITED STATES WITH SPECIAL REFERENCE TO OCCUPATIONAL CASES.** *Occupational Medicine (Philadelphia)* 12 : 209-220.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM JOURNAL ARTICLE HUMAN OCCUPATIONAL PHYSICIAN WORKER OCCUPATIONAL HEALTH EPIDEMIOLOGY PESTICIDE POISONINGS MORTALITY DATA HOSPITALIZATIONS EMERGENCY ROOM VISITS PUBLIC HEALTH POISON CONTROL CENTER DATA PESTICIDE TOXIN PESTICIDES ESTIMATIONS

OCCUPATIONAL EXPOSURE TOXICITY DIAGNOSIS NORTH AMERICA CALIFORNIA USA
KEYWORDS: Pathology
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health-Health Services and Medical Care
KEYWORDS: Public Health: Environmental Health-Occupational Health
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Public Health: Epidemiology-Miscellaneous
KEYWORDS: Hominidae

73. Bodnaryk, R. P., Luo, M., and Kudryk, L. (97). **Effects of Modifying the Phytosterol Profile of Canola, Brassica napus L., on Growth, Development, and Survival of the Bertha Armyworm, Mamestra configurata Walker (Lepidoptera : Noctuidae), the Flea Beetle, Phyllotreta cruciferae (Goeze) (Coleoptera: Chrysomelidae) and the Aphids, Lipaphis erysimi (Kaltenbach) and Myzus persicae (Sulzer) (Homoptera: Aphididae).** *Can.J.Plant Sci.* 77: 677-683.

Chem Codes: Chemical of Concern: MOM; Rejection Code: BIOLOGICAL TOXICANT/NO TOXICANT.

74. Bodnaryk, R. P., Luo, M. a., and Kudryk, L. (97). **Effects of modifying the phytosterol profile of canola, Brassica napus L., on growth, development, and survival of the bertha armyworm, Mamestra configurata Walker (Lepidoptera; Noctuidae), the flea beetle, Phyllotreta cruciferae (Goeze) (Coleoptera: Chrysomelidae) and the aphids, Lipaphis erysimi (Kaltenbach) and Myzus persicae (Sulzer) (Homoptera: Aphididae).** *Canadian journal of plant science/revue canadienne de phytotechnie [can. J. Plant sci./Rev. Can. Phytotech.]. Vol. 77, no. 4, pp. 677-683. Oct 1997.*

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO TOXICANT, BIOLOGICAL TOXICANT.
Abstract: The sterol profile of canola, Brassica napus, was altered by treatment with 5 ppm of the systemic fungicides fenpropimorph and tridemorph. The usual Delta super(5)-phytosterols sistosterol, campesterol, and stigmasterol were depleted in leaves and roots and replaced by unusual 4-alpha-methyl and 4-desmethyl sterols that were never observed in untreated plants. Growth, development, and survival of the bertha armyworm, Mamestra configurata, fed leaves of treated canola in the laboratory were affected adversely at specific stages in the life cycle. Larval survival was high and not significantly different in treated and control groups. Most of the mortality in the treated group occurred at pupation and during pupal-adult development. At ecolosion a high proportion of adults were deformed (crumpled wings, failure to exit the pupal case). The adverse effects of feeding on fenpropimorph-treated canola were not attributable to the fungicide itself because larvae fed an artificial diet containing a 10-fold higher concentration of fenpropimorph had normal growth, development, and survival. Although larvae of M. configurata fed canola with a modified sterol profile showed no obvious physiological symptoms, the larvae were more susceptible to the insecticide methomyl (Lannate). Phytosterol modification of the plant in combination with insecticide application may lead to a synergistic interaction in the pest insect. Fewer larvae, prepupae and pupae of the flea beetle, Phyllotreta cruciferae were recovered from soil samples in field plots with canola treated with fenpropimorph or tridemorph in the laboratory. Adult beetles began to emerge from the soil later, emergence progressed more slowly and fewer were trapped in plots with treated canola. Fewer larvae and adults (up to 50% reduction) of the aphids M. persicae and Lipaphis erysimi, were produced on canola treated with tridemorph. Since aphids harbour sterol-synthesizing mycetocyte-symbionts and are not dependent on a dietary source of sterols, factors other than a deficiency of Delta super(5)-phytosterols must be responsible for the reduction in aphid numbers on treated plants.

75. Bogialli, S. , Curini, R., Di Corcia, A., Nazzari, M., and Tamburro, D. (2004Feb25). **A simple and rapid assay for analyzing residues of carbamate insecticides in vegetables and fruits: hot water extraction followed by liquid chromatography-mass spectrometry.** *J Agric Food Chem 2004 Feb 25;52(4):665-71.* 52: 665-71.

Chem Codes: Chemical of Concern: MOM,ADC; Rejection Code: NO SPECIES.
ABSTRACT: A simple, specific, and rapid analytical method for determining seven largely used carbamate insecticides in tomato, spinach, lettuce, zucchini, pear, and apple is here presented. This method is based on the matrix solid-phase dispersion technique, with heated water as extractant followed by liquid chromatography

(LC)-mass spectrometry (MS) equipped with a single quadrupole and an electrospray ion source. Target compounds were extracted from the vegetal matrixes by water heated at 50 degrees C. After acidification and filtration, 0.25 mL of any aqueous extract was injected in the LC column. MS data acquisition was performed in the selected ion monitoring mode, selecting three ions for each target compound. Heated water appeared to be an excellent extractant because recovery data ranged between 76 (carbaryl in spinach) and 99% (pirimicarb in spinach), with RSDs not larger than 10%. Using trimethacarb (an obsolete carbamate insecticide) as a surrogate internal standard, the accuracy of the analysis varied between 84 and 110%, with RSDs not larger than 9%. On the basis of a signal-to-noise ratio of 10, limits of quantification were estimated to range between 2 (pirimicarb) and 10 ppb (oxamyl) and were not influenced by the type of matrix. When trying to fractionate analytes by using a short chromatographic run time, marked weakening of the ion signals for oxamyl, methomyl, and aldicarb were observed. This effect was traced to polar endogenous co-extractives eluted in the first part of the chromatographic run that interfered with gas-phase ion formation for carbamates. Adopting more selective chromatographic conditions eliminated this effect.

76. Bogialli, S. , Curini, R., Di Corcia, A., Nazzari, M., and Tamburro, D. (2004Feb25). **A simple and rapid assay for analyzing residues of carbamate insecticides in vegetables and fruits: hot water extraction followed by liquid chromatography-mass spectrometry.** *J Agric Food Chem 2004 Feb 25;52(4):665-71.* 52: 665-71.

    Chem Codes: Chemical of Concern: MOM,ADC; Rejection Code: NO SPECIES.
    ABSTRACT: A simple, specific, and rapid analytical method for determining seven largely used carbamate insecticides in tomato, spinach, lettuce, zucchini, pear, and apple is here presented. This method is based on the matrix solid-phase dispersion technique, with heated water as extractant followed by liquid chromatography (LC)-mass spectrometry (MS) equipped with a single quadrupole and an electrospray ion source. Target compounds were extracted from the vegetal matrixes by water heated at 50 degrees C. After acidification and filtration, 0.25 mL of any aqueous extract was injected in the LC column. MS data acquisition was performed in the selected ion monitoring mode, selecting three ions for each target compound. Heated water appeared to be an excellent extractant because recovery data ranged between 76 (carbaryl in spinach) and 99% (pirimicarb in spinach), with RSDs not larger than 10%. Using trimethacarb (an obsolete carbamate insecticide) as a surrogate internal standard, the accuracy of the analysis varied between 84 and 110%, with RSDs not larger than 9%. On the basis of a signal-to-noise ratio of 10, limits of quantification were estimated to range between 2 (pirimicarb) and 10 ppb (oxamyl) and were not influenced by the type of matrix. When trying to fractionate analytes by using a short chromatographic run time, marked weakening of the ion signals for oxamyl, methomyl, and aldicarb were observed. This effect was traced to polar endogenous co-extractives eluted in the first part of the chromatographic run that interfered with gas-phase ion formation for carbamates. Adopting more selective chromatographic conditions eliminated this effect.

77. Bolognesi, C., Merlo, F., Rabboni, R., Roggieri, P., Reggiardo, G., and Abbondandolo, A. (95). **GENOTOXIC RISK FROM OCCUPATIONAL EXPOSURE TO PESTICIDES IN FLORICULTURE.** *Clinical Chemistry* 41 : 1919-1922.

    Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
    ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM RESEARCH ARTICLE HUMAN
    KEYWORDS: Genetics and Cytogenetics-Human
    KEYWORDS: Biochemical Studies-General
    KEYWORDS: Toxicology-Environmental and Industrial Toxicology
    KEYWORDS: Public Health: Environmental Health-Occupational Health
    KEYWORDS: Horticulture-Flowers and Ornamentals
    KEYWORDS: Pest Control
    KEYWORDS: Hominidae

78. Bolognesi, C., Merlo, F., Rabboni, R., Roggieri, P., Reggiardo, G., and Abbondandolo, A. (95). **GENOTOXIC RISK FROM OCCUPATIONAL EXPOSURE TO PESTICIDES IN FLORICULTURE.** *Clinical Chemistry* 41 : 1919-1922.

    Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
    ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM RESEARCH ARTICLE HUMAN

KEYWORDS: Genetics and Cytogenetics-Human
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Occupational Health
KEYWORDS: Horticulture-Flowers and Ornamentals
KEYWORDS: Pest Control
KEYWORDS: Hominidae

79. Bonatti, S., Bolognesi, C., Degan, P., and Abbondandolo, A. (94). **Genotoxic effects of the carbamate insecticide methomyl. I. In vitro studies with pure compounds and the technical formulation "Lannate 25".** *Environmental and molecular mutagenesis [environ. Mol. Mutag.]* 23: 306-311.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
Abstract: The carbamate insecticide methomyl and the methomyl-containing technical formulation "Lannate 25" were tested on whole blood human lymphocyte cultures. Both products induced dose-dependent increases in chromosome aberrations and micronuclei. Lannate 25 induced DNA damage as measured by the alkaline elution assay and hydroxylation of guanine at the C8 position. Sister chromatid exchanges were not increased significantly with either product. Overall, the technical formulation was more active than the pure compound, when compared at similar concentrations of active principle. Moreover, a different ratio of CREST-positive /CREST-negative micronuclei was observed with the two products, pure methomyl being relatively more active than Lannate 25 in the induction of CREST-positive micronuclei. On the basis of these results, previous evaluations of methomyl as a nongenotoxic compound should be reconsidered.

80. Brauckhoff, S. and Thier, H. P. (92). **METHYL CARBAMATE INSECTICIDES.** *Thier, H.-P. And J. Kirchhoff (Ed.). Manual of Pesticide Residue Analysis, Vol. 2. Xvi+483p. Vch Verlagsgesellschaft Mbh: Weinheim, Germany* Vch Publishers, Inc.: New York, New York, Usa. Isbn 3-527-27017-5; Isbn 0-89573-957-7.; 0 : 349-358.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: CHEM METHOD.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM APPLE BEAN CARROT CHERRY HEAD CABBAGE KOHLRABI LEEK LETTUCE RADISH STRAWBERRY TOMATO PESTICIDE GAS CHROMATOGRAPHY PURIFICATION METHOD ANALYTICAL METHOD
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
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KEYWORDS: Plant Physiology
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Liliaceae
KEYWORDS: Compositae
KEYWORDS: Cruciferae
KEYWORDS: Leguminosae
KEYWORDS: Rosaceae
KEYWORDS: Solanaceae
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81. Brauckhoff, S. and Thier, H. P. (92). **METHYL CARBAMATE INSECTICIDES.** *Thier, H.-P. And J. Kirchhoff (Ed.). Manual of Pesticide Residue Analysis, Vol. 2. Xvi+483p. Vch Verlagsgesellschaft Mbh: Weinheim, Germany* Vch Publishers, Inc.: New York, New York, Usa. Isbn 3-527-27017-5; Isbn 0-89573-957-7.; 0 : 349-358.

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KEYWORDS: Leguminosae
KEYWORDS: Rosaceae
KEYWORDS: Solanaceae
KEYWORDS: Umbelliferae

82. Braun, C. J., Siedow, J. N., and Levings, C. S Iii (90). **Fungal toxins bind to the URF13 protein in maize mitochondria and Escherichia coli.** *Plant Cell* 2 : 153-162.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO TOX DATA.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Expression of the maize mitochondrial T-urf13 gene results in a sensitivity to a family of fungal pathotoxins and to methomyl, a structurally unrelated systemic insecticide. Similar effects of pathotoxins and methomyl are observed when T-urf13 is cloned and expressed in Escherichia coli. An interaction between these compounds and the membrane-bound URF13 protein permeabilizes the inner mitochondrial and bacterial plasma membranes. To understand the toxin-URF13 effects, we have investigated whether toxin specifically binds to the URF13 protein. Our studies indicate that toxin binds to the URF13 protein in maize mitochondria and in E. coli expressing URF13. Binding analysis in E. coli reveals cooperative toxin binding. A low level of specific toxin binding is also demonstrated in cms-T and cms-T-restored mitochondria; however, binding does not appear to be cooperative in maize mitochondria. Competition and displacement studies of E. coli demonstrate that toxin binding is
KEYWORDS: Cytology and Cytochemistry-Plant
KEYWORDS: Genetics and Cytogenetics-Plant
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biochemical Studies-Proteins
KEYWORDS: Biophysics-Membrane Phenomena
KEYWORDS: Metabolism-Proteins
KEYWORDS: Toxicology-General
KEYWORDS: Genetics of Bacteria and Viruses
KEYWORDS: Plant Physiology
KEYWORDS: Phytopathology-Diseases Caused by Fungi
KEYWORDS: Phytopathology-Parasitism and Resistance
KEYWORDS: Pest Control
KEYWORDS: Enterobacteriaceae (1979-)
KEYWORDS: Fungi-Unspecified
KEYWORDS: Gramineae

83. Brewster, M. A., Rupe, W., and Rafferty, M. H. (92). **Small area pesticides data: Multiplicity and variability of pesticide usage on southern row crops.** *Arch Environ Contam Toxicol* 23 : 289-294.

Chem Codes: Chemical of Concern: PNB,SZ,MTL,MOM,MLT,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Epidermiologic studies of possible effects of agricultural environments upon human health suffer from lack of reliable pesticides usage data. The Arkansas Reproductive Health Monitoring System has developed a method for estimating specific pesticides usage annually for sub-county regions, including amounts, application methods, and months. This method is applied to 39 regions of 8 central Arkansas countries (USA) for 1980-82. The huge variability of pesticides using on individual crops demonstrates the inaccuracy likely if general survey estimates are employed. Annual usage of pesticides in a single subcountry region of 53,000 hectares (130,880 land acres) was > 1/2 million pounds (248,670 kg) of 60 pesticides, 40 of which were applied during a four month period. The multiplicity and variability of

pesticides usage indicate the need for locally developed pesticides data for epidemiologic studies and for combined studies across regions with widely differing agricultura
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KEYWORDS: General Biology-Information
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KEYWORDS: Public Health-Public Health Administration and Statistics
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84. Brewster, M. A., Rupe, W., and Rafferty, M. H. (92). **Small area pesticides data: Multiplicity and variability of pesticide usage on southern row crops.** *Arch Environ Contam Toxicol* 23 : 289-294.

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85. Brewster, M. A., Rupe, W., and Rafferty, M. H. (92). **Small area pesticides data: Multiplicity and variability of pesticide usage on southern row crops.** *Arch Environ Contam Toxicol* 23 : 289-294.

Chem Codes: Chemical of Concern: PNB,SZ,MTL,MOM,MLT,ADC,CBF; Rejection Code: HUMAN HEALTH.
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KEYWORDS: Pest Control
KEYWORDS: Hominidae

86. Bromilow, R. H., Briggs, G. G., Williams, M. R., Smelt, J. H., Tuinstra, L. G Mt, and Traag, W. A. (86). **THE ROLE OF FERROUS IONS IN THE RAPID DEGRADATION OF OXAMYL METHOMYL AND ALDICARB IN ANAEROBIC SOILS.** *Pestic Sci* 17 : 535-547.

Chem Codes: Chemical of Concern: MOM,ADC; Rejection Code: NO TOX DATA.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM INSECTICIDE NEMATOCIDE REDOX ENVIRONMENTAL FATE
KEYWORDS: Biochemical Studies-General
KEYWORDS: Metabolism-General Metabolism
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Food and Industrial Microbiology-Biodegradation and Biodeterioration
KEYWORDS: Soil Microbiology
KEYWORDS: Soil Science-Physics and Chemistry (1970-)
KEYWORDS: Soil Science-Fertility and Applied Studies (1970-)
KEYWORDS: Phytopathology-Diseases Caused by Animal Parasites
KEYWORDS: Phytopathology-Disease Control
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control

87. Bromilow, R. H., Briggs, G. G., Williams, M. R., Smelt, J. H., Tuinstra, L. G Mt, and Traag, W. A. (86). **THE ROLE OF FERROUS IONS IN THE RAPID DEGRADATION OF OXAMYL METHOMYL AND ALDICARB IN ANAEROBIC SOILS.** *Pestic Sci* 17 : 535-547.

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KEYWORDS: Phytopathology-Diseases Caused by Animal Parasites
KEYWORDS: Phytopathology-Disease Control
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control

88. Brouwer, D. H., De Haan, M., Leenheers, L. H., De Vreede, S. A. F., and Van Hemmen, J. J. (97). **Half-Lives of Pesticides on Greenhouse Crops.** *Bull.Environ.Contam.Toxicol.* 58: 976-984.

Chem Codes: EcoReference No.: 73579
User Define 2: WASH,NA
Chemical of Concern: MOM,BTN,CTN,DDVP,MZB,MCB,PPX,TPM; Rejection Code : REVIEW.

89. Brouwer, D. H., Ravensberg, J. C., De Kort, W. L. A. M., and Van Hemmen, J. J. (94). **A personal sampler for**

inhalable mixed-phase aerosols: modification to an existing sampler and validation test with three pesticides. *Chemosphere* 28: 1135-1146.

Chem Codes: Chemical of Concern: MOM; Rejection Code: CHEM METHODS.
A modified personal air sampler with an inhalable entry efficiency for collecting pesticide aerosols and vapours simultaneously was studied. An XAD2 cartridge was constructed to fit into the sampler housing and the vapour trapping efficiency of the cartridge was determined for three pesticides using a dynamic U-tube test system. Tests were performed with different amounts of pesticides (1.7 up to 1450 [mu]g) and duration of sampling (30 - 120 min) under various environmental conditions. Trapping efficiency varied from 87% up to 100% for dichlorvos and methomyl, but was slightly lower for chlorothalonil (72% up to 79%). No break-through was observed. The efficiency was not affected by humidity, temperature, pesticide loading and sampling duration. Penetration of solid aerosols through the cartridge at normal sampling flow rate (21.min-1) was below 5%. It is concluded that the present sampler enables adequate simultaneous sampling of pesticide aerosols and vapours.

90. Brown, M. A. , Kim, I. S., Sasinos, F. I., and Stephens, R. D. (90). **ANALYSIS OF TARGET AND NONTARGET POLLUTANTS IN AQUEOUS AND HAZARDOUS WASTE SAMPLES BY LIQUID CHROMATOGRAPHY-PARTICLE BEAM MASS SPECTROMETRY.** *Brown, M. A. (Ed.). Acs (American Chemical Society) Symposium Series, No. 420. Liquid Chromatography Spectrometry: Applications in Agricultural, Pharmaceutical, and Environmental Chemistry* 197th National Meeting, Dallas, Texas, Usa, April 9-14, 1989. Xii+298p. American Chemical Society: Washington, D.c., Usa. Illus. Isbn 0-8412-1740-8.; 0 : 198-214.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: METHODS.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM
KEYWORDS: General Biology-Symposia
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air

91. Brown, M. A. , Kim, I. S., Sasinos, F. I., and Stephens, R. D. (90). **ANALYSIS OF TARGET AND NONTARGET POLLUTANTS IN AQUEOUS AND HAZARDOUS WASTE SAMPLES BY LIQUID CHROMATOGRAPHY-PARTICLE BEAM MASS SPECTROMETRY.** *Brown, M. A. (Ed.). Acs (American Chemical Society) Symposium Series, No. 420. Liquid Chromatography Spectrometry: Applications in Agricultural, Pharmaceutical, and Environmental Chemistry* 197th National Meeting, Dallas, Texas, Usa, April 9-14, 1989. Xii+298p. American Chemical Society: Washington, D.c., Usa. Illus. Isbn 0-8412-1740-8.; 0 : 198-214.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: METHODS.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM
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KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air

92. Brown, M. W. and Lightner, G. W. (97). **Recommendations on Minimum Experimental Plot Size and Succession of Aphidophaga in West Virginia, USA, Apple Orchards.** *Entomophaga* 42: 257-267.

Chem Codes: Chemical of Concern: MOM,AZ; Rejection Code: MIXTURE/NO CONC.

93. Bruynzeel, D. P. (91). **CONTACT SENSITIVITY TO LANNATE.** *Contact Dermatitis* 25 : 60-61.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.

ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM HUMAN FARM WORKERS REGISTERED TRADEMARK PESTICIDE NUDRIN AGRICHEMICAL HERBICIDE AGRICULTURE HORTICULTURE METHOMYL S METHYL-N-METHYLCARBAMOYLOXYTHIOACETIMIDATE HAZARDOUS MATERIALS OCCUPATIONAL TOXICOLOGY OCCUPATIONAL HEALTH AND SAFETY ALLERGIC CONTACT DERMATITIS
KEYWORDS: Biochemical Studies-General
KEYWORDS: Pathology
KEYWORDS: Integumentary System-Pathology
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Immunology and Immunochemistry-Immunopathology
KEYWORDS: Allergy
KEYWORDS: Public Health: Environmental Health-Occupational Health
KEYWORDS: Agronomy-General
KEYWORDS: Agronomy-Weed Control
KEYWORDS: Pest Control
KEYWORDS: Hominidae

94. Buchholz, U. , Mermin, J., Rios, R., Casagrande, T. L., Galey, F., Lee, M., Quattrone, A., Farrar, J., Nagelkerke, N., and Werner, S. B. (2002). **An Outbreak of Food-Borne Illness Associated With Methomyl-Contaminated Salt.** *Journal of the american medical association [j. Am. Med. Assoc.]. Vol. 288, no. 5, pp. 604-610. 7 aug 2002.*

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
Abstract: On January 5, 1999, the California Department of Health Services was notified of the repeated occurrence (December 21, 1998, and January 2, 1999) of gastrointestinal tract illness among patrons at a Thai restaurant in central California. To identify the source of the outbreak. Case-control study; microbiological and toxicological laboratory testing of samples of food, stool, and vomitus. Thai food restaurant in central California. Patrons of the restaurant. A case (n = 107) was defined as dizziness, nausea, or vomiting occurring in a person who ate at the restaurant between December 20, 1998, and January 2, 1999, with onset of symptoms within 2 hours of eating. A control (n = 169) was a person who ate at the restaurant during the same period but reported no symptoms. Odds ratios (ORs) of illness associated with food exposures; ORs of shifts during which illness occurred associated with certain cooks; laboratory results. The median latency period was 40 minutes from beginning eating to first symptom and was 2 hours to onset of diarrhea. The median duration of symptoms was 6 hours. Twenty-six persons (24%) visited the emergency department or were treated by a physician; no person required hospitalization. Patients reported nausea (95%), dizziness (72%), abdominal cramps (58%), headache (52%), vomiting (51%), chills (48%), and diarrhea (46%). Fifty-one cases (48%) included dizziness, lightheadedness, or a feeling of disequilibrium as the initial symptom. Illness was statistically associated with several foods and ingredients, but no single dish or ingredient explained a substantial number of cases. The analysis of food exposures included salt added by cooks, as estimated by using the amount of salt in the recipe for each dish and the amount of each dish eaten by respondents. This association was stronger with increasing levels of salt: ORs for illness among persons who consumed more than 0.42 to 0.84, more than 0.84 to 1.25, and more than 1.25 tsp of salt added to foods in the kitchen were 1.9 (95% confidence interval [CI], 0.6-5.7), 3.0 (95% CI, 1.0-8.8), and 4.0 (95% CI, 1.3-13.5) compared with persons who consumed less than 0.42 tsp (P value for trend = .004). Methomyl, a highly toxic carbamate pesticide, was identified in a sample of vomitus (20 ppm) and in salt taken from containers in the storeroom (mean, 5600 ppm) and the stovetop (mean, 1425 ppm). The oral toxic dose causing illness in 50% of those exposed to methomyl was estimated to be 0.15 mg/kg of body weight (estimated range, 0.09-0.31 mg/kg of body weight). The presence of cook A was associated with shifts during which cases of illness occurred (OR, 10.4; 95% CI, 1.2-157.4). This outbreak of gastrointestinal illness was associated with the consumption of food seasoned with methomyl-contaminated salt. To allow rapid assessment for further investigational and control measures by health officials, physicians should report suspected outbreaks of illness to public health departments, however trivial the symptoms or cause may seem.

95. Bushway, R. J. (81). **High-performance liquid chromatographic determination of carbaryl and 1-naphthol at residue levels in various water sources by direct injection and trace enrichment.** *Journal of Chromatography A* 211: 135-143.

Chem Codes: PNB; Rejection Code: CHEM METHOD.
A high-performance liquid chromatographic method is described for determining carbaryl and its hydrolysis product, 1-naphthol, in water at residue levels by direct injection and trace enrichment. Water from three sources, public water supply, stream and the ocean, was analyzed for carbaryl and 1-naphthol at concentrations as low as 3.78 and 10 ppb, respectively, without a clean-up, concentration or derivatization step. Carbaryl was detected at 0.1 ppb and 1-naphthol at 0.5 ppb by employing a concentration step involving a C18 Sep-Pak cartridge. The coefficients of variation for all determinations ranged from 2.5 to 10.7%. Fourteen other widely used pesticides--carbofuran, methomyl, thiram, azinphos-methyl, benomyl, monuron, diuron, propham, chlorpropham, pentachlorophenol, the oxygen analogue of azinphosmethyl, pentachloronitrobenzene, simazine and atrazine-- were chromatographed using this system. Pentachloronitrobenzene, diuron and thiram interfered with the determination of 1-naphthol, while atrazine co-chromatographed with carbaryl.
http://www.sciencedirect.com/science/article/B6TG8-44Y3WG0-8G/2/b74c85a55b43923df31e5455ef53d305

96. Bushway, R. J. (81). **High-performance liquid chromatographic determination of carbaryl and 1-naphthol at residue levels in various water sources by direct injection and trace enrichment.** *Journal of Chromatography A* 211: 135-143.

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http://www.sciencedirect.com/science/article/B6TG8-44Y3WG0-8G/2/b74c85a55b43923df31e5455ef53d305

97. Byers, R. E. and Smith, A. H Jr (**EFFECT OF TEMPERATURE ON CHEMICAL APPLE THINNING RESULTS.** *92nd Annual Meeting of the American Society for Horticultural the 40th Annual Congress of the Canadian Society for Science, Montreal, Quebec, Canada, July 30-August 3, 1995*.

Chem Codes: Chemical of Concern: EDT,MOM; Rejection Code: NO TOX DATA.

98. Cable, G. G. and Doherty, S. (99). **Acute carbamate and organochlorine toxicity causing convulsions in an agricultural pilot: A case report.** *Aviation Space and Environmental Medicine* 70 : 68-72.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Agricultural pilots are involved in a particularly hazardous occupation with a high occupational mortality rate. They face many risks, not least of which is exposure to the agricultural chemicals that they spray. Many accidents and illnesses have been reported previously in the literature, attributable to the acute and chronic effects of chemical exposure, most notably the organophosphate family of insecticides. There are few reports of post-crash exposure to carbamate and organochlorine insecticides. This report documents the case of a professional agricultural pilot who, following an emergency landing, was soaked with Methomyl (a carbamate) and Endosulfan (an organochlorine) leaking from his aircraft. He developed cholinergic symptoms within an hour of the accident, which settled spontaneously, but suffered a tonic-clonic seizure some 6 h later while in the hospital. The seizure was attributed to exposure to the organochlorine, however, subsequent EEG recordings demon
KEYWORDS: Nervous System-General
KEYWORDS: Toxicology-General
KEYWORDS: Pest Control
KEYWORDS: Hominidae

99. Camel, V. and Bermond, A. (98). **The use of ozone and associated oxidation processes in drinking water**

treatment. *Water Research* 32 : 3208-3222.

Chem Codes: Chemical of Concern: SZ,MTL,MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. This paper summarizes the main applications of ozonation and associated oxidation processes in the treatment of natural waters (surface and ground waters) for drinking water production. In fact, oxidants may be added at several points throughout the treatment: pre-oxidation, intermediate oxidation or final disinfection. So, the numerous effects of chemical oxidation are discussed along the water treatment: removal of inorganic species, aid to the coagulation-floculation process, degradation of organic matter and disinfection. Of prime importance in potable water production is the removal of organic matter (natural humic substances, as well as micropollutants, especially pesticides) to avoid degradation of the distributed water (mainly bad odors and tastes; formation of disinfection by-products such as trihalomethanes; microbial regrowth in the distribution system). Consequently, this point has been particularly detailed in this paper. As a matter of fact, complete miner
KEYWORDS: Biochemical Studies-General
KEYWORDS: Public Health-Disinfection and Vector Control
KEYWORDS: Public Health: Environmental Health-Sewage Disposal and Sanitary Measures
KEYWORDS: Disinfection

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KEYWORDS: Disinfection

101. Canna-Michaelidou, S. and Nicolaou, A. S. (96). **Evaluation of the genotoxicity potential (by Mutatox test) of ten pesticides found as water pollutants in Cyprus.** *Science of the Total Environment* 193 : 27-35.

Chem Codes: CBF ADC; Rejection Code: BACTERIA.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Ten pesticides: aldicarb, aldicard sulfone, aldicarb oxide, carbofuran, propoxur, methomyl, diuron, linuron, alachlor and parathion-methyl, found as water pollutants in Cyprus, were evaluated for their genotoxicity potential with the Mutatox test, both directly and after exogenous activation with S9 hepatic enzymes. A dark variant (M169) of the Photobacterium phosphoreum was used as the test organism. Trials were undertaken in triplicate using ground-water spiked with pesticides solutions at testing concentration theoretically corresponding to acute effects of 0.004%, up to a maximum of 2%. All tested pesticides were found to be 'suspect genotoxic' directly and after S-9 activation, except for Alachlor which after S-9 activation was found to be 'genotoxic' at 30 mug/l. Among the ten pesticides Linuron was found to be 'suspect genotoxic' after S-9 activation at the lowest concentration, i.e. 2 mug/l. Genotoxicity after activation with S-9 was demonstrated at a concentrat
KEYWORDS: Genetics and Cytogenetics-Plant
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Phytopathology-Nonparasitic Diseases
KEYWORDS: Vibrionaceae (1992-)

102. Canna-Michaelidou, S. and Nicolaou, A. S. (96). **Evaluation of the genotoxicity potential (by Mutatox test) of ten pesticides found as water pollutants in Cyprus.** *Science of the Total Environment* 193 : 27-35.

Chem Codes: Chemical of Concern: CBF ADC; Rejection Code: BACTERIA.
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KEYWORDS: Vibrionaceae (1992-)

104. Canna-Michaelidou, Stella and Nicolaou, Andre-Sylvia (96). **Evaluation of the genotoxicity potential (by MutatoxTM test) of ten pesticides found as water pollutants in Cyprus.** *The Science of The Total Environment* 193: 27-35.

Chem Codes: MOM,ADC; Rejection Code: BACTERIA.
ABSTRACT: Ten pesticides: aldicarb, aldicard sulfone, aldicarb oxide, carbofuran, propoxur, methomyl, diuron, linuron, alachlor and parathion-methyl, found as water pollutants in Cyprus, were evaluated for their genotoxicity potential with the Mutatox test, both directly and after exogenous activation with S9 hepatic enzymes. A dark variant (M 169) of the **Photobacterium phosphoreum** was used as the test organism. Trials were undertaken in triplicate using ground-water spiked with pesticides solutions at testing concentration theoretically corresponding to acute effects of 0.004%, up to a maximum of 2%. All tested pesticides were found to be 'suspect genotoxic' directly and after S-9 activation, except for Alachlor which after S-9 activation was found to be 'genotoxic' at 30 micrograms/l. Among the ten pesticides Linuron was found to be 'suspect genotoxic' after S-9 activation at the lowest concentration, i.e. 2 micrograms/l. Genotoxicity after activation with S-9 was demonstrated at a concentration 1-3 orders of magnitude lower than the respective concentration for direct genotoxic effects. Moreover, genotoxicity after S-9 was developed at levels where the acute toxic

effects (Microtox) were 'non measurable' to 'negligible'. The investigation of possible genotoxic effects provides essential information on the impacts of pesticides on the Ecosystem and can contribute to the selection of pesticides with the least possible effects.

105. Canna-Michaelidou, Stella and Nicolaou, Andre-Sylvia (96). **Evaluation of the genotoxicity potential (by MutatoxTM test) of ten pesticides found as water pollutants in Cyprus.** *The Science of The Total Environment* 193: 27-35.

Chem Codes: Chemical of Concern: MOM,ADC; Rejection Code: BACTERIA.
ABSTRACT: Ten pesticides: aldicarb, aldicard sulfone, aldicarb oxide, carbofuran, propoxur, methomyl, diuron, linuron, alachlor and parathion-methyl, found as water pollutants in Cyprus, were evaluated for their genotoxicity potential with the Mutatox test, both directly and after exogenous activation with S9 hepatic enzymes. A dark variant (M 169) of the **Photobacterium phosphoreum** was used as the test organism. Trials were undertaken in triplicate using ground-water spiked with pesticides solutions at testing concentration theoretically corresponding to acute effects of 0.004%, up to a maximum of 2%. All tested pesticides were found to be 'suspect genotoxic' directly and after S-9 activation, except for Alachlor which after S-9 activation was found to be 'genotoxic' at 30 micrograms/l. Among the ten pesticides Linuron was found to be 'suspect genotoxic' after S-9 activation at the lowest concentration, i.e. 2 micrograms/l. Genotoxicity after activation with S-9 was demonstrated at a concentration 1-3 orders of magnitude lower than the respective concentration for direct genotoxic effects. Moreover, genotoxicity after S-9 was developed at levels where the acute toxic effects (Microtox) were 'non measurable' to 'negligible'. The investigation of possible genotoxic effects provides essential information on the impacts of pesticides on the Ecosystem and can contribute to the selection of pesticides with the least possible effects.

106. Canna-Michaelidou, Stella and Nicolaou, Andre-Sylvia (96). **Evaluation of the genotoxicity potential (by MutatoxTM test) of ten pesticides found as water pollutants in Cyprus.** *The Science of The Total Environment* 193: 27-35.

Chem Codes: Chemical of Concern: MOM,ADC; Rejection Code: BACTERIA.
ABSTRACT: Ten pesticides: aldicarb, aldicard sulfone, aldicarb oxide, carbofuran, propoxur, methomyl, diuron, linuron, alachlor and parathion-methyl, found as water pollutants in Cyprus, were evaluated for their genotoxicity potential with the Mutatox test, both directly and after exogenous activation with S9 hepatic enzymes. A dark variant (M 169) of the **Photobacterium phosphoreum** was used as the test organism. Trials were undertaken in triplicate using ground-water spiked with pesticides solutions at testing concentration theoretically corresponding to acute effects of 0.004%, up to a maximum of 2%. All tested pesticides were found to be 'suspect genotoxic' directly and after S-9 activation, except for Alachlor which after S-9 activation was found to be 'genotoxic' at 30 micrograms/l. Among the ten pesticides Linuron was found to be 'suspect genotoxic' after S-9 activation at the lowest concentration, i.e. 2 micrograms/l. Genotoxicity after activation with S-9 was demonstrated at a concentration 1-3 orders of magnitude lower than the respective concentration for direct genotoxic effects. Moreover, genotoxicity after S-9 was developed at levels where the acute toxic effects (Microtox) were 'non measurable' to 'negligible'. The investigation of possible genotoxic effects provides essential information on the impacts of pesticides on the Ecosystem and can contribute to the selection of pesticides with the least possible effects.

107. Cappiello, A., Famiglini, G., and Bruner, F. (94). **DETERMINATION OF ACIDIC AND BASIC-NEUTRAL PESTICIDES IN WATER WITH A NEW MICROLITER FLOW RATE LC-MS PARTICLE BEAM INTERFACE.** *Analytical Chemistry* 66 : 1416-1423.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: METHODS.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM RESEARCH ARTICLE LIQUID CHROMATOGRAPHY-MASS SPECTROMETRY ANALYTICAL METHOD
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Pest Control

108. Cappiello, A., Famiglini, G., and Bruner, F. (94). **DETERMINATION OF ACIDIC AND BASIC-NEUTRAL PESTICIDES IN WATER WITH A NEW MICROLITER FLOW RATE LC-MS PARTICLE BEAM INTERFACE.** *Analytical Chemistry* 66 : 1416-1423.

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KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Pest Control

109. Carbonell, E., Puig, M., Xamena, N., Creus, A., and Marcos, R. (90). **Sister chromatid exchange in lymphocytes of agricultural workers exposed to pesticides.** *Mutagenesis* 5 : 403-406.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Sister chromatid exchange (SCE) was studied in the lymphocytes of 27 agricultural workers occupationally exposed to several pesticides and 28 matched controls from el Maresme, an agricultural area near Barcelona. Comparison between both groups with the t-test did not reveal significant differences. These negative findings suggest that, possibly, the exposure level is too low to increase SCE in human lymphocytes in vivo. Our results indicate that smokers, both the workers and the controls, had a higher SCE frequency than non-smokers, in agreement with previous data reported by different authors.
KEYWORDS: Cytology and Cytochemistry-Human
KEYWORDS: Genetics and Cytogenetics-Human
KEYWORDS: Social Biology
KEYWORDS: Biochemical Studies-General
KEYWORDS: Blood
KEYWORDS: Toxicology-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Occupational Health
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control
KEYWORDS: Hominidae

110. Carbonell, E., Valbuena, A., Xamena, N., Creus, A., and Marcos, R. (95). **Temporary variations in chromosomal aberrations in a group of agricultural workers exposed to pesticides.** *Mutation Research* 344 : 127-134.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. The induction of chromosomal aberrations (CA) was studied in the peripheral lymphocytes of 29 male agricultural workers occupationally exposed to several pesticides. To investigate possible exposure-related changes in the frequency of CA, a longitudinal study has been conducted. Two blood samples were taken from each individual: one in a period of high exposure (spring-summer) and the other in a period of lower exposure (autumn-winter). Simultaneously, two matched Control groups constituted by 29 and 24 healthy men, without indication of exposure to pesticides, were analysed. During the period of major exposure, the group of agricultural workers showed a significant increase in the frequency of CA, mainly of chromatid-type, when compared to the unexposed control group; nevertheless, this increase in the expression of CA was not found in the period of minor exposure. This finding could indicate that the frequency of CA is related to the intensity of the pesticide exposur
KEYWORDS: Genetics and Cytogenetics-Human
KEYWORDS: Biochemical Studies-Nucleic Acids
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Occupational Health
KEYWORDS: Pest Control
KEYWORDS: Hominidae

111. Careri, M., Mangia, A., and Musci, M. (96). **Applications of liquid chromatography-mass spectrometry interfacing systems in food analysis: Pesticide, drug and toxic substance residues.** *Journal of Chromatography a* 727 : 153-184.

Chem Codes: Chemical of Concern: MOM,CBF,ADC; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. This paper reviews applications of different LC-MS techniques for the determination of xenobiotic substances in foods. Specific examples of contaminants discussed are pesticides, herbicides, insecticides and drugs; concerning toxic substances, mycotoxins, phycotoxins, cyanobacterial toxins, mutagenic and heterocyclic amines and P-carbolines, arsenic, tin and inorganic halogen compounds, packaging materials and various epoxy resins are considered. Advantages and limitations are outlined for the different LC-MS interfacing systems (particle beam, thermospray, atmospheric pressure ionization with electrospray, ionspray and heated pneumatic nebulizer). The impact of developments in instrumental analysis on methodology and the limitations of the various LC-MS methods are discussed. Further, the coupling of LC with element-selective detection systems such as inductively coupled plasma mass spectrometry is discussed, with emphasis on speciation of trace toxic elements in foods
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
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KEYWORDS: Food Technology-General
KEYWORDS: Food Technology-Evaluations of Physical and Chemical Properties (1970-)
KEYWORDS: Pharmacology-General
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KEYWORDS: Pharmacology-General
KEYWORDS: Toxicology-General
KEYWORDS: Toxicology-Foods
KEYWORDS: Pest Control

113. Chapman, R. A. and Harris, C. R. (1979Apr1). **Determination of residues of methomyl and oxamyl and their oximes in crops by gas-liquid chromatography of oxime trimethylsilyl ethers.** *J Chromatogr 1979 Apr 1;171:249-62* 171: 249-62.

Chem Codes: Chemical of Concern: MOM; Rejection Code: METHOD.
ABSTRACT: The gas-liquid chromatographic behavior of methomyl (methyl

N-[(methyl-carbamoyl)oxy]thioacetimidate), oxamyl (methyl N',N'-dimethyl-N-[(methylcarbamoyl)oxyl]-1-thiooxamimidate), their respective oxime hydrolysis products and the trimethylsilyl (TMS) ethers of the oximes on 5% OV-1 was studied under isothermal conditions using a flame-photometric detector in the sulfur-selective mode. In contrast to the behavior of the parent carbamates and underivatized oximes, the oxime-TMS ethers readily produced symmetrical peaks of consistent size. Quantities of derivative equivalent to at least 0.25 ng of oxime were easily measurable. Derivative formation was reproducible for standards over the range 10.0 to 0.25 microgram/ml in benzene and at 10.0 and 0.50 microgram/ml in the presence of extractives from tomato, carrot and celery at concentrations equivalent to 10 g/ml of crop. Derivative yields from crop extract fotifications were 89% or better in most cases. Both the carbamates and oximes were simply and consistently recovered in high yield from crops fortified at 1.00 and 0.05 ppm using the procedures described. The inclusion of a second analytical step provided separate analysis for oximes and carbamates. The application of these observations to the analyses of residues in crops is discussed.

114. Chaput, D. (1988May-Jun). **Simplified multiresidue method for liquid chromatographic determination of N-methyl carbamate insecticides in fruits and vegetables.** *J Assoc Off Anal Chem 1988 May-Jun;71(3):542-6.* 71: 542-6.

Chem Codes: MOM,ADC; Rejection Code: CHEM METHODS.
ABSTRACT: A simplified method is described for determining 7 N-methyl carbamates (aldicarb, carbaryl, carbofuran, methiocarb, methomyl, oxamyl, and propoxur) and 3 related metabolites (aldicarb sulfoxide, aldicarb sulfone, and 3-hydroxy carbofuran) in fruits and vegetables. Residues are extracted from crops with methanol; coextractives are then separated by gel permeation chromatography (GPC) or GPC with on-line Nuchar-Celite cleanup for crops with high chlorophyll and/or carotene content (e.g., cabbage and broccoli). Carbamates are separated on a reverse-phase liquid chromatography column, using a methanol-water gradient mobile phase. Separation is followed by postcolumn hydrolysis to yield methylamine, and the formation of a fluorophore with o-phthalaldehyde and 2-mercaptoethanol prior to fluorescence detection. Recovery data were obtained by fortifying 5 different crops (apples, broccoli, cabbages, cauliflower, and potatoes) at 0.05 and 0.5 ppm. Recoveries averaged 93% at both fortification levels except for the very polar aldicarb sulfoxide for which recoveries averaged around 52% at both levels. The coefficient of variation of the method at both levels is less than 5% and the limit of detection, defined at 5 times baseline noise, varies between 5 and 10 ppb, depending on the compound.

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117. Charlton, R. R., Carlson, C. W., Kenyon, L. H., Carski, T. H., Smith, W. F., Steele, W. J Ii, Liberatore, F. A., Leung, K. S., and Valteris, C. S. (92). **USE OF IMMUNOASSAYS TO DETECT CROP PROTECTION CHEMICALS APPLICATIONS IN SOIL-ANALYSIS AND WORKER SAFETY.** *Annual Meeting of the American Phytopathological Society, Portland, Oregon, Usa, August 8-12, 1992. Phytopathology* 82 : 1168.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM ABSTRACT HUMAN CHLORIMURON ETHYL HERBICIDE LANNATE INSECTICIDE ON-SITE MONITORING LABORATORY MONITORING OCCUPATIONAL TOXICOLOGY AGRICULTURE
KEYWORDS: General Biology-Symposia
KEYWORDS: Methods
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-General
KEYWORDS: Immunology and Immunochemistry-General
KEYWORDS: Public Health: Environmental Health-Occupational Health
KEYWORDS: Agronomy-Weed Control
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Hominidae

118. Chaumont, F., Bernier, B., Buxant, R., Williams, M. E., Levings, C. S. 3rd, and Boutry, M. (1995Feb14). **Targeting the maize T-urf13 product into tobacco mitochondria confers methomyl sensitivity to mitochondrial respiration.** *Proc Natl Acad Sci U S a 1995 Feb 14;92(4):1167-71.* 92: 1167-71.

Chem Codes: Chemical of Concern: MOM; Rejection Code: IN VITRO.
ABSTRACT: The URF13 protein, which is encoded by the maize mitochondrial T-urf13 gene, is thought to be responsible for pathotoxin and methomyl sensitivity and male sterility. We have investigated whether T-urf13 confers toxin sensitivity and male sterility when expressed in another plant species. The coding sequence of T-urf13 was fused to a mitochondrial targeting presequence, placed under the control of the cauliflower mosaic virus 35S promoter, and introduced into tobacco by Agrobacterium tumefaciens-mediated transformation. Plants expressing high levels of URF13 were methomyl sensitive. Subcellular analysis indicated that URF13 is mainly associated with the mitochondria. Adding methomyl to isolated mitochondria stimulated NADH-linked respiration and uncoupled oxidative phosphorylation, indicating that URF13 was imported into the mitochondria, and conferred toxin sensitivity. Most control plants, which expressed the T-urf13c construct lacking the mitochondrial presequence, were methomyl sensitive and contained URF13 in a membrane fraction. Subcellular fractionation by sucrose gradient centrifugation showed that URF13 sedimented at several positions, suggesting the protein is associated with various organelles, including mitochondria. No methomyl effect was observed in isolated mitochondria, however, indicating that URF13 was not imported and did not confer toxin sensitivity to the mitochondria. Thus, URF13 confers toxin sensitivity to transgenic tobacco with

or without import into the mitochondria. There was no correlation between the expression of URF13 and male sterility, suggesting either that URF13 does not cause male sterility in transgenic tobacco or that URF13 is not expressed in sufficient amounts in the appropriate anther cells.

119. Chen, J. T., Juo, C. G., Yeh, C. F., and Her, G. R. (96). **PRODUCT-ION ASSISTED LIBRARY SEARCH OF THE ELECTRON IONIZATION MASS SPECTRUM OF A MIXTURE.** *Rapid Communications in Mass Spectrometry* 10 : 1179-1182.

Chem Codes: Chemical of Concern: MOM; Rejection Code: METHODS, NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM RESEARCH ARTICLE METHODOLOGY MIXTURE ELECTRON IONIZATION MASS SPECTRUM ANALYSIS PRODUCT-ION ASSISTED LIBRARY SEARCHING CHLOROBENZILATE PESTICIDE ALACHLOR METHOMYL ATRAZINE PESTICIDE ANALYSIS CHEMISTRY ANALYTICAL METHOD
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Pest Control

120. Chen, Y. J., Lu, Y. H., Liu, J., and Chen, Y. M. (2000). **Solid phase extraction of methomyl and thiodicarb from environmental water with an activated carbon cartridge and their determination by HPLC.** *Journal of environmental sciences (china) [j. Environ. Sci. (China)]. Vol. 12, no. 1, pp. 98-102. Mar 2000.*

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO SPECIES.
Abstract: A solid phase extraction procedure of methomyl and thiodicarb from environmental water was presented. This method utilizes a 40--60 mesh activated carbon cartridge and high performance liquid chromatography (HPLC). The 40--60 mesh activated carbon works faster and yield higher adsorption efficiency. Detection limits of methomyl and thiodicarb in environmental water are 0.1 mu g/L and 0.2 mu g/L, respectively. Average recoveries of fortified methomyl and thiodicarb in water are in the range of 90.7%--98.8% and 88.9%--103.6%, respectively. The relative standard deviations are lower than 7%. This method is simple, rapid, accurate and precise.

121. Chiao-Cheng, J. H., Reagan, B. M., Bresee, R. R., Meloan, C. E., and Kadoum, A. M. (88). **CARBAMATE INSECTICIDE REMOVAL IN LAUNDERING FROM COTTON AND POLYESTER FABRICS.** *Arch Environ Contam Toxicol* 17 : 87-94.

Chem Codes: MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM CARBOFURAN METHOMYL DROSOPHILA-MELANOGASTER TOXICITY TEXTILES DETERGENTS
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Invertebrata
KEYWORDS: Diptera

122. Chiao-Cheng, J. H., Reagan, B. M., Bresee, R. R., Meloan, C. E., and Kadoum, A. M. (88). **CARBAMATE INSECTICIDE REMOVAL IN LAUNDERING FROM COTTON AND POLYESTER FABRICS.** *Arch Environ Contam Toxicol* 17 : 87-94.

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ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM CARBOFURAN METHOMYL DROSOPHILA-MELANOGASTER TOXICITY TEXTILES DETERGENTS
KEYWORDS: Biochemical Studies-General
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KEYWORDS: Invertebrata
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Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM CARBOFURAN METHOMYL DROSOPHILA-MELANOGASTER TOXICITY TEXTILES DETERGENTS
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Invertebrata
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124. Chiao, J. H. and Reagan, B. (85). **CARBAMATE INSECTICIDE REMOVAL IN LAUNDERING FROM COTTON AND POLYESTER FABRICS.** *Fu Jen Stud* 0 : NEED#.

Chem Codes: MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM DROSOPHILA-MELANOGASTER CARBOFURAN METHOMYL TOXICITY
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Invertebrata
KEYWORDS: Diptera

125. Chiao, J. H. and Reagan, B. (85). **CARBAMATE INSECTICIDE REMOVAL IN LAUNDERING FROM COTTON AND POLYESTER FABRICS.** *Fu Jen Stud* 0 : NEED#.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
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127. Chiron, S., Dupas, S., Scribe, P., and Barcelo, D. (94). **APPLICATION OF ON-LINE SOLID-PHASE EXTRACTION FOLLOWED BY LIQUID CHROMATOGRAPHY-THERMOSPRAY MASS SPECTROMETRY TO THE DETERMINATION OF PESTICIDES IN ENVIRONMENTAL WATERS.** *Journal of Chromatography a* 665 : 295-305.

Chem Codes: SZ,MTL,MOM,MLT,CBF,ADC; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM RESEARCH ARTICLE ANALYTICAL METHOD
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130. Chiron, S., Fernandez Alba a, and Barcelo, D. (93). **Comparison of on-line solid-phase disk extraction to liquid-liquid extraction for monitoring selected pesticides in environmental waters.** *Environmental Science & Technology* 27 : 2352-2359.

Chem Codes: Chemical of Concern: SZ,MTL,MOM,CBF,ADC; Rejection Code: NO SPECIES.

ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. A multiresidue method for the analysis of 30 pesticides and various transformation products (TPs) has been developed. On-line solid-phase extraction (SPE) using 10 Empore 4.6-mm extraction disks containing C-18 and/ or styrene-divinylbenzene were placed in a disk holder and were used coupled on-line with liquid chromatography (LC) with either UV or postcolumn fluorescence derivatization (EPA method 531.1). The on-line SPE method, using 150 and 10 mL of water for LC-UV and postcolumn fluorescence derivatization, respectively, has been compared with the liquid-liquid extraction (LLE) method involving dichloromethane (NPS method 4) and 1 L of water. At a spiking level of 0.3 mug in the Ebro (Spain) and Rhone (France) river waters and Almeria (Spain) well waters, recoveries varied between 70 and 100%, except for the polar TPs that were either extracted with poor recoveries or interferences were noticed in early-eluting peaks of the LC-UV traces. Confirmation was achieved by
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132. Chiron, S., Valverde, A., Fernandez-Alba, A., and Barcelo, D. (95). **Automated sample preparation for monitoring groundwater pollution by carbamate insecticides and their transformation products.** *Journal of Aoac International* 78 : 1346-1352.

Chem Codes: SZ,MTL,MOM,MLT,CBF; Rejection Code: NO SPECIES .
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. We investigated automated on-line solid-phase extraction (SPE) followed by liquid chromatographic (LC) techniques for monitoring carbamates and triazines and their transformation products. Analytical determinations were performed by LC with UV or postcolumn fluorescence detection (U.S. Environmental Protection Agency Method 531.1 for carbamate insecticides) after preconcentration with on-line SPE using C18 Empore extraction disks. Online SPE/thermospray mass spectrometry with time-scheduled selected-ion monitoring was used as confirmatory method. The method was used to determine pesticide traces in well waters of a typical aquifer in the Almeria area (Andalucia, south of Spain) from March 1993 to February 1994. The major pollutants, found in highest amounts, were carbofuran, methiocarb, and methomyl, at levels of 0.32, 0.3, and 0.8 mug/L, respectively. According to r suits of seasonal variation studies, pollution by carbamate insecticides is sporadic and exceeds the li

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134. Chiu, K. S. , Van Langenhove a, and Tanaka, C. (89). **HIGH-PERFORMANCE LIQUID CHROMATOGRAPHIC MASS SPECTROMETRIC AND HIGH-PERFORMANCE LIQUID CHROMATOGRAPHIC-TANDEM MASS SPECTROMETRIC ANALYSIS OF CARBAMATE PESTICIDES.** *Biomed Environ Mass Spectrom* 18 : 200-206.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: CHEM METHODS.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
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KEYWORDS: Pest Control

136. Choudhury, G. K., Pothiraj, P., Palaniappan, S., and Rao, P. (92). **A Methodology for Evaluation of Residual Effect of Weed-Management Practices in Rice (Oryza sativa)-Rice-Greengram (Phaseolus radiatus) Cropping System.** *Indian J.Agron.* 37: 407-410.

Chem Codes: EcoReference No.: 73690
User Define 2: WASH,CALF
Chemical of Concern: MLT,BTC,ANL,24DXY,MOM; Rejection Code: MIXTURE.

137. Clare, A. S., Costlow, J. D., Bedair, H. M., and Lumb, G. (91). **Crab Limb Regeneration and Developmental Toxicity.** *Can Tech Rep Fish Aquat Sci* 1: 366-382.

Chem Codes: Chemical of Concern: MOM,CBF; Rejection Code: PUBL AS.

138. Clark, J. M., Brooks, M. W., Woods, S. A., and Coli, W. M. (87). **ENHANCED DEGRADATION OF PESTICIDES IN AQUEOUS FORMULATIONS DUE TO ADDITION OF CALCIUM CHLORIDE.** *J Am Soc Hortic Sci* 112 : 260-263.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO TOX DATA.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM FORMETANATE BENOMYL METHOMYL AZINPHOS-METHYL FUNGICIDE
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biochemical Studies-Minerals
KEYWORDS: Pest Control

139. Cohen, S., Svrjcek, A., Durborow, T., and Barnes, N. L. (99). **Water quality impacts by golf courses.** *Journal of Environmental Quality* 28 : 798-809.

Chem Codes: Chemical of Concern: SZ,PNB,MOM,CBF,ADC; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Interest in water quality impacts by golf courses has grown significantly since the late 1980s due mostly to the local permitting process. Results from permit-driven studies are frequently not published. Seventeen studies (36 golf courses) passed our review criteria and were incorporated into a detailed data review. A total of 16 587 data points from pesticide, metabolite, solvent, and NO3 analyses of surface water and ground water were reviewed. There were approximately 90 organics analyzed in ies that exceeded HALss for ground water and surface water were 0.07 and 0.29%, respectively. The percentages would be somewhat higher if they could be expressed in terms of samples collected rather than chemicals analyzed. The MCL (10 mg/L) for nitrate-nitrogen (NO3-N) in surface water was not exceeded, and only 31/849 (3.6%) of the samples exceeded the MCL in ground water; however, most of the NO3 MCL exceedances were apparently due to prior agricultural land use. There was a s
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141. Colborn, T., Vom Saal, F. S., and Soto, A. M. (93). **Developmental Effects of Endocrine-Disrupting Chemicals in Wildlife and Humans.** *Environ.Health Perspect.* 101: 378-384.

Chem Codes: EcoReference No.: 59204
Chemical of Concern: MOM,CBF,ADC; Rejection Code: REFS CHECKED/REVIEW.

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Chem Codes: EcoReference No.: 59204
Chemical of Concern: MOM,CBF,ADC; Rejection Code: REFS CHECKED/REVIEW.

143. Comm Residues Usa (91). **GENERAL REFEREE REPORTS COMMITTEE ON RESIDUES 104TH AOAC ANNUAL INTERNATIONAL MEETING NEW ORLEANS LOUISIANA USA SEPTEMBER 9-13 1990.** *J Assoc Off Anal Chem* 74 : 149-155.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM MEETING REPORT FOOD RESIDUE METALS ELEMENTS METHODS ORGANOHALOGEN PESTICIDE ORGANONITROGEN PESTICIDE ORGANOPHOSPHORUS PESTICIDE AGRICHEMICAL HAZARDOUS MATERIALS
KEYWORDS: General Biology-Symposia
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KEYWORDS: Food Technology-Evaluations of Physical and Chemical Properties (1970-)
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145. Copeland, A. R. (88). **ORGANOPHOSPHATE RELATED FATALITIES A VIOLATIONAL BIOHAZARD.** *Forensic Sci Int* 39 : 155-162.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM HUMAN INSECTICIDE
KEYWORDS: General Biology-Forensic Science
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KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Hominidae

147. Cox, L., Hermosin, M. C., and Cornejo, J. (93). **Adsorption of methomyl by soils of Southern Spain and soil components.** *Chemosphere* 27: 837-849.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO SPECIES.
The adsorption of methomyl (S-methyl N-(methylcarbamoyloxy) thioacetimidate) by 14 soil samples of Southern Spain with different characteristics has been investigated studying the correlation between adsorption and soil properties and the effect of methomyl concentration and soil/solution ratio on adsorption of methomyl by soils. Adsorption has been expressed as the soil-water distribution coefficient Kd. Kd values slightly decreased when soil/solution ratio and methomyl concentration increased. These values indicated that methomyl is adsorbed weakly in soils. Kd values were compared with the soil properties by simple and multiple regression analysis. A highly significant correlation between Kd and soil organic matter and clay content was observed in every experimental condition. Adsorption of methomyl by clay minerals (two montmorillonites, hectorite, illite and kaolinite) and by humic acid has been investigated as well. The higher adsorption coefficients values obtained with humic acid indicated greater affinity of methomyl molecules for the organic fraction of soils. Kd data obtained with clay minerals indicate that methomyl is adsorbed not only on the external surfaces of the clay minerals but also in the interlamellar space of the swelling minerals.

148. Crescenzi, C., De Corcia a, Passariello, G., Samperi, R., and Turnes Carou Mi (96). **Evaluation of two new examples of graphitized carbon blacks for use in solid-phase extraction cartridges.** *Journal of Chromatography a* 733 : 41-55.

Chem Codes: Chemical of Concern: SZ,MOM,CBF,ADC; Rejection Code: CHEM METHOD.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. The performances of two new examples of graphitized carbon blacks (GCBs), Carbograph 4 and Carbograph 5, filling solid-phase extraction cartridges were evaluated. Compared to an older GCB, Carbograph 1, the two new GCBs exhibited far larger abilities in extracting very polar compounds from both 41 of drinking water and 11 of water containing an amount of humic materials equivalent to 20 mg/l dissolved organic content. Like older GCB material, the new examples of GCBs have on their surfaces anion-exchange adsorption sites. However, Carbograph 5 partly failed to isolate

acidic species from co-extracted non-acidic species by stepwise elution. Moreover, the surface of this sorbent material is more contaminated than those of both Carbograph I and 4 by sites able to bind irreversibly particular adsorbates. The extraction efficiencies of the two new GCBs were also compared with those of two recently introduced polystyrene-divinylbenzene (PS-DVB)-based materials. Recovery data
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150. Crescenzi, C., Di Corcia a, Guerriero, E., and Samperi, R. (97). **Development of a multiresidue method for analyzing pesticide traces in water based on solid-phase extraction and electrospray liquid chromatography mass spectrometry.** *Environmental Science & Technology* 31 : 479-488.

Chem Codes: Chemical of Concern: SZ,MTL,MOM,ADC,CBF; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. The GC technique is still the staple for analyzing pesticide residues in water. However, many of the current-use pesticides are not amenable to GC/MS analysis. As shown recently in some published reports, the LC/MS technique could fill this gap. We developed a sensitive and specific LC/MS method for determining 45 widely used pesticides having a broad range of polarity in water. This method involves passing 4, 2, and 1 L, respectively, of drinking water, groundwater, and river water through a 0.5-g graphitized carbon black (Carbograph 4) cartridge at ca. 100 mL/min. In all cases, recoveries of the analytes were better than 80%, except for carbendazim (76%). The performance of the electrospray/mass spectrometer (ES/MS) detector was optimized by adopting in-glass distilled methanol as the organic modifier and 10 mumol/L trifluoroacetic acid as an additive to the mobile phase. The effects of varying the electrical field in the ES/MS transport region on both sensitivity and
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KEYWORDS: General Biology-Conservation
KEYWORDS: Ecology
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control

152. Cripe, C. R. and Pritchard, P. H. (90). **AQUATIC TEST SYSTEMS FOR STUDYING THE FATE OF XENOBIOTIC.** *Landis, W. G. And W. H. Van Der Schalie (Ed.). Astm (American Testing and Materials) Stp (Special Technical Publications), 1096. Toxicology and Risk Assessment* 13th Symposium, Atlanta, April 16-18, 1989. Vii+378p. Astm: Philadelphia, Pennsylvania, Usa. Maps. Isbn 0-8031-1460-5.; 0 : 29-47.

Chem Codes: Chemical of Concern: PNB,MOM; Rejection Code: FATE.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM MICROORGANISMS TOXICOLOGY MATHEMATICAL MODEL BIOTECHNOLOGY
KEYWORDS: General Biology-Symposia
KEYWORDS: Mathematical Biology and Statistical Methods
KEYWORDS: Ecology
KEYWORDS: Ecology
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-Bioengineering
KEYWORDS: Biophysics-Biocybernetics (1972-)
KEYWORDS: Metabolism-General Metabolism
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Microbiological Apparatus
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Food and Industrial Microbiology-Biodegradation and Biodeterioration
KEYWORDS: Microorganisms-Unspecified

153. Crisp, T. M., Clegg, E. D., Cooper, R. L., Wood, W. P., Anderson, D. G., Baetcke, K. P., Hoffmann, J. L., Morrow, M. S., Rodier, D. J., Schaeffer, J. E., Touart, L. W., Zeeman, M. G., and Patel, Y. M. (98). **Environmental endocrine disruption: An effects assessment and analysis.** *Environmental Health Perspectives* 106 : 11-56.

Chem Codes: Chemical of Concern: SZ,PMB,MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. This report is an overview of the current state of the science relative to environmental endocrine disruption in humans, laboratory testing, and wildlife species. Background information is presented on the field of endocrinology, the nature of hormones, and potential sites for endocrine disruption, with specific examples of chemicals affecting these sites. An attempt is made to present objectively the issue of endocrine disruption, consider working hypotheses, offer opposing viewpoints, analyze the available information, and provide a reasonable assessment of the problem. Emphasis is placed on disruption of central nervous system-pituitary integration of hormonal and sexual behavioral activity, female

and male reproductive system development and function, and thyroid function. In addition, the potential role of environmental endocrine disruption in the induction of breast, testicular, and prostate cancers, as well as endometriosis, is evaluated. The interrelationship of
KEYWORDS: Reproductive System-Pathology
KEYWORDS: Endocrine System-Gonads and Placenta
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health-Public Health Administration and Statistics
KEYWORDS: Hominidae

154. DAUN, R. J. and Ryan, D. L. (96). **MAGNITUDE OF RESIDUES OF METHOMYL IN EDIBLE TISSUES AND MILK OF DAIRY COWS .** *212th American Chemical Society National Meeting, Orlando, Florida, Usa, August 25-29, 1996. Abstracts of Papers American Chemical Society* 212 : Agro 44.

Chem Codes: Chemical of Concern: MOM; Rejection Code: ABSTRACT.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM MEETING ABSTRACT
KEYWORDS: General Biology-Symposia
KEYWORDS: Biochemical Studies-General
KEYWORDS: Food Technology-Meats and Meat by-Products
KEYWORDS: Food Technology-Dairy Products
KEYWORDS: Food Technology-Evaluations of Physical and Chemical Properties (1970-)
KEYWORDS: Reproductive System-Physiology and Biochemistry
KEYWORDS: Toxicology-General
KEYWORDS: Toxicology-Foods
KEYWORDS: Animal Production-Feeds and Feeding
KEYWORDS: Pest Control
KEYWORDS: Bovidae

155. Davila, G. H. (87). **REGIONAL PROGRAM ON CHEMICAL SAFETY RPCS DOCUMENT PRESENTED PAN AMERICAN SANITARY CONFERENCE.** *Pan Am Health Organ Environ Ser* 0 : I-Iv, 1-36.

Chem Codes: Chemical of Concern: PNB,MOM,CBF,ADC; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM POLLUTION WHO
KEYWORDS: General Biology-Institutions
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air

156. Davila, G. H. (87). **REGIONAL PROGRAM ON CHEMICAL SAFETY RPCS DOCUMENT PRESENTED PAN AMERICAN SANITARY CONFERENCE.** *Pan Am Health Organ Environ Ser* 0 : I-Iv, 1-36.

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KEYWORDS: Public Health: Environmental Health-Air

157. De, K. O. K. A and Hiemstra, M. (92). **Optimization, automation, and validation of the solid-phase extraction cleanup and on-line liquid chromatographic determination of N-methylcarbamate pesticides in fruits and vegetables.** *J Aoac (Assoc Off Anal Chem) Int* 75 : 1063-1072.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. A fully automated liquid chromatographic (LC) method was developed for the determination of 21 N-methylcarbamates and 12 of their metabolites. Our previously

developed solid-phase extraction (SPE) cleanup method can now be performed using an automated SPE cleanup apparatus. The cleaned-up extract is injected on-line into the LC carbamate analysis system, which is based on a reversed-phase LC separation, postcolumn hydrolysis of the carbamates on a solid-phase catalyst, reaction of the methylamine formed with o-phthalaldehyde reagent, and fluorescence detection of the derivatives. The optimized method was evaluated. Recovery and repeatability data were collected for 13 representative carbamates and 12 metabolites on 12 different food product types. The reliability of the method in routine analysis of fruit and vegetable samples is demonstrated. Registration of the analytical results of control samples in Shewhart charts during a year of routine analysis has demonstrated
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
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KEYWORDS: Food Technology-Fruits
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KEYWORDS: Pest Control

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KEYWORDS: Food Technology-Evaluations of Physical and Chemical Properties (1970-)
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KEYWORDS: Pest Control

159. De, K. O. K. A, Hiemstra, M., and Vreeker, C. P. (90). **OPTIMIZATION OF THE POSTCOLUMN HYDROLYSIS REACTION ON SOLID PHASES FOR THE ROUTINE HIGH-PERFORMANCE LIQUID CHROMATOGRAPHIC DETERMINATION OF N METHYLCARBAMATE PESTICIDES IN FOOD PRODUCTS.** *Thirteenth International Symposium on Column Liquid Chromatography, Part Ii, Stockholm, Sweden, June 25-30, 1989. J Chromatogr* 507 : 459-472.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM AGRONOMY
KEYWORDS: General Biology-Symposia
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Toxicology-Foods
KEYWORDS: Food and Industrial Microbiology-Food and Beverage Spoilage and Contamination
KEYWORDS: Agronomy-General
KEYWORDS: Pest Control
KEYWORDS: Spermatophyta

160. De, K. O. K. A, Hiemstra, M., and Vreeker, C. P. (90). **OPTIMIZATION OF THE POSTCOLUMN HYDROLYSIS REACTION ON SOLID PHASES FOR THE ROUTINE HIGH-PERFORMANCE LIQUID CHROMATOGRAPHIC DETERMINATION OF N METHYLCARBAMATE PESTICIDES IN FOOD PRODUCTS.** *Thirteenth International Symposium on Column Liquid Chromatography, Part Ii, Stockholm, Sweden, June 25-30, 1989. J Chromatogr* 507 : 459-472.

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KEYWORDS: Food and Industrial Microbiology-Food and Beverage Spoilage and Contamination
KEYWORDS: Agronomy-General
KEYWORDS: Pest Control
KEYWORDS: Spermatophyta

161. De Llasera, M. P. G. and Bernal-Gonzalez, M. (2001). **Presence of carbamate pesticides in environmental waters from the northwest of Mexico: Determination by liquid chromatography.** *Water research [water res.]. Vol. 35, no. 8, pp. 1933-1940. Jun 2001.*

Chem Codes: MOM,CBF,ADC; Rejection Code: SURVEY.
Abstract: A study on the presence of carbamate pesticides, namely aldicarb, aldicarb sulfoxide, baygon, benthiocarb, carbofuran, 3-hydroxycarbofuran, carbaryl, desmedipham, methiocarb, methomyl, thiodicarb, oxamyl, and propham was made in ground and surface waters from an agricultural zone of the Yaqui Valley located in northwest Mexico. Trace determinations were made by liquid chromatography (LC) with post-column fluorescence detection (EPA method 531.1) or LC-diode array UV detection coupled on-line to a solid-phase extraction (SPE) system and using a 13 x 4.6 mm i.d. precolumn and a 150 x 4.6 mm i.d. analytical column, both packed with a C18 silica. Results indicated that the level of contamination with methiocarb was 5.4 mu g/L in a groundwater sample and that for 3-hydroxycarbofuran was 18 mu g/L in a surface water sample. This study provides the basis for a future monitoring program.

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164. Dean Blevins, R., Lee, Morris, and Regan, James D. (77). **Mutagenicity screening of five methyl carbamate insecticides and their nitroso derivatives using mutants of Salmonella typhimurium LT2*1.** *Mutation Research/Fundamental and Molecular Mechanisms of Mutagenesis* 56: 1-6.

Chem Codes: Chemical of Concern: MOM; Rejection Code: BACTERIA.
The mutagenic activity of five methyl carbamate insecticides -- carbaryl, baygon, BUX-Ten, landrin and methomyl -- and their nitroso derivatives were investigated using histidine auxotrophs -- his TA98, his TA100, his TA1535, his TA1537 and his TA1538 -- of Salmonella typhimurium LT2 derived by Ames.The methyl carbamate insecticides did not cause a significant increase in the number of revertant colonies in any of the strains used. In contrast, the nitroso derivatives of the carbamate insecticides greatly increased the number of colonies on plates inoculated with strains his TA100 and his TA1535. We conclude that the nitroso derivatives of the tested methyl carbamate insecticides are potent mutagens; whereas, the parent insecticides are non-mutagenic.

165. Dejonckheere, W., Steurbaut, W., Drieghe, S., Verstraeten, R., and Braeckman, H. (96). **Monitoring of pesticide residues in fresh vegetables, fruits, and other selected food items in Belgium, 1991-1993.** *Journal of Aoac International* 79 : 97-110.

Chem Codes: Chemical of Concern: SZ,PNB,MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. To estimate the exposure of the Belgian population to food contaminated with pesticide residues and to determine what pesticides people are actually consuming, a total diet study-individual approach-was performed. Fourteen kinds of fruits, 22 kinds of vegetables, and 7 other food items (coffee, drinking water, rice, tea, wine, bran, and wheat flour) were selected as major representatives of the Belgian diet. During the 2 years of study (April 1991-March 1993), about 3698 samples were analyzed and 21 163 analyses were performed. The first part of this study demonstrates that no residues are found in 31.3% of leafy vegetables, 72.3% of other vegetables, 51.4% of fruits, and 67.2% of other samples. In particular cases, some critical situations still exist, especially for leafy vegetables. Also, contamination of foreign samples is not easy to determine, because origins are not always traceable.
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Food Technology-General
KEYWORDS: Food Technology-Fruits
KEYWORDS: Food Technology-Cereal Chemistry
KEYWORDS: Food Technology-Malts
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control

166. Dejonckheere, W., Steurbaut, W., Drieghe, S., Verstraeten, R., and Braeckman, H. (96). **Pesticide residue concentrations in the Belgian total diet, 1991-1993.** *Journal of Aoac International* 79 : 520-528.

Chem Codes: Chemical of Concern: SZ,PNB,MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. In the period 1991-1993, an official study was conducted to measure the presence and evaluate the risk of pesticide residues in plantbased food in the Belgian total diet. Positive samples were subjected to one or more culinary treatments (washing, peeling, steaming, or cooking) to determine the decrease of residues in prepared ready-to-eat food. Thus, better estimates of pesticide residues taken up through consumption were determined and compared with toxicological criteria. Washing did not significantly reduce residues. Peeling fruits removed almost all pesticides. The effects of cooking and steaming varied, depending on the type of food and pesticide.
KEYWORDS: Biochemical Studies-General

KEYWORDS: Food Technology-General
KEYWORDS: Food Technology-Evaluations of Physical and Chemical Properties (1970-)
KEYWORDS: Toxicology-Foods
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control

167. Dekker, A. and Houx, N. W. (83). **Simple determination of oxime carbamates in soil and environmental water by high pressure liquid chromatography.** *J Environ Sci Health B 1983;18(3):379-92.* 18: 379-92.

Chem Codes: Chemical of Concern: MOM,ADC; Rejection Code: CHEM METHODS.
ABSTRACT: A method for determining residues of aldicarb, aldicarb sulphoxide, aldoxycarb, oxamyl and methomyl in soil, groundwater and surface water is described. Subsoils were extracted with water and topsoils were extracted with acetone. The aqueous samples were either directly injected after acidification or concentrated by extraction with chloroform. The organic extracts were evaporated to dryness and redissolved in acidified mobile phase. The compounds were detected with a variable wavelength U.V. detector or with a fluorometric detector after a post-column reaction. Compounds within a concentration range from 0.5 ng/ml to 200 micrograms/ml could be determined with a maximum coefficient of variation of 7.5%. Recoveries varied from 77.0% to 98.8%.

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169. Deshpande, S., Shiau, B. J., Wade, D., Sabatini, D. A., and Harwell, J. H. (99). **Surfactant selection for enhancing ex situ soil washing.** *Water Research* 33 : 351-360.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO TOX DATA.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Ex situ soil washing is commonly used for treating contaminated soils by separating the most contaminated fraction of the soil for disposal. Surfactant-enhanced soil washing is being considered with increasing frequency to actually achieve soil-contaminant separation. In this research eight anionic and nonionic surfactants were evaluated for the enhanced soil washing of three different soils contaminated with petroleum hydrocarbons. Enhanced soil washing occurred at surfactant concentrations below and above the CMC indicating the occurrence of both soil rollup and solubilization mechanisms. In certain cases the lower CMC of nonionic surfactants made them attractive candidates while in other cases the lower sorption and higher solubilization potential of select anionic surfactants made them the preferred choice. Surfactant-induced foaming and turbidity are operating considerations that can also impact surfactant selection. When selecting a surfactant for a given soil-con
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Soil Science-General
KEYWORDS: Soil Science-Physics and Chemistry (1970-)

170. Devillers, J., Karcher, W., and Isnard, P. (91). **Graphical display of the fugacity model level I.** *Chemosphere* 23 : 633-642.

Chem Codes: Chemical of Concern: MOM; Rejection Code: MODEL.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. The environmental distribution of 29 organic chemicals was calculated according to the fugacity model level I. The results were graphically analyzed by means to

correspondence factor analysis and minimum spanning tree method. These two complementary multivariate approaches allowed to find structure/environmental fate relationships. The heuristic potency of this approach was discussion in detail.
KEYWORDS: Mathematical Biology and Statistical Methods
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air

171. Dewey, R. E., Siedow, J. N., Timothy, D. H., and Levings, C. S. III (88). **A 13-kilodalton maize mitochondrial protein in E. coli confers sensitivity to Bipolaris maydis toxin.** *Science (washington) [science (wash.).]* 239: 293-295.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO TOX DATA.
Abstract: The Texas male-sterile cytoplasm (cms-T) of maize carries the cytoplasmically inherited trait of male sterility. Mitochondria isolated from cys-T maize are specifically sensitive to a toxin (BmT-toxin) produced by the fungal pathogen Bipolaris maydis , race T, and the carbamate insecticide methomyl. A mitochondrial gene unique to cms-T maize, which produces a 13-kilodalton polypeptide associated with cytoplasmic male sterility, was expressed in Escherichia coli . After addition of BmT-toxin or methomyl, inhibition of whole cell respiration and swelling of spheroplasts were observed in Escherichia coli cultures producing the novel mitochondrial protein; these effects are similar to those observed with isolated cms-T mitochondria. The amino-terminal region of the 13-kilodalton polypeptide appears to be essential for proper interaction with the BmT-toxin and methomyl. These results implicate the 13-kilodalton polypeptide in conferring toxin sensitivity to mitochondria of cms-T maize.

172. Di Corcia a , Crescenzi, C., and Lagana, A. (96). **Evaluation of a method based on liquid chromatography/electrospray/mass spectrometry for analyzing carbamate insecticides in fruits and vegetables.** *Journal of Agricultural and Food Chemistry* 44 : 1930-1938.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: METHODS.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. The feasibility of using reversed-phase liquid chromatography/mass spectrometry (LC) with an electrospray (ES) interface for measuring traces of N-methylcarbamate insecticides in 10 different types of fruits and vegetables was evaluated. Twelve carbamates added to vegetable materials were extracted with methanol by the aid of a homogenizer. After filtration, an aliquot of the homogenizate equivalent to 5 g of the vegetable material was suitably diluted with water and passed through a 1-g Carbograph 1 extraction cartridge. Carbamates were eluted by passing through the cartridge 6 mL of a CH2Cl2/CH3OH (80:20 v/v) mixture. After eluate concentration down to 100 muL, 5 muL of the final extract was injected into the LC column. Recovery of the analytes was better than 80%, irrespective of the type of vegetable matrix to which the analytes were added. Replacement of CH3OH with CH3CN as organic modifier resulted in a significant decrease of the ion signal for carbamates. The sa
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Biophysics-Molecular Properties and Macromolecules
KEYWORDS: Food Technology-Fruits
KEYWORDS: Food Technology-Evaluations of Physical and Chemical Properties (1970-)
KEYWORDS: Food Technology-Preparation
KEYWORDS: Toxicology-Foods
KEYWORDS: Agronomy-Sugar Crops
KEYWORDS: Horticulture-Temperate Zone Fruits and Nuts
KEYWORDS: Horticulture-Small Fruits
KEYWORDS: Horticulture-Vegetables
KEYWORDS: Pest Control
KEYWORDS: Chenopodiaceae
KEYWORDS: Compositae
KEYWORDS: Rosaceae
KEYWORDS: Rutaceae
KEYWORDS: Solanaceae

KEYWORDS: Vitaceae

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174. Di Corcia a and Marchetti, M. (91). **Multiresidue method for pesticides in drinking water using a graphitized carbon black cartridge extraction and liquid chromatographic analysis.** *Anal Chem* 63 : 580-585.

Chem Codes: Chemical of Concern: MOM,CBF,ADC; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. A general liquid-solid extraction procedure for the isolation of pesticides from groundwater and drinking water for high-performance liquid chromatography (HPLC) is presented. This simple and rapid procedure involved passing a 2-L sample through a 250-mg graphitized carbon black (Carbopack B) cartridge at a flow rate of 150-160 mL/min. By taking advantage of the presence of positively charged active centers on the Carbopack B surface, a stepwise elution system allowed the complete separation of base-neutral pesticides from acidic one. After partial solvent removal, the components in the two fractions were separated and quantified by gradient elution, reversed-phase HPLC with ultraviolet (UV) detection. The performance of the Carbopack cartridge was compared with that of a 500-mg C-18 bonded silica cartridge. With the Carbopack cartridge, the grand mean measurement accuracy of the 35 pesticides considered was 95%. With the C-18 cartridge, the grand mean measurement accura
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KEYWORDS: Biochemical Studies-General
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KEYWORDS: Pest Control

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KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control

176. Di, H. J. and Aylmore, L. Ag (97). **Modeling the probabilities of groundwater contamination by pesticides.** *Soil Science Society of America Journal* 61 : 17-23.

Chem Codes: Chemical of Concern: SZ,MTL,MOM; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Field soils show significant spatial variations in properties, such as organic matter content, bulk density, and moisture content, that can affect the mobility and persistence and thus fate of organic pesticides in the soil environment. A simple model incorporating the variations in soil and pesticide parameters has been developed to assess the groundwater contamination potential of pesticides. The model is based on linear, equilibrium, and reversible sorption, first-order degradation, and steady piston flow, and allows the unsaturated soil zone to be divided into a number of layers of different thickness and properties. For each input parameter, 500 random data were generated from normal distributions that characterize the variability of the parameters. The fate of 29 pesticides were assessed using soil and environmental conditions of the Swan Coastal Plains of Western Australia and pesticide properties reported in the literature. The predicted pesticide residue fracti
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KEYWORDS: Biophysics-Biocybernetics (1972-)
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Soil Science-Physics and Chemistry (1970-)
KEYWORDS: Soil Science-Fertility and Applied Studies (1970-)
KEYWORDS: Pest Control

177. Dieter, H. H. (92). **GERMAN DRINKING WATER REGULATIONS PESTICIDES AND AXIOM OF CONCERN.** *Environ Manage* 16 : 21-32.

Chem Codes: Chemical of Concern: PNB,EDT,SZ,MTL,MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM HUMAN POLLUTION CONTROL REGULATION TOXICITY PREVENTION PROTECTIONISM FEDERAL CONTROL ACT PUBLIC HEALTH RISK MANAGEMENT GROUNDWATER COMMISSION ECC STANDARD GERMANY
KEYWORDS: General Biology-Institutions
KEYWORDS: General Biology-Conservation

KEYWORDS: Ecology
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health-Public Health Administration and Statistics
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Public Health: Epidemiology-Communicable Diseases
KEYWORDS: Public Health: Disease Vectors-Inanimate
KEYWORDS: Public Health: Microbiology
KEYWORDS: Pest Control
KEYWORDS: Hominidae

178. Dieter, H. H. (92). **GERMAN DRINKING WATER REGULATIONS PESTICIDES AND AXIOM OF CONCERN.** *Environ Manage* 16 : 21-32.

Chem Codes: Chemical of Concern: PNB,EDT,SZ,MTL,MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM HUMAN POLLUTION CONTROL REGULATION TOXICITY PREVENTION PROTECTIONISM FEDERAL CONTROL ACT PUBLIC HEALTH RISK MANAGEMENT GROUNDWATER COMMISSION ECC STANDARD GERMANY
KEYWORDS: General Biology-Institutions
KEYWORDS: General Biology-Conservation
KEYWORDS: Ecology
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health-Public Health Administration and Statistics
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Public Health: Epidemiology-Communicable Diseases
KEYWORDS: Public Health: Disease Vectors-Inanimate
KEYWORDS: Public Health: Microbiology
KEYWORDS: Pest Control
KEYWORDS: Hominidae

179. Dietrich, R. F. and Ryan, D. L. (97). **Metabolism of Methomyl by Lactating Goats and Laying Hens. 2. Isolation and Identification of Novel Metabolites.** *In: 213th Natl.Meet.of the Am.Chem.Soc., Apr.13-17, 1997, San Francisco, CA, Abstr.Pap.Am.Chem.Soc.* 213: Agro 88.

Chem Codes: Chemical of Concern: MOM; Rejection Code: ABSTRACT.

180. Dong, M. H. , Krieger, R. I., and Ross, J. H. (1992Nov). **Calculated reentry interval for table grape harvesters working in California vineyards treated with methomyl.** *Bull Environ Contam Toxicol 1992 Nov;49(5):708-14.* 49: 708-714.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.

181. Dorange, J. L., Aranda, G., Cornu, A., and Dulieu, H. (83). **Genetic toxicity of methyl methanethiosulfonate on Salmonella typhimurium, Saccharomyces cerevisiae and Nicotiana tabacum.** *Mutation Research Letters* 120: 207-217.

Chem Codes: Chemical of Concern: MOM; Rejection Code: BACTERIA.
The genetic toxicity of methyl methanethiosulfonate (MMT), a hydrolytic derivative of the insecticide methomyl, or lannate (Du Pont), was studied in Salmonella typhimurium, Saccharomyces cerevisiae and Nicotiana tabacum. At low concentrations, a lethal action was observed in all 3 models. Nuclear genetic effects of the product were not detected on the Xanthi X NC 95 hybrid of N. tabacum or on the diploid strain D7 of S. cerevisiae. At the cytoplasmic level, an effect on chloroplasts was observed on tabaco, but MMT did not induced cytoplasmic 'petites' in yeast. Ames tests with and without metabolic activations by S9 mix and/or fecalase were negative. MMT cannot be considered to be mutagenic on these models; consequently it is unlikely to be genotoxic in man, although these experiments do not exclude eventual co-genetic effects.

182. Dourson, M. L. and Lu, F. C. (95). **Safety/risk assessment of chemicals compared for different expert groups.** *Biomedical and Environmental Sciences* 8 : 1-13.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: RISK ASSESSMENT.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Two sets of 65 risk/safety assessments are compared. These assessments, mostly for pesticide chemicals, were developed by the World Health Organization (WHO) and the U.S. Environmental Protection Agency (EPA) at different times, often with different toxicity data, and with slightly different methods. Despite these differences, 38 sets of assessments give values that are within a 3-fold range of each other; 18 of these 38 are essentially identical (when rounded to one digit of precision), although not always for the same reasons. An additional 20 sets give values that lie within a 30-fold range; 6 sets lie within a 300-fold range; and the bromomethane ADI and RfD are 700-fold apart. In addition, on average the EPA values are lower than the WHO numbers. These comparisons are discussed in relationship to a developing world-wide consensus that the methods for evaluating the safety/risks from various chemicals should be more consistent and the resulting assessments should be
KEYWORDS: General Biology-Institutions
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Miscellaneous
KEYWORDS: Pest Control
KEYWORDS: Hominidae

183. Dourson, M. L. and Lu, F. C. (95). **Safety/risk assessment of chemicals compared for different expert groups.** *Biomedical and Environmental Sciences* 8 : 1-13.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: RISK ASSESSMENT.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Two sets of 65 risk/safety assessments are compared. These assessments, mostly for pesticide chemicals, were developed by the World Health Organization (WHO) and the U.S. Environmental Protection Agency (EPA) at different times, often with different toxicity data, and with slightly different methods. Despite these differences, 38 sets of assessments give values that are within a 3-fold range of each other; 18 of these 38 are essentially identical (when rounded to one digit of precision), although not always for the same reasons. An additional 20 sets give values that lie within a 30-fold range; 6 sets lie within a 300-fold range; and the bromomethane ADI and RfD are 700-fold apart. In addition, on average the EPA values are lower than the WHO numbers. These comparisons are discussed in relationship to a developing world-wide consensus that the methods for evaluating the safety/risks from various chemicals should be more consistent and the resulting assessments should be
KEYWORDS: General Biology-Institutions
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Miscellaneous
KEYWORDS: Pest Control
KEYWORDS: Hominidae

184. Dowling, K. and Lemley, A. T. (89). **DEGRADATION AND TRANSPORT OF ETHOPROP AND METHOMYL IN SOIL-WATER SYSTEMS.** *198th Acs (American Chemical Society) National Meeting, Miami Beach, Florida, Usa, September 10-15, 1989. Abstr Pap Am Chem Soc* 198 : Agro 93.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM ABSTRACT NEMATICIDE INSECTICIDE TRIAZINE HERBICIDE MATHEMATICAL MODEL LEACHING
KEYWORDS: General Biology-Symposia
KEYWORDS: Mathematical Biology and Statistical Methods
KEYWORDS: Ecology
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Agronomy-Weed Control

KEYWORDS: Soil Science-Physics and Chemistry (1970-)
KEYWORDS: Phytopathology-Disease Control
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control

185. Dowling, K. C., Costella, R. G., and Lemley, A. T. (94). **MODELING THE MOVEMENT OF A RAPIDLY DEGRADING SOLUTE METHOMYL IN DYNAMIC SOIL-WATER SYSTEMS.** *Honeycutt, R. C. And D. J. Schabacker (Ed.). Mechanisms of Pesticide Movement Into Ground Water* Selected Papers Presented at the American Chemical Society Meeting, Atlanta, Georgia, Usa, April 18, 1991. Xv+189p. Lewis Publishers Inc.: Chelsea, Michigan, Usa. Isbn 0-87371-926-3.; 0 : 101-115.

Chem Codes: Chemical of Concern: MOM,ADC; Rejection Code: MODEL, NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER MEETING PAPER CARBAMATE INSECTICIDE S-METHYL N-METHYL-CARBAMOYLOXY THIOACETIMIDATE INSECTICIDE DEGRADATION INSECTICIDE SORPTION ORGANIC CARBON SOIL ALDICARB ETHOPROP TRIAZINE HERBICIDE
KEYWORDS: Mathematical Biology and Statistical Methods
KEYWORDS: Ecology
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-Biocybernetics (1972-)
KEYWORDS: Movement (1971-)
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Soil Science-Physics and Chemistry (1970-)
KEYWORDS: Soil Science-Fertility and Applied Studies (1970-)

186. Dowling, K. C., Costella, R. G., and Lemley, A. T. (94). **MODELING THE MOVEMENT OF A RAPIDLY DEGRADING SOLUTE METHOMYL IN DYNAMIC SOIL-WATER SYSTEMS.** *Honeycutt, R. C. And D. J. Schabacker (Ed.). Mechanisms of Pesticide Movement Into Ground Water* Selected Papers Presented at the American Chemical Society Meeting, Atlanta, Georgia, Usa, April 18, 1991. Xv+189p. Lewis Publishers Inc.: Chelsea, Michigan, Usa. Isbn 0-87371-926-3.; 0 : 101-115.

Chem Codes: Chemical of Concern: MOM,ADC; Rejection Code: MODEL, NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER MEETING PAPER CARBAMATE INSECTICIDE S-METHYL N-METHYL-CARBAMOYLOXY THIOACETIMIDATE INSECTICIDE DEGRADATION INSECTICIDE SORPTION ORGANIC CARBON SOIL ALDICARB ETHOPROP TRIAZINE HERBICIDE
KEYWORDS: Mathematical Biology and Statistical Methods
KEYWORDS: Ecology
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-Biocybernetics (1972-)
KEYWORDS: Movement (1971-)
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Soil Science-Physics and Chemistry (1970-)
KEYWORDS: Soil Science-Fertility and Applied Studies (1970-)

187. Driskell, W. J., Groce, D. F., Hill, R. H. Jr, and Birky, M. M. (91). **Methomyl in the blood of a pilot who crashed during aerial spraying.** *Journal of analytical toxicology [j. Anal. Toxicol.]* 15: 339-340.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
Abstract: An aerial-spray pilot died when his aircraft crashed while he was spraying methomyl. We measured the pesticide in his blood by gas chromatography with flame photometric detection and confirmed the results by mass spectrometry with direct liquid injection through a liquid chromatography interface. The whole blood methomyl concentration was 570 ng/mL.

188. Dutton, F. E., Gemrich, E. G., Lee, B. L., Nelson, S. J., Parham, P. H., and Seaman, W. J. (81). **Insecticidal Phosphoramididothio Derivatives of the Carbamate Methomyl.** *J.Agric.Food Chem.* 29: 1111-1114.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO CONC.

189. Eagle, D. J., Jones, J. Lo, Jewell, E. J., and Paxton, R. P. (92). **DETERMINATION OF PESTICIDES BY GAS CHROMATOGRAPHY AND HIGH-PRESSURE LIQUID CHROMATOGRAPHY.** *Smith, K. A. (Ed.). Books in Soils, Plants, and the Environment: Soil Analysis: Modern Instrumental Techniques, Second Edition. Ix+659. Marcel Dekker, Inc.: New York, New York, Usa* Basel, Switzerland. Illus. Isbn 0-8247-8355-7.; 0 : 547-600.

Chem Codes: Chemical of Concern: SZ,MOM,ADC,CBF; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM ANALYTICAL METHOD SOIL SAMPLE PREPARATION DATA HANDLING IDENTIFICATION HERBICIDES FUNGICIDES ACARICIDES INSECTICIDES
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Toxicology-General
KEYWORDS: Soil Science-General
KEYWORDS: Pest Control

190. Eagle, D. J., Jones, J. Lo, Jewell, E. J., and Paxton, R. P. (92). **DETERMINATION OF PESTICIDES BY GAS CHROMATOGRAPHY AND HIGH-PRESSURE LIQUID CHROMATOGRAPHY.** *Smith, K. A. (Ed.). Books in Soils, Plants, and the Environment: Soil Analysis: Modern Instrumental Techniques, Second Edition. Ix+659. Marcel Dekker, Inc.: New York, New York, Usa* Basel, Switzerland. Illus. Isbn 0-8247-8355-7.; 0 : 547-600.

Chem Codes: Chemical of Concern: SZ,MOM,ADC,CBF; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM ANALYTICAL METHOD SOIL SAMPLE PREPARATION DATA HANDLING IDENTIFICATION HERBICIDES FUNGICIDES ACARICIDES INSECTICIDES
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Toxicology-General
KEYWORDS: Soil Science-General
KEYWORDS: Pest Control

191. Ecobichon, D. J. and Joy, R. M. (94). **Pesticides and Neurological Diseases 2nd Edition.** *In: D.J.Ecobichon and R.M.Joy, Pesticides and Neurological Diseases, 2nd Edition, CRC Press Inc., Boca Raton, FL* 381 p.

Chem Codes: Chemical of Concern: MOM; Rejection Code: REFS CHECKED/REVIEW.

192. Edmiston, S. and Maddy, K. T. (87). **SUMMARY OF ILLNESSES AND INJURIES REPORTED IN CALIFORNIA USA BY PHYSICIANS IN 1986 AS POTENTIALLY RELATED TO PESTICIDES.** *Vet Hum Toxicol* 29 : 391-397.

Chem Codes: Chemical of Concern: RSM,MOM,CBF,ADC,CST; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM HUMAN OCCUPATIONAL EXPOSURE
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health-Public Health Administration and Statistics
KEYWORDS: Public Health: Environmental Health-Occupational Health
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Public Health: Epidemiology-Organic Diseases and Neoplasms
KEYWORDS: Pest Control
KEYWORDS: Hominidae

193. Edmiston, S. and Maddy, K. T. (87). **SUMMARY OF ILLNESSES AND INJURIES REPORTED IN CALIFORNIA USA BY PHYSICIANS IN 1986 AS POTENTIALLY RELATED TO PESTICIDES.** *Vet Hum Toxicol* 29 : 391-397.

Chem Codes: Chemical of Concern: RSM,MOM,CBF,ADC,CST; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM HUMAN OCCUPATIONAL EXPOSURE
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health-Public Health Administration and Statistics
KEYWORDS: Public Health: Environmental Health-Occupational Health
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Public Health: Epidemiology-Organic Diseases and Neoplasms
KEYWORDS: Pest Control
KEYWORDS: Hominidae

194. Ehler, L. E. (2004). **An evaluation of some natural enemies of Spodoptera exigua on sugarbeet in northern California.** *Biocontrol, 49 (2) pp. 121-135, 2004.*

Chem Codes: Chemical of Concern: MOM; Rejection Code: BIOLOGICAL TOXICANT.
Abstract: Eggs and small to medium-sized larvae of Spodoptera exigua (Hu(dieresis)bner) (Lepidoptera: Noctuidae) are exploited by a complex of natural enemies in spring-planted sugarbeet fields in northern California. Field studies revealed that predation on sentinel egg masses ranged from (similar to)20 to 100%/egg mass; predation rate was lowest in fields previously treated with methomyl and highest in non-treated fields. Predators typically destroyed all of the eggs in a given egg mass; percentage predation per egg mass was density independent (spatial context). Survival of eggs (to neonate larvae) in cages that excluded predators ranged from (similar to)80 to >90%. The egg-predator guild consisted of adults and nymphs of Orius tristicolor (White)(Anthocoridae), Nabis americoferus Carayon (Nabidae), Lygus hesperus Knight (Miridae), and Geocoris punctipes (Say) (Geocoridae); larvae of Chrysoperla carnea (Stephens) (Chrysopidae); and adults of Collops vittatus (Say) (Melyridae). Laboratory evaluation revealed that large larvae of C. carnea and the adults of the other species (except for O. tristicolor) could consume 100 eggs of S. exigua in a 48 h period. The parasite guild associated with small and medium-sized larvae consisted of three species: Hyposoter exiguae (Viereck) and Pristomerus spinator (F.) (Ichneumonidae), both larval endoparasites; and Chelonus insularis Cresson (Braconidae), an egg-larval endoparasite. Parasitization in field samples ranged from (similar to)30 to (similar to)65%. Small and medium-sized larvae were also infected with a nuclear polyhedrosis virus (NPV); rates of NPV infection ranged from 0 to (similar to)35% in field samples. These results are consistent with anecdotal evidence that natural enemies, primarily generalist predators, are largely responsible for maintaining populations of S. exigua at relatively low levels in nontreated sugarbeet fields.

195. Ekins, B. R. and Geller, R. J. (94). **Methomyl-induced carbamate poisoning treated with pralidoxime chloride.** *Western journal of medicine [west. J. Med.]* 161: 68-70.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
Abstract: Methomyl is a carbamate insecticide. We review data regarding pralidoxime chloride and carbamate poisonings and present a case of an accidental ingestion of an unknown pesticide in a middle-aged man who had classic muscarinic and nicotinic symptoms consistent with an organophosphate insecticide exposure. Treatment with intravenous atropine was partially successful, but prominent nicotinic symptoms suggested the need for pralidoxime chloride. This was noticeably effective and immediately reversed the nicotinic toxicity. We hope to clarify the usefulness and safety of pralidoxime in cases of carbamate poisoning.

196. Ekstrom, G. and Akerblom, M. (90). **PESTICIDE MANAGEMENT IN FOOD AND WATER SAFETY INTERNATIONAL CONTRIBUTIONS AND NATIONAL APPROACHES.** *Ware, G. W. (Ed.). Reviews of Environmental Contamination and Toxicology, Vol. 114. Ix+171p. Springer-Verlag New York Inc.: New York, New York, Usa* Berlin, West Germany. Illus. Isbn 0-387-97207-2; Isbn 3-540-97207-2.; 0 : 23-56.

Chem Codes: Chemical of Concern: SZ,MTL,MOM,CBF,ADC; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM REVIEW INSECTICIDES HERBICIDES

FUNGICIDES HUMAN CANCER RISK
KEYWORDS: General Biology-Institutions
KEYWORDS: Biochemical Studies-General
KEYWORDS: Food Technology-General
KEYWORDS: Toxicology-Foods
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Agronomy-Weed Control
KEYWORDS: Phytopathology-Disease Control
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Hominidae

197. Ekstrom, G. and Akerblom, M. (90). **PESTICIDE MANAGEMENT IN FOOD AND WATER SAFETY INTERNATIONAL CONTRIBUTIONS AND NATIONAL APPROACHES.** *Ware, G. W. (Ed.). Reviews of Environmental Contamination and Toxicology, Vol. 114. Ix+171p. Springer-Verlag New York Inc.: New York, New York, Usa* Berlin, West Germany. Illus. Isbn 0-387-97207-2; Isbn 3-540-97207-2.; 0 : 23-56.

Chem Codes: Chemical of Concern: SZ,MTL,MOM,CBF,ADC; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM REVIEW INSECTICIDES HERBICIDES FUNGICIDES HUMAN CANCER RISK
KEYWORDS: General Biology-Institutions
KEYWORDS: Biochemical Studies-General
KEYWORDS: Food Technology-General
KEYWORDS: Toxicology-Foods
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Agronomy-Weed Control
KEYWORDS: Phytopathology-Disease Control
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Hominidae

198. El-Sayed, E. I., Mohanna, A. H., and Abdel-Sattar, M. M. (83). **Interaction of Insecticide Mixtures on Parental and Resistant Strains of the Egyptian Cotton Leafworm, Spodoptera littoralis (Boisd.).** *Bull.Entomol.Soc.Egypt* 13: 9-15.

Chem Codes: EcoReference No.: 73689
User Define 2: WASHT,CORE
Chemical of Concern: MOM,PHSL,CYP,EN; Rejection Code: MIXTURE.

199. El-Sayed, M. A., El-Shanshoury, A. R., Swelim, M. A., and El-Salam, S. Sa (93). **Microbiological and physicochemical properties of carbamate insecticides treated soil.** *J Agron Crop Sci* 170 : 217-223.

Chem Codes: Chemical of Concern: MOM; Rejection Code: BACTERIA.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Treatment of clay loam soil with carbaryl (sevin), thiodicarb (larvin) and methomyl (lannate) at field and 10 folds the recommended doses showed a variable effect on population of total bacteria, azotobacters and nitrifying bacteria, in addition to the soil content of total soluble salts; the effect differed according to the insecticide and the dose level. The bacterial population was significantly increased in the first five days of treatment, then a decrease was recorded. The increase in the microbial population and total soluble salts were proportion to the levels of the insecticides. Moreover, supplementation of glucose to the soil caused substantial increase over that in the insecticide and/or glucose free soils.
KEYWORDS: Biochemical Studies-General

KEYWORDS: Biochemical Studies-Minerals
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Physiology and Biochemistry of Bacteria
KEYWORDS: Soil Microbiology
KEYWORDS: Soil Science-Physics and Chemistry (1970-)
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Bacteria-General Unspecified (1992-)
KEYWORDS: Azotobacteraceae (1992-)

200. El-Sherif, A. F., Shaaban, A. M., Sobeiha, A. K., El-Zemaity, M. S., and Amin, A. H. (**Effect Of Methomyl And Pyridaphenthion On Some Micronutritional Constituents Of Lettuce And Bean Plants.**

Chem Codes: Chemical of Concern: Cu; Rejection Code: HUMAN HEALTH.
biochemical methods-minerals/ biochemical studies-general/ biochemical studies-minerals/ toxicology-foods, food residues, additives and preservatives/ toxicology-environmental and industrial toxicology/ plant physiology, biochemistry and biophysics-chemical constituents/ horticulture-vegetables/ phytopathology-nonparasitic diseases/ pest control, general/ pesticides/ herbicides/ economic entomology-chemical and physical control, general/ apparatus/ compositae/ leguminosae/ hominidae biosis copyright: biol abs. rrm zinc manganese iron copper depressive effect insecticide dosage human nutritional consumption

201. Eldefrawi, M. E., Eldefrawi, A. T., Anis, N. A., Rogers, K. R., Wong, R. B., and Valdes, J. J. (95). **FIBER-OPTIC IMMUNOSENSORS FOR DETECTION OF PESTICIDES.** *Nelson, J. O., A. E. Karu and R. B. Wong (Ed.). Acs Symposium Series, 586. Immunoanalysis of Agrochemicals: Emerging Technologies* 207th National Meeting of the American Chemical Society, San Diego, California, Usa, March 13-17, 1994. Xi+366p. American Chemical Society: Washington, Dc, Usa. Isbn 0-8412-3149-4.; 0 : 197-209.

Chem Codes: Chemical of Concern: MOM; Rejection Code: METHODS, HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER MEETING PAPER HUMAN RELEVANCE POLYMERS ANTIBODIES ENVIRONMENTAL POLLUTION TOXICITY CONTAMINATION IMMUNOASSAY
KEYWORDS: General Biology-Symposia
KEYWORDS: General Biology-Information
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biochemical Studies-Proteins
KEYWORDS: Biochemical Studies-Carbohydrates
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Biophysics-Bioengineering
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Immunology and Immunochemistry-General
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control
KEYWORDS: Hominidae

202. Elsebae, Ali A. (**Enzyme activity as a biomarker for shrimp and artemia exposure to insecticides.** 17: 417-428 CODEN: ALSEEF; ISSN: 1010-1098.

Chem Codes: Chemical of Concern: CHLOR; Rejection Code: IN VITRO.
A comparison was held between the in vitro effect of the 6 insecticides: fenitrothion, malathion, chlorpyrifos, methomyl, cypermethrin, and endosulfan on 5 enzymes: acetylcholine esterase (AChE), monoamine oxidase (MAO), alk. phosphatase (ALK), acid phosphatase, and total ATPase, in 3 successive larval states of the shrimp Penaeus japonicus and 4 strains of its biofeed Artemia salina. The results showed that AChE, ALK, and total ATPase enzymes showed a concn.-dependent inhibitory response to the tested insecticides particularly for the young PL9 postlarval shrimp. On the other hand, all 5 enzymes from Artemia were appreciably inhibited by the 6 insecticides according to their mode and site of toxic action. This variation in the sensitivity of the

shrimp and its biofeed Artemia should be considered in the aquaculture farming for mass rearing of the shrimp. The enzymes which are responsive to certain groups of chem. insecticides can be suggested as biomarkers for exposure to these compds. when present as environmental pollutants.

203. Erdmann, F. , Brose, C., and Schuetz, H. (90). **A TLC screening program for 170 commonly used pesticide using the corrected Rf value (Rcf value).** *Int J Leg Med* 104 : 25-32.

Chem Codes: Chemical of Concern: SZ,PNB,MOM,ADC,CBF; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. This article reports TLC data (corrected Rf values; Rfc values) of 170 commonly used pesticides which are regularly encountered in toxicological analysis. Silica gel was used as the stationary phase and three binary systems were chosen as solvents.
KEYWORDS: General Biology-Forensic Science
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Toxicology-General
KEYWORDS: Pest Control

204. Erdmann, F. , Brose, C., and Schuetz, H. (90). **A TLC screening program for 170 commonly used pesticide using the corrected Rf value (Rcf value).** *Int J Leg Med* 104 : 25-32.

Chem Codes: Chemical of Concern: SZ,PNB,MOM,ADC,CBF; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. This article reports TLC data (corrected Rf values; Rfc values) of 170 commonly used pesticides which are regularly encountered in toxicological analysis. Silica gel was used as the stationary phase and three binary systems were chosen as solvents.
KEYWORDS: General Biology-Forensic Science
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Toxicology-General
KEYWORDS: Pest Control

205. Everett, W. R. and Rechnitz, G. A. (99). **Enzyme-based electrochemical biosensors for determination of organophosphorous and carbamate pesticides.** *Analytical Letters* 32 : 1-10.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. A mini review of enzyme-based electrochemical biosensors for inhibition analysis of organophosphorous and carbamate pesticides is presented. Discussion includes the most recent literature to present advances in detection limits, selectivity and real sample analysis. Recent reviews on the monitoring of pesticides and their residues suggest that the classical analytical techniques of gas and liquid chromatography are the most widely used methods of detection. These techniques, although very accurate in their determinations, can be quite time consuming and expensive and usually require extensive sample clean up and pre-concentration. For these and many other reasons, the classical techniques are very difficult to adapt for field use. Numerous researchers, in the past decade, have developed and made improvements on biosensors for use in pesticide analysis. This mini review will focus on recent advances made in enzyme-based electrochemical biosensors for the determinations o
KEYWORDS: Methods
KEYWORDS: Methods
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Biophysics-Bioengineering
KEYWORDS: External Effects-Electric
KEYWORDS: Enzymes-Methods
KEYWORDS: Enzymes-Chemical and Physical
KEYWORDS: Toxicology-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control

206. Everett, W. R. and Rechnitz, G. A. (99). **Enzyme-based electrochemical biosensors for determination of organophosphorous and carbamate pesticides.** *Analytical Letters* 32 : 1-10.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. A mini review of enzyme-based electrochemical biosensors for inhibition analysis of organophosphorous and carbamate pesticides is presented. Discussion includes the most recent literature to present advances in detection limits, selectivity and real sample analysis. Recent reviews on the monitoring of pesticides and their residues suggest that the classical analytical techniques of gas and liquid chromatography are the most widely used methods of detection. These techniques, although very accurate in their determinations, can be quite time consuming and expensive and usually require extensive sample clean up and pre-concentration. For these and many other reasons, the classical techniques are very difficult to adapt for field use. Numerous researchers, in the past decade, have developed and made improvements on biosensors for use in pesticide analysis. This mini review will focus on recent advances made in enzyme-based electrochemical biosensors for the determinations o
KEYWORDS: Methods
KEYWORDS: Methods
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Biophysics-Bioengineering
KEYWORDS: External Effects-Electric
KEYWORDS: Enzymes-Methods
KEYWORDS: Enzymes-Chemical and Physical
KEYWORDS: Toxicology-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control

207. Falck, G. C-M, Hirvonen, A., Scarpato, R., Saarikoski, S. T., Migliore, L., and Norppa, H. (**Micronuclei in blood lymphocytes and genetic polymorphism for GSTM1, GSTT1 and NAT2 in pesticide-exposed greenhouse workers.**

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. The frequency of micronuclei (MN) in cultured peripheral lymphocytes was used as a biomarker of genotoxic effects in 34 Italian pesticide-exposed greenhouse workers and 33 unexposed referents matched with the exposed workers for age and smoking habits. The possible influence of the genetic polymorphisms of xenobiotic metabolizing enzymes glutathione S-transferase M1 (GSTM1), T1 (GSTT1), and N-acetyltransferase 2 (NAT2) was also evaluated. To restrict the analysis primarily to cells that have div 0.001). Higher mean MNCs frequencies (per 1000 cells) were detected among exposed smokers (9.0 at0.5 mug/ml BrdU and 7.8 at 1 mug/ml BrdU) than in smoking referents (6.3 and 5.9, respectively). In multiple regression analysis controlling for age, sex, smoking and genotypes, a significant elevation of MNC frequency (P = 0.004 at 1 mug/ml BrdU; P = 0.052 at 0.5 mug/ml BrdU) was observed in greenhouse workers with a work history of extensive pesticide spraying (n = 17). Increased MN
KEYWORDS: Genetics and Cytogenetics-Human
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Enzymes-General and Comparative Studies
KEYWORDS: Blood
KEYWORDS: Immunology and Immunochemistry-General
KEYWORDS: Pest Control
KEYWORDS: Hominidae

208. Famiglini, G., Trufelli, H., Pierini, E., De Simoni, E., Mangani, F., and Cappiello, A. (2003Sep-Oct). **Comparison of solid-phase extraction and micro-solid-phase extraction for liquid chromatography/mass spectrometry analysis of pesticides in water samples.** *J Aoac Int 2003 Sep-Oct;86(5):941-6.* 86: 941-6.

Chem Codes: Chemical of Concern: MOM,CBF; Rejection Code: NO SPECIES.
ABSTRACT: Our recent on-line solid-phase extraction (SPE) device for micro-liquid chromatography, known as micro-solid-phase extraction (microSPE), was compared with traditional SPE for the analysis, from aqueous samples, of 4 pesticides belonging to different classes. Two different kinds of adsorbents, C18 and graphitized carbon black, were tested. A 2-stage ion trap mass spectrometer, equipped with homemade microflow electrospray ion (ESI) source, was used. Detection limits with a signal-to-noise ratio of 3:1 for both extraction methods were in the range of 0.1 microg/L for all compounds. However, better recoveries were obtained when microSPE traps were used.

209. Fan, A. M. and Jackson, R. J. (89). **PESTICIDES AND FOOD SAFETY.** *Regul Toxicol Pharmacol* 9 : 158-174.

Chem Codes: Chemical of Concern: SZ,PNB,MTL,MOM,ADC; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM ENVIRONMENTAL CONTAMINATION FOOD RESIDUES CARCINOGENS REGULATORY AGENCY FDA FOOD INDUSTRY 1 CROP INDUSTRY ENVIRONMENTAL SURVEILLANCE
KEYWORDS: General Biology-Institutions
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Food Technology-General
KEYWORDS: Food Technology-Evaluations of Physical and Chemical Properties (1970-)
KEYWORDS: Food Technology-Preparation
KEYWORDS: Toxicology-General
KEYWORDS: Toxicology-Foods
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis
KEYWORDS: Public Health-Public Health Administration and Statistics
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Public Health: Epidemiology-Organic Diseases and Neoplasms

210. Fan, A. M. and Jackson, R. J. (89). **PESTICIDES AND FOOD SAFETY.** *Regul Toxicol Pharmacol* 9 : 158-174.

Chem Codes: Chemical of Concern: SZ,PNB,MTL,MOM,ADC; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM ENVIRONMENTAL CONTAMINATION FOOD RESIDUES CARCINOGENS REGULATORY AGENCY FDA FOOD INDUSTRY 1 CROP INDUSTRY ENVIRONMENTAL SURVEILLANCE
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KEYWORDS: Public Health-Public Health Administration and Statistics
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Public Health: Epidemiology-Organic Diseases and Neoplasms

211. Farag, A. B. and El-Shahawi, M. S. (91). **Removal of organic pollutants from aqueous solution: V. Comparative study of the extraction, recovery and chromatographic separation of some organic insecticides using unloaded polyurethane from columns.** *J Chromatogr* 552 : 371-380.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO SPECIES.

ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. The concentration of dissolved insecticides in aqueous media was determined by chromatographic separation on polyurethane foam columns. The results of primary screening tests on the removal of insecticides by the unloaded polyurethane foam indicated that a reasonable percentage of the insecticides was retained on the foam. Therefore attempts were made to extract these compounds from aqueous media using foam columns. Various parameters affecting the retention and separation of these compounds were studied, including temperature, flow-rate, pH, insecticide concentration, shaking time, sample volume and eluting solvent. The complete separation and quantitative recovery of these foam compounds from the foam with acetone in a Soxhlet extractor were achieved. The method can be used to preconcentrate insecticides in tap water and modified to determine dissolved insecticides in industrial and natural waters. Polyurethane foam has a good capacity for use when large volume sample
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control

212. Farre, M., Fernandez, J., Paez, M., Granada, L., Barba, L., Gutierrez, H. M., Pulgarin, C., and Barcelo, D. (2002Apr). **Analysis and toxicity of methomyl and ametryn after biodegradation.** *Anal Bioanal Chem 2002 Apr;373(8):704-9. Epub 2002 Jul 25.* 373: 704-9.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO SPECIES.
ABSTRACT: The controlled biodegradation of ametryn and methomyl has been performed, in accordance with the OECD Zahn-Wellens/EMPA procedure, by use of an enriched mixture of activated sludge collected from three domestic waste-water-treatment plants (WWTP). During the process concentrations of ametryn and methomyl in the water samples were isolated by solid-phase extraction (SPE); recovery rates were 98.9 and 93.2 for methomyl and ametryn, respectively. Liquid chromatography-mass spectrometry (LC-MS) was used to determine final pesticide concentrations and for metabolite identification.The efficiency of aerobic biodegradation of ametryn and methomyl was evaluated by measuring both the decrease in the concentration of the pesticides and global properties such as the chemical oxygen demand (COD). The acute toxicity of ametryn and methomyl was evaluated by use of the ToxAlert100 biological test, which is based on inhibition of the bioluminescence of Vibrio fischeri. There was significant correlation between results from primary and ultimate biodegradation and those from determination of toxicity. Pesticide concentrations were always reduced to below the limit of detection in less than 17 days. High COD removal (90-96%) was achieved in 28 and 18 days for methomyl and ametryn, respectively.

213. Fediere, G., El-Sheikh, M. A. K., Semeada, A. M., El-Hefny, A., Masri, M., and El-Sherif, S. (97). **Production and Field Evaluation of a Granulosis Virus for Control of Sesamia cretica Led. (Lep., Noctuidae) in Maize Fields in Egypt.** *J.Appl.Entomol.* 121: 293-296.

Chem Codes: EcoReference No.: 74142
User Define 2: WASHT
Chemical of Concern: MOM; Rejection Code: MIXTURE.

214. Felland, C. M., Teulon, D. A. J., Hull, L. A., and Polk, D. F. (95). **Distribution and management of thrips (Thysanoptera: Thripidae) on nectarine in the mid-Atlantic region.** *Journal of economic entomology [j. Econ. Entomol.]* 88: 1004-1011.

Chem Codes: Chemical of Concern: MOM; Rejection Code: SURVEY.
Abstract: Adult thrips flight activity was monitored with water traps in nectarine orchards in 4 locations in the mid-Atlantic region in 1992. Thrips infestation at bloom and subsequent injury at harvest were evaluated. Twenty-nine species of thrips were recovered in water traps. Western flower thrips, Frankliniella occidentalis (Pergande), comprised 92% of the thrips in water trap samples at a site in south central Pennsylvania where 16% of the nectarines were silvered (thrips damage). At another site in south central Pennsylvania and at sites in north central Pennsylvania and southern New Jersey, flower thrips, F. tritici (Fitch), were most numerous and silvering did not occur. The only injurious thrips recovered from blossoms was pear thrips, Taeniothrips

inconsequens (Uzel), at the north central Pennsylvania site where increased scarring was observed. Silvering was correlated with the number of thrips per fruit and was most extensive in the lower 3rd of the canopy in 2 nectarine orchards. In field applications, formetanate hydrochloride and methomyl both reduced silvering injury by western flower thrips, with the former providing a longer period of protection. Cumulative thrips days were highly correlated with the percentage of fruit receiving moderate levels of silvering.

215. Felsot, A. S. and Shelton, D. R. (93). **ENHANCED BIODEGRADATION OF SOIL PESTICIDES INTERACTION BETWEEN PHYSICOCHEMICAL PROCESSES AND MICROBIAL ECOLOGY.** *Sssa Special Publication* 0 : 227-251.

Chem Codes: Chemical of Concern: EDT,MOM,ADC,CBF; Rejection Code: MICROBE.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM JOURNAL ARTICLE SOIL DETOXIFICATION
KEYWORDS: Ecology
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-Molecular Properties and Macromolecules
KEYWORDS: Metabolism-General Metabolism
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Food and Industrial Microbiology-Biodegradation and Biodeterioration
KEYWORDS: Soil Microbiology
KEYWORDS: Agronomy-General
KEYWORDS: Soil Science-Physics and Chemistry (1970-)
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216. Felsot, A. S. and Shelton, D. R. (93). **ENHANCED BIODEGRADATION OF SOIL PESTICIDES INTERACTION BETWEEN PHYSICOCHEMICAL PROCESSES AND MICROBIAL ECOLOGY.** *Sssa Special Publication* 0 : 227-251.

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ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM JOURNAL ARTICLE SOIL DETOXIFICATION
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KEYWORDS: Soil Science-Physics and Chemistry (1970-)
KEYWORDS: Soil Science-Fertility and Applied Studies (1970-)
KEYWORDS: Pest Control
KEYWORDS: Microorganisms-Unspecified

217. Fernando, J. C., Rogers, K. R., Anis, N. A., Valdes, J. J., Thompson, R. G., Eldefrawi, A. T., and Eldefrawi, M. E. *. (93). **Rapid detection of anticholinesterase insecticides by a reusable light addressable potentiometric biosensor.** *Journal of agricultural and food chemistry [j. Agric. Food chem.]* 41: 511-516.

Chem Codes: Chemical of Concern: MOM,CBF,ADC; Rejection Code: IN VITRO.
Abstract: A light addressable potentiometric sensor (LAPS) was used to detect organophosphate and carbamate anticholinesterases (anti-ChEs), using eel acetylcholinesterase (AChE) as the biological sensing element. Biotinylated AChE was preincubated with inhibitor or buffer alone and then captured on biotinylated nitrocellulose membrane via streptavidin cross-linking, or AChE was preimmobilized on the capture membrane and then a sample containing the anti-ChE was filtered through the capture membrane. Hydrolysis of

acetylcholine (ACh) by the captured AChE resulted in a strong potentiometric signal, and the immobilized AChE retained its affinity for ACh and anti-ChEs. IC sub(50) values for inhibition of captured AChE obtained by the LAPS agreed with those obtained by a spectrophotometric method or a fiber optic evanescent fluorosensor. Paraoxon and bendiocarb were detected at 10 nM, while higher concentrations were required for monocrotophos, dicrotophos, dichlorvos, phosdrin, diazinon, tetraethyl pyrophosphate, aldicarb, and methomyl. Important features of the LAPS for detection of anti-ChEs are speed (eight samples assayed simultaneously in minutes), precision, and reusability.

218. Fernando, J. C., Rogers, K. R., Anis, N. A., Valdes, J. J., Thompson, R. G., Eldefrawi, A. T., and Eldefrawi, M. E. *. (93). **Rapid detection of anticholinesterase insecticides by a reusable light addressable potentiometric biosensor.** *Journal of agricultural and food chemistry [j. Agric. Food chem.]* 41: 511-516.

Chem Codes: Chemical of Concern: MOM,CBF,ADC; Rejection Code: IN VITRO.
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219. Fialkov, Alexander B, Gordin, Alexander, and Amirav, Aviv (2003). **Extending the range of compounds amenable for gas chromatography-mass spectrometric analysis.** *Journal Of Chromatography. A* 991: 217-240.

Chem Codes: Chemical of Concern: ADC; Rejection Code: METHODS .
Gas chromatography-mass spectrometry (GC-MS) suffers from a major limitation in that an expanding number of thermally labile or low volatility compounds of interest are not amenable for analysis. We found that the elution temperatures of compounds from GC can be significantly lowered by reducing the column length, increasing the carrier gas flow rate, reducing the capillary column film thickness and lowering the temperature programming rate. Pyrene is eluted at 287 degrees C in standard GC-MS with a 30 m x 0.25 mm I.D. column with 1-microm DB5ms film and 1-ml/min He column flow rate. In contrast, pyrene is eluted at 79 degrees C in our "Supersonic GC-MS" system using a 1 m x 0.25 mm I.D. column with 0.1-microm DB5ms film and 100-ml/min He column flow rate. A simple model has been invoked to explain the significantly (up to 208 degrees C) lower elution temperatures observed. According to this model, every halving of the temperature programming rate, or number of separation plates (either through increased flow rate or due to reduced column length), results in approximately 20 degrees C lower elution temperature. These considerably lower elution temperatures enable the analysis of an extended range of thermally labile and low volatility compounds, that otherwise could not be analyzed by standard GC-MS. We demonstrate the analysis of large polycyclic aromatic hydrocarbons (PAHs) such as decacyclene with ten fused rings, well above the current GC limit of PAHs with six rings. Even a metalloporphirin such as magnesiumoctaethylporphin was easily analyzed with elution temperatures below 300 degrees C. Furthermore, a range of thermally labile compounds were analyzed including carbamates such as methomyl, aldicarb, aldicarbsulfone and oxamyl, explosives such as pentaerythritol tetranitrate, Tetryl and HMX, and drugs such as reserpine (608 a.m.u.). Supersonic GC-MS was used, based on the coupling of a supersonic molecular beam (SMB) inlet and ion sources with a bench-top Agilent 6890 GC plus 5972 MSD. The Supersonic GC-MS provides enhanced molecular ion without any ion source related peak tailing. Thus, the lower GC separation power involved in the analysis of thermally labile and low volatility compounds is compensated by increased separation power of the MS gained from the enhanced molecular ion. Several implications of these findings are discussed, including our conclusion that slower chromatography leads to better analysis of thermally labile compounds. [Journal Article; In English; Netherlands]

220. Fialkov, Alexander B, Gordin, Alexander, and Amirav, Aviv (2003). **Extending the range of compounds amenable for gas chromatography-mass spectrometric analysis.** *Journal Of Chromatography. A* 991: 217-240.

Chem Codes: Chemical of Concern: ADC; Rejection Code: METHODS .
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221. Fleming, W. J., Augspurger, T. P., and Alderman, J. A. (95). **Freshwater mussel die-off attributed to anticholinesterase poisoning.** *Environmental Toxicology and Chemistry* 14 : 877-879.

Chem Codes: Chemical of Concern: MOM; Rejection Code: SURVEY.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. In 1990, we investigated a die-off of freshwater mussels in north-central North Carolina. An estimated 1,000 mussels of several species were found dead or moribund, including about 111 Tar spinymussels (Elliptio steinstansana), a federally listed endangered species. The die-off occurred during a period of low flow and high water temperature in a stream reach dominated by forestry and agriculture. Pathological examinations did not show any abnormalities and indicated that the die-off was an acute event. Chemical analyses of mussels, sediments, and water revealed no organophosphorus or carbamate pesticides. Cholinesterase activity in adductor muscle from Eastern elliptios (Elliptio complanata) collected at the kill site and downstream was depressed 73 and 65%, respectively, compared with upstream reference samples. The depression is consistent with a diagnosis of anticholinesterase poisoning. This is the first documented case in which cholinesterase-inhibiting compounds h
KEYWORDS: General Biology-Conservation
KEYWORDS: Ecology
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KEYWORDS: Biochemical Studies-General
KEYWORDS: Biochemical Studies-Proteins
KEYWORDS: Enzymes-Chemical and Physical
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Invertebrata
KEYWORDS: Pelecypoda

222. Fluetsch, K. M. and Sparling, D. W. *. (94). **Avian nesting success and diversity in conventionally and organically managed apple orchards.** *Environmental toxicology and chemistry [environ. Toxicol. Chem.]* 13: 1651-1659.

Chem Codes: Chemical of Concern: MOM; Rejection Code: SURVEY.
Abstract: This study examines the effects of operational use of pesticides on avian species inhabiting apple orchards in Pennsylvania. Mourning dove (Zenaida macroura) and American robin (Turdus migratorius) nests were monitored in three organic and three conventional apple orchards during 1990 and 1991. In 1991 we surveyed the avian communities of these orchards by using line transects. Organophosphorus (OP) (e.g., azinphos-methyl, phosphamidon, parathion, dimethoate), carbamate (CA) (e.g., methomyl, formetanate, oxamyl), and organochlorine (endosulfan) pesticides, known to be highly toxic to birds, were sprayed individually or in mixtures as part of routine pest management as many as 19 times during peaks in breeding activity. Spray card tests revealed that OP pesticides were deposited on 86% of the nests in conventional orchards. Daily survival rates (DSRs) for nests of both species were higher in the organic orchards than in the conventional orchards for 1991 and for years combined. Species diversity was greater in the organic orchards than in the conventional orchards. Repeated applications of pesticides within the conventional orchards reduced the reproductive success of doves and robins and may have lowered avian species diversity compared with organic orchards.

223. Fomsgaard, I. S. (95). **Degradation of pesticides in subsurface soils, unsaturated zone - a review of methods and results.**

Chem Codes: CBF,ADC; Rejection Code: REVIEW/FATE.
Methods and results from degradation studies in subsoils, unsaturated zone, were reviewed for mecoprop, 2,4-D, atrazine, alachlor, aldicarb, carbofuran, linuron, oxamyl, methomyl, MCPA, dichlorprop, monochlorprop, dichlorphenol, TCA, parathion, metribuzin, metolachlor and fenamiphos. Most of the investigations were laboratory studies where small soil samples were sieved and pesticides were added in concentrations from 0.5-5 mu g/g. A few of the studies mentioned the importance of working with undisturbed samples; another few studies used isotope-labelled pesticides which made it possible to work with concentrations as low as 0.02 mu g/g. Subsoil samples were characterized according to factors as microbial activity, soil temperature, water content, oxygen content, concentration of pesticide, pretreatment of the soil and soil type, factors considered to have influence on degradation of pesticides. Chemical hydrolysis was considered to be the most dominant pathway in the degradation of aldicarb in subsoil in one of the published papers; all other investigations considered the degradation of pesticides in subsoil to be primarily microbiological. Only a few of the investigations measured the biomass or biological activity of the subsoil samples. water pollution sources. fate of pollutants. pesticides. soil contamination. groundwater pollution. degradation. aeration zone. subsoil. groundwater contamination Conference: 4. Workshop on Chemistry and Fate of Modern Pesticides, Prague (Czech Rep.), 8-10 Sep 1993
ISSN: 0306-7319
Language: English
Subfile: Water Resources Abstracts; Pollution Abstracts

224. Fomsgaard, I. S. (95). **Degradation of pesticides in subsurface soils, unsaturated zone - a review of methods and results.**

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Chem Codes: Chemical of Concern: CBF,ADC; Rejection Code: REVIEW/FATE.
Methods and results from degradation studies in subsoils, unsaturated zone, were reviewed for mecoprop, 2,4-D, atrazine, alachlor, aldicarb, carbofuran, linuron, oxamyl, methomyl, MCPA, dichlorprop, monochlorprop, dichlorphenol, TCA, parathion, metribuzin, metolachlor and fenamiphos. Most of the investigations were laboratory studies where small soil samples were sieved and pesticides were added in concentrations from 0.5-5 mu g/g. A few of the studies mentioned the importance of working with undisturbed samples; another few studies used isotope-labelled pesticides which made it possible to work with concentrations as low as 0.02 mu g/g. Subsoil samples were characterized according to factors as microbial activity, soil temperature, water content, oxygen content, concentration of pesticide, pretreatment of the soil and soil type, factors considered to have influence on degradation of pesticides. Chemical hydrolysis was considered to be the most dominant pathway in the degradation of aldicarb in subsoil in one of the published papers; all other investigations considered the degradation of pesticides in subsoil to be primarily microbiological. Only a few of the investigations measured the biomass or biological activity of the subsoil samples. water pollution sources. fate of pollutants. pesticides. soil contamination. groundwater pollution. degradation. aeration zone. subsoil. groundwater contamination Conference: 4. Workshop on Chemistry and Fate of Modern Pesticides, Prague (Czech Rep.), 8-10 Sep 1993
ISSN: 0306-7319
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226. Font, G., Manes, J., Molto, J. C., and Pico, Y. (93). **SOLID-PHASE EXTRACTION IN MULTI-RESIDUE PESTICIDE ANALYSIS OF WATER.** *J Chromatogr* 642 : 135-161.

Chem Codes: SZ,MTL,MOM,MLT,ADC,CBF; Rejection Code: CHEM METHOD.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM REVIEW ANALYTICAL METHOD
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air

227. Font, G., Manes, J., Molto, J. C., and Pico, Y. (93). **SOLID-PHASE EXTRACTION IN MULTI-RESIDUE PESTICIDE ANALYSIS OF WATER.** *J Chromatogr* 642 : 135-161.

Chem Codes: Chemical of Concern: SZ,MTL,MOM,MLT,ADC,CBF; Rejection Code: CHEM METHOD.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM REVIEW ANALYTICAL METHOD
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air

228. Font, G., Manes, J., Molto, J. C., and Pico, Y. (93). **SOLID-PHASE EXTRACTION IN MULTI-RESIDUE**

PESTICIDE ANALYSIS OF WATER. *J Chromatogr* 642 : 135-161.

Chem Codes: Chemical of Concern: SZ,MTL,MOM,MLT,ADC,CBF; Rejection Code: CHEM METHOD.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM REVIEW ANALYTICAL METHOD
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air

229. Fossi, M. C. (98). **Biomarkers as diagnostic and prognostic tools for wildlife risk assessment: Integrating endocrine-disrupting chemicals.** *Toxicology and Industrial Health* 14 : 291-309.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO TOX DATA.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. The state of art of the biomarker approach in ecotoxicology is reviewed with particular reference to its use in the assessment of exposure to endocrine-disrupting chemicals in wildlife. The following topics are discussed: the theoretical basis of the biomarker approach; the advantages of biomarker strategies in biomonitoring programs; application of biomarker strategies in an ecotoxicological context; the main biomarker techniques; interpretation of the results; and the development and validation of nondestructive biomarkers.
KEYWORDS: Ecology
KEYWORDS: Biochemical Studies-General
KEYWORDS: Endocrine System-Gonads and Placenta
KEYWORDS: Toxicology-Environmental and Industrial Toxicology

230. Frank, R., Braun, H. E., Clegg, B. S., Ripley, B. D., and Johnson, R. (90). **SURVEY OF FARM WELLS FOR PESTICIDES ONTARIO CANADA 1986 AND 1987.** *Bull Environ Contam Toxicol* 44 : 410-419.

Chem Codes: Chemical of Concern: SZ,MTL,MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM WATER POLLUTION CONTAMINATION ENVIRONMENTAL SURVEILLANCE
KEYWORDS: Ecology
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control

231. Frank, R., Braun, H. E., Clegg, B. S., Ripley, B. D., and Johnson, R. (90). **SURVEY OF FARM WELLS FOR PESTICIDES ONTARIO CANADA 1986 AND 1987.** *Bull Environ Contam Toxicol* 44 : 410-419.

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ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM WATER POLLUTION CONTAMINATION ENVIRONMENTAL SURVEILLANCE
KEYWORDS: Ecology
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control

232. Frank, R. and Logan, L. (88). **PESTICIDE AND INDUSTRIAL CHEMICAL RESIDUES AT THE MOUTH OF THE GRAND SAUGEEN AND THAMES RIVERS ONTARIO CANADA 1981-1985.** *Arch Environ Contam Toxicol* 17 : 741-754.

Chem Codes: Chemical of Concern: SZ,MTL,MOM,CBF,ADC; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM WATER POLLUTION HERBICIDE

INSECTICIDE FUNGICIDE ATRAZINE 2 4-D DIAZINON MALATHION CHLORDANE ALACHLOR METOLACHLOR CYANAZINE MONITORING
KEYWORDS: Ecology
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Agronomy-Weed Control
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control

233. Frank, R. and Logan, L. (88). **PESTICIDE AND INDUSTRIAL CHEMICAL RESIDUES AT THE MOUTH OF THE GRAND SAUGEEN AND THAMES RIVERS ONTARIO CANADA 1981-1985.** *Arch Environ Contam Toxicol* 17 : 741-754.

Chem Codes: Chemical of Concern: SZ,MTL,MOM,CBF,ADC; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM WATER POLLUTION HERBICIDE INSECTICIDE FUNGICIDE ATRAZINE 2 4-D DIAZINON MALATHION CHLORDANE ALACHLOR METOLACHLOR CYANAZINE MONITORING
KEYWORDS: Ecology
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Agronomy-Weed Control
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control

234. Frank, R, Logan, L, and Clegg, B S (91). **Pesticide and polychlorinated biphenyl residues in waters at the mouth of the Grand, Saugeen, and Thames Rivers, Ontario, Canada, 1986-1990.** *Archives Of Environmental Contamination And Toxicology* 21: 585-595.

Chem Codes: Chemical of Concern: SZ,MTL,MOM,ADC,CBF; Rejection Code: NO SPECIES.
Water samples were collected from the mouths of the three major agricultural watersheds, the Grand, the Saugeen, and the Thames (Ontario, Canada), between January 1986 and December 1990. Analyses were performed for 18 herbicides, 26 insecticides, and 4 fungicides in use in the basins. A total of between 425 and 474 samples were analyzed for each of the major groups of pesticides. Six herbicides, two insecticides and polychlorinated biphenyls (PCBs) were identified in surface water. Atrazine and its metabolite desethylatrazine were the most frequently found pesticide present in 340 of 474 samples or 72%; the metabolite was not always present with the parent compound. The second most frequently found pesticide was metolachlor which was identified in 30 of 474 samples or 6.3%. 2,4-D and cyanazine were present in 3.3% and 1.5% of the samples, respectively; alachlor, mecoprop, and simazine were present in 0.5% of the samples. Dicamba and metribuzin were present in single samples (0.2%). DDT, heptachlor epoxide, and PCB were identified in only single samples over the 5-year period. Between 342 and 2959 kg/annum of total atrazine were found passing the mouth of the three rivers and entering Lakes Erie or St. Clair between 1986 and 1990. The greatest loss was from the Thames River and the least from the Saugeen River. Between 1% and 2% of that applied in the watershed was lost at the mouth. Loadings of only two other pesticides to the rivers exceeded 5 kg in any one year, namely, metolachlor and 2,4-D. In the case of metolachlor, loadings ranged from less than 5 to 1,726 kg/annum, the highest being in the Thames and the lowest in the Saugeen River. 2,4-D exceeded a loading of 5 kg/annum in 1988 in the Grand River. Atrazine, cyanazine, and metolachlor were tracked across Lake St. Clair from the mouth of the Thames to the mouth of the Detroit River in 1987. [Journal Article; In English; United States]
http://www.sciencedirect.com/science/article/B6WVB-45CP7MP-4F0/2/d834989aaf9f8a49569a28168c139eac

235. Frank, R, Logan, L, and Clegg, B S (91). **Pesticide and polychlorinated biphenyl residues in waters at the mouth of the Grand, Saugeen, and Thames Rivers, Ontario, Canada, 1986-1990.** *Archives Of Environmental Contamination And Toxicology* 21: 585-595.

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http://www.sciencedirect.com/science/article/B6WVB-45CP7MP-4F0/2/d834989aaf9f8a49569a28168c139eac

236. Frank, R, Logan, L, and Clegg, B S (91). **Pesticide and polychlorinated biphenyl residues in waters at the mouth of the Grand, Saugeen, and Thames Rivers, Ontario, Canada, 1986-1990.** *Archives Of Environmental Contamination And Toxicology* 21: 585-595.

Chem Codes: Chemical of Concern: SZ,MTL,MOM,ADC,CBF; Rejection Code: NO SPECIES.
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http://www.sciencedirect.com/science/article/B6WVB-45CP7MP-4F0/2/d834989aaf9f8a49569a28168c139eac

237. Fujita, Y. (85). **CONTACT DERMATITIS FROM PESTICIDES IN TEA GROWERS.** *Acta Med Univ Kagoshima* 27 : 17-38.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM HUMAN OMITE BORDEAUX PLICTRAN

TOPSIN-M LANNATE KELTHANE DIBROM SUPRACIDE DICHLORVOS DACONIL GRAMOXONE INSECTICIDE PATCH TEST
KEYWORDS: Biochemical Studies-General
KEYWORDS: Pathology
KEYWORDS: Integumentary System-Pathology
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Allergy
KEYWORDS: Public Health: Environmental Health-Occupational Health
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Hominidae

238. Fung, K. K. (1975Jul-Aug). **Determination and identification of S-methyl N-[(methylcarbamoy)oxy]thioacetimidate (methomyl) residues in tobacco.** *J Agric Food Chem 1975 Jul-Aug;23(4):695-8.* 23: 695-8.

Chem Codes: Chemical of Concern: MOM; Rejection Code: METHOD.

239. Fung, K. K. and Uren, N. C. (1977Jul-Aug). **Microbial transformation of S-methyl N-[methylcarbamoyl)oxy]thioacetimidate (methomyl) in soils.** *J Agric Food Chem* 25: 966-969.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO SPECIES.

240. Gao, C., Govind, R., and Tabak, H. H. (96). **Predicting soil sorption coefficients of organic chemicals using a neural network model.** *Environmental Toxicology and Chemistry* 15 : 1089-1096.

Chem Codes: Chemical of Concern: SZ,MOM; Rejection Code: MODEL.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. The soil/sediment adsorption partition coefficient normalized to organic carbon (Koc) is extensively used to assess the fate of organic chemicals in hazardous waste sites. Several attempts have been made to estimate the value of Koc from chemical structure or its parameters. The primary purpose of this study was to develop a nonlinear model for estimating Koc applicable to polar and nonpolar organics based on artificial neural networks using the octanol/water partition coefficient (Kow.) and water solubility (S). An analytic equation was obtained by starting with a neural network, converging the bias and weight values using the available data on water solubility, octanol/water partition coefficient, and the normalized soil/sediment adsorption partition coefficient, and then combining the equations for each node in the final neural network. For the 119 chemicals in the training set, estimates using the neural network equation lie outside the 2sigma region (the standard
KEYWORDS: Mathematical Biology and Statistical Methods
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Soil Science-Physics and Chemistry (1970-)

241. Garcia de Llasera, M. P., Bernal-Gonzalez, M., and de Llasera, M. P. Garcia (2001). **Presence of carbamate pesticides in environmental waters from the Northwest of Mexico: determination by liquid chromatography.** *Water Research (Oxford)* 35: 1933-1940; Rejection Code: NO SPECIES.
Abstract: A study on the presence of carbamate pesticides, namely aldicarb, aldicarb sulfoxide, baygon, ***benthiocarb*** [thiobencarb], carbofuran, 3-hydroxycarbofuran, carbaryl, desmedipham, methiocarb, methomyl, thiodicarb, oxamyl, and propham was made in ground and surface waters from an agricultural zone of the Yaqui Valley located in northwest Mexico. Trace determinations were made by liquid chromatography (LC) with post-column fluorescence detection (US Environmental Protection Agency method 531.1) or LC-diode array UV detection coupled on-line to a solid-phase extraction (SPE) system and using a 13x4.6 mm i.d. precolumn and a 150x4.6 mm i.d. analytical column, both packed with a C18 silica. Results indicated that the level of contamination with methiocarb was 5.4 micro g/litre in a groundwater sample and 3-hydroxycarbofuran was 18 micro g/litre in a surface water sample. This study provides the basis for a future

monitoring programme.

242. Garcia de Llasera, M. P., Bernal-Gonzalez, M., and de Llasera, M. P. Garcia (2001). **Presence of carbamate pesticides in environmental waters from the Northwest of Mexico: determination by liquid chromatography.** *Water Research (Oxford)* 35: 1933-1940; Rejection Code: NO SPECIES.
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243. Garcia de Llasera, M. P., Bernal-Gonzalez, M., and de Llasera, M. P. Garcia (2001). **Presence of carbamate pesticides in environmental waters from the Northwest of Mexico: determination by liquid chromatography.** *Water Research (Oxford)* 35: 1933-1940; Rejection Code: NO SPECIES.
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244. Garcia-Repetto, R., Soria, M. L., Gimenez, M. P., Menendez, M., and Repetto, M. (98). **Deaths from pesticide poisoning in Spain from 1991 to 1996.** *Veterinary and Human Toxicology* 40 : 166-168.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Data on 184 deaths from pesticide poisonings that occurred in Spain from 1991 to 1996 have been collated via a survey from the National Institute of Toxicology, Sevilla. Organophosphates and carbamates accounted for the majority of the cases. Other substances involved were organochlorines such as endosulfan and the herbicide paraquat.
KEYWORDS: Toxicology-General
KEYWORDS: Hominidae

245. Garcia-Repetto, R., Soria, M. L., Gimenez, M. P., Menendez, M., and Repetto, M. (98). **Deaths from pesticide poisoning in Spain from 1991 to 1996.** *Veterinary and Human Toxicology* 40 : 166-168.

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KEYWORDS: Toxicology-General
KEYWORDS: Hominidae

246. Giblin-Davis, R. M. (94). **COCONUT RED RING DISEASE.** *Ploetz, R. C., Et Al. (Ed.). Compendium of Tropical Fruit Diseases. Viii+88p. American Phytopathological Society (Aps) Press: St. Paul, Minnesota, Usa. Isbn 0-89054-162-0.* 0 : 30-32.

Chem Codes: Chemical of Concern: MOM,CBF,ADC; Rejection Code: REVIEW.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER
BURSAPHELENCHUS-COCOPHILUS RHADINAPHELENCHUS-COCOPHILUS SYMPTOMS
DISEASE CYCLE CONTROL NEMATICIDES SEMIOCHEMICALS
KEYWORDS: Behavioral Biology-Animal Behavior
KEYWORDS: Behavioral Biology-Animal Communication (1971-)
KEYWORDS: Circadian Rhythms and Other Periodic Cycles
KEYWORDS: Biochemical Studies-General
KEYWORDS: Soil Microbiology
KEYWORDS: Horticulture-Tropical and Subtropical Fruits and Nuts
KEYWORDS: Phytopathology-Diseases Caused by Animal Parasites
KEYWORDS: Phytopathology-Disease Control
KEYWORDS: Pest Control
KEYWORDS: Invertebrata
KEYWORDS: Palmae
KEYWORDS: Nematoda

247. Giblin-Davis, R. M. (94). **COCONUT RED RING DISEASE.** *Ploetz, R. C., Et Al. (Ed.). Compendium of Tropical Fruit Diseases. Viii+88p. American Phytopathological Society (Aps) Press: St. Paul, Minnesota, Usa. Isbn 0-89054-162-0.* 0 : 30-32.

Chem Codes: Chemical of Concern: MOM,CBF,ADC; Rejection Code: REVIEW.
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DISEASE CYCLE CONTROL NEMATICIDES SEMIOCHEMICALS
KEYWORDS: Behavioral Biology-Animal Behavior
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KEYWORDS: Phytopathology-Disease Control
KEYWORDS: Pest Control
KEYWORDS: Invertebrata
KEYWORDS: Palmae
KEYWORDS: Nematoda

248. Gil, Garcia M. D., Martinez Vidal, J. L., Martinez, Galera M., Rodriguez, Torreblanca C., and Gonzalez, C. (97). **Determination and degradation of methomyl in tomatoes and green beans grown in greenhouses.** *J Aoac Int* 80: 633-638; Rejection Code: NO TOX DATA.
CAS Registry Number 0 (Insecticides, Carbamate); 0 (Pesticide Residues); 16752-77-5 (Methomyl). A liquid chromatographic (LC) method using UV detection at 233 nm was used to study the degradation of methomyl in tomatoes and green beans grown in greenhouses. A liquid-liquid extraction with CH2Cl2-methanol (90 + 10, v/v) and a cleanup step with Florisil were combined with LC to isolate, recover, and quantitate the pesticide. Average recoveries obtained at spike levels of 0.03 and 0.40 mg/kg were 83.2-84.7% for tomatoes and 83.3-87.5% for green beans. Determination limits were 0.03 mg/kg for tomatoes and 0.01 mg/kg for green beans. Levels of methomyl residues were studied in tomatoes and green beans grown in an experimental greenhouse to establish the effect of the kind of greenhouse, application dose, species grown, and climatic conditions on the degradation of this pesticide. Analysis of variance showed that doses did not affect the response. The half-life, however, is greater in a flat-roof greenhouse than in an asymmetric-roof greenhouse and is significantly longer for green beans than for tomatoes and longer in winter than in spring. A preharvest time of about 5 days may be suitable for green beans sprayed with methomyl. Tomatoes show residue levels at the time of application lower than Spanish minimum residue levels

249. Glab, N., Petit, P. X., and Slonimski, P. P. (93). **Mitochondrial dysfunction in yeast expressing the**

cytoplasmic male sterility T-urf13 gene from maize: Analysis at the population and individual cell level. *Molecular and general genetics [mol. Gen. Genet.]* 236: 299-308.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO TOX DATA.
Abstract: The urf13TW gene, which is derived from the mitochondrial T-urf13 gene responsible for Texas cytoplasmic male sterility in maize, was expressed in Saccharomyces cerevisiae by targeting its translation product into mitochondria. Analysis by oxygraphy at the population level revealed that in the presence of methomyl the oxygen uptake of intact yeast cells carrying the targeted protein is strongly stimulated only with ethanol as respiratory substrate and not with glycerol, lactate, pyruvate, or acetate. When malate is the substrate oxidized by isolated mitochondria, interaction between the targeted protein and methomyl results in significant inhibition of oxygen uptake. This inhibition is eliminated and oxygen uptake is stimulated by subsequent addition of NAD super(+). Using 3,3'-dihexyloxacarbocyanine iodide (DiOC sub(6)(3)) as probe, interactive laser scanning and flow cytometry, which permit analysis at the individual cell level, demonstrated that specific staining of the mitochondrial compartment is obtained and that DiOC sub(6)(3) fluorescence serves as a measure of the membrane potential. Finally, it was shown that, as in T cytoplasm maize mitochondria, HmT toxin and methomyl dissipate the membrane potential of yeast mitochondria that carry the foreign protein. Furthermore, the results suggest that the HmT toxin and methomyl response is related to the plasmid copy number per cell and that the deleterious effect induced by HmT toxin is stronger than that of methomyl.

250. Glab, N., Teste, M. A., and Slonimski, P. P. (94). **MRG1-1, a dominant allele that confers methomyl resistance in yeast expressing the cytoplasmic male sterility T-urf13 gene from maize.** *Current genetics [curr. Genet.]* 26: 477-485.

Chem Codes: Chemical of Concern: MOM; Rejection Code: IN VITRO.
Abstract: We have previously described a eukaryotic heterologous expression system, with the urf13TW gene in yeast, which mimics the disease susceptibility associated with the Texas cytoplasmic male sterility in maize. This yeast model was used to isolate yeast nuclear mutants conferring methomyl resistance. The genetic strategy we have developed focused on screening for nuclear dominant yeast mutations which restore methomyl resistance. MRG1-1, a yeast nuclear dominant allele, was identified as a methomyl-resistance restorer. We have shown that methomyl resistance co-segregated with a pleiotropic phenotype in the heterozygous MRG1-1/MRG1 diploids, detectable even in the absence of the maize-derived mitochondrial protein and/or methomyl. We observed an increase in oxygen uptake, a significant decrease of the levels of cytochrome aa sub(3), and a decrease in the growth yield. This phenotype is influenced by the carbon source and the results suggest a defect in the adaptation to the respiratory pathway in MRG1-1 yeast cells.

251. Glab, N., Wise, R. P., Pring, D. R., Jacq, C., and Slonimski, P. (90). **Expression in Saccharomyces cerevisiae of a gene associated with cytoplasmic male sterility from maize: Respiratory dysfunction and uncoupling of yeast mitochondria.** *Molecular and general genetics [mol. Gen. Genet.]* 223: 24-32.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO TOX DATA.
Abstract: We asked whether the mitochondrial T-urf13 gene, associated with the male sterility phenotype of T cytoplasm in maize, can be expressed in Saccharomyces cerevisiae and whether this expression can mimic the effects observed in maize. We introduced the universal code equivalent of the T-urf13 gene into the S. cerevisiae nucleus by transformation and directed its translation product into mitochondria by means of a fusion with the targeting presequence from Neurospora crassa ATPase subunit 9. Expression of the universal code equivalent of the T-urf13 gene in the yeast nucleus does indeed mimic its effects in maize: respiratory growth of yeast is inhibited, respiration-deficient cytoplasmic mutants accumulate and NADH oxidation of isolated mitochondria is uncoupled. All these effects are observed only if the mitochondrial targeting peptide and methomyl or HmT toxin are present.

252. Goldberg, E. D. (95). **Emerging problems in the coastal zone for the twenty-first century.** *Marine Pollution Bulletin* 31 : 152-158.

Chem Codes: Chemical of Concern: MOM,CBF,ADC; Rejection Code: REVIEW, SURVEY.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. The continued availability of some marine resources is threatened by the increased fluxes to the oceans of identifiable and measurable collections of pollutants, which

include plant nutrients, plastics, environmental oestrogens, and organisms contained in ship-ballast waters. Characteristic of these societal discards that will guide research progress are long residence times: slow accumulation rates; increasing fluxes with time; and dissemination over large areas. The resolution of these problems will require data collections over decadal time-scales. Finally, some classical and some perceived marine pollution problems, such as those involving specific metals, can now be discontinued in the face of the absence of unacceptable impacts on living organisms.
KEYWORDS: Ecology
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biochemical Studies-Sterols and Steroids
KEYWORDS: Endocrine System-Gonads and Placenta
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air

253. Goldberg, E. D. (95). **Emerging problems in the coastal zone for the twenty-first century.** *Marine Pollution Bulletin* 31 : 152-158.

Chem Codes: Chemical of Concern: MOM,CBF,ADC; Rejection Code: REVIEW, SURVEY.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. The continued availability of some marine resources is threatened by the increased fluxes to the oceans of identifiable and measurable collections of pollutants, which include plant nutrients, plastics, environmental oestrogens, and organisms contained in ship-ballast waters. Characteristic of these societal discards that will guide research progress are long residence times: slow accumulation rates; increasing fluxes with time; and dissemination over large areas. The resolution of these problems will require data collections over decadal time-scales. Finally, some classical and some perceived marine pollution problems, such as those involving specific metals, can now be discontinued in the face of the absence of unacceptable impacts on living organisms.
KEYWORDS: Ecology
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biochemical Studies-Sterols and Steroids
KEYWORDS: Endocrine System-Gonads and Placenta
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air

254. Gonzalez-Martinez, M. A., Morais, S., Puchades, R., Maquieira, A., Abad, A., and Montoya, A. (97). **Development of an automated controlled-pore glass flow through immunosensor for carbaryl.** *Analytica Chimica Acta* 347 : 199-205.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. The application of controlled-pore glass (CPG) as solid support for immobilization of immunoreagents in order to develop flow-through immunosensors is described. Monoclonal antibodies (MAbs) to carbaryl were site-directed immobilized on CPG through covalent attachment of their oxidized carbohydrate moieties to amine groups generated on the surface of silanyzed CPG. The automated immunosensor system is based on the LIB-CNA36 MAb in a direct competitive assay format, with horseradish peroxidase as enzyme label and fluorimetric detection. The dynamic range of the sensor is 0.05-1 mug l-1, with a detection limit of 0.029 mug l-1, being sensitive enough to be applied to drinking water samples without preconcentration. The immobilized antibody reactor is able to run a whole assay in 20 min, and is reusable for more than 100 of consecutive assay cycles without significant loss of performance. The recognition of 1-naphthol - the main metabolite of carbaryl - and other N-methylc
KEYWORDS: Methods
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Toxicology-Foods
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Immunology and Immunochemistry-General
KEYWORDS: Public Health: Environmental Health-Sewage Disposal and Sanitary Measures
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control

KEYWORDS: Economic Entomology-Chemical and Physical Control

255. Gonzalez-Martinez, M. A., Morais, S., Puchades, R., Maquieira, A., Abad, A., and Montoya, A. (97). **Development of an automated controlled-pore glass flow through immunosensor for carbaryl.** *Analytica Chimica Acta* 347 : 199-205.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. The application of controlled-pore glass (CPG) as solid support for immobilization of immunoreagents in order to develop flow-through immunosensors is described. Monoclonal antibodies (MAbs) to carbaryl were site-directed immobilized on CPG through covalent attachment of their oxidized carbohydrate moieties to amine groups generated on the surface of silanyzed CPG. The automated immunosensor system is based on the LIB-CNA36 MAb in a direct competitive assay format, with horseradish peroxidase as enzyme label and fluorimetric detection. The dynamic range of the sensor is 0.05-1 mug l-1, with a detection limit of 0.029 mug l-1, being sensitive enough to be applied to drinking water samples without preconcentration. The immobilized antibody reactor is able to run a whole assay in 20 min, and is reusable for more than 100 of consecutive assay cycles without significant loss of performance. The recognition of 1-naphthol - the main metabolite of carbaryl - and other N-methylc
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KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Immunology and Immunochemistry-General
KEYWORDS: Public Health: Environmental Health-Sewage Disposal and Sanitary Measures
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control

256. Goo, R. (94). **MEASUREMENTS OF POLLUTANTS MONITORING SAMPLING AND AUTOMATED ANALYSIS.** *Water Environment Research* 66 : 298-301.

Chem Codes: SZ,MLT,MOM; Rejection Code: BACTERIA.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM LITERATURE REVIEW VIRUS BACTERIA WATER QUALITY BIORETENTION STORMWATER POLLUTION WASTE WATER TREATMENT DISINFECTION DRINKING WATER GROUNDWATER SURFACE WATER SLUDGE
KEYWORDS: Biochemical Studies-General
KEYWORDS: Microbiological Apparatus
KEYWORDS: Virology-General
KEYWORDS: Medical and Clinical Microbiology-Bacteriology
KEYWORDS: Medical and Clinical Microbiology-Virology
KEYWORDS: Public Health-Public Health Laboratory Methods
KEYWORDS: Public Health-Disinfection and Vector Control
KEYWORDS: Public Health: Environmental Health-Sewage Disposal and Sanitary Measures
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Disinfection
KEYWORDS: Animal Viruses-General (1993-)
KEYWORDS: Bacteria-General Unspecified (1992-)

257. Goo, R. (94). **MEASUREMENTS OF POLLUTANTS MONITORING SAMPLING AND AUTOMATED ANALYSIS.** *Water Environment Research* 66 : 298-301.

Chem Codes: Chemical of Concern: SZ,MLT,MOM; Rejection Code: BACTERIA.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM LITERATURE REVIEW VIRUS BACTERIA WATER QUALITY BIORETENTION STORMWATER POLLUTION WASTE WATER TREATMENT DISINFECTION DRINKING WATER GROUNDWATER SURFACE WATER SLUDGE
KEYWORDS: Biochemical Studies-General

KEYWORDS: Microbiological Apparatus
KEYWORDS: Virology-General
KEYWORDS: Medical and Clinical Microbiology-Bacteriology
KEYWORDS: Medical and Clinical Microbiology-Virology
KEYWORDS: Public Health-Public Health Laboratory Methods
KEYWORDS: Public Health-Disinfection and Vector Control
KEYWORDS: Public Health: Environmental Health-Sewage Disposal and Sanitary Measures
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Disinfection
KEYWORDS: Animal Viruses-General (1993-)
KEYWORDS: Bacteria-General Unspecified (1992-)

258. Goodrich, J. A., Lykins, B. W Jr, and Clark, R. M. (91). **Drinking water from agriculturally contaminated groundwater.** *J Environ Qual* 20 : 707-717.

Chem Codes: Chemical of Concern: SZ,PNB,MTL,MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Sharp increases in fertilizer and pesticide use throughout the 1960s and 1970s along with generally less attachment to soil particles may result in more widespread contamination of drinking water supplies. The purpose of this study was to highlight the use of agricultural chemicals and their occurrence in groundwater while focusing on the engineering processes available for removing them to acceptable limits for consumers. Through various case studies and field-scale research projects, several different drinking water treatment technologies have been evaluated for their capability removing various groundwater contaminants. Both central treatment and individual household point of entry devices were studied. Treatment options vary depending on the types of contaminants to be removed. Best available technology consists of ion exchange or reverse osmosis for removing nitrates, granular activated C for removing non-volatile synthetic organics, and air stripping for volatile
KEYWORDS: Biochemical Studies-General
KEYWORDS: Food Technology-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Soil Science-Fertility and Applied Studies (1970-)
KEYWORDS: Pest Control

259. Goodrich, J. A., Lykins, B. W Jr, and Clark, R. M. (91). **Drinking water from agriculturally contaminated groundwater.** *J Environ Qual* 20 : 707-717.

Chem Codes: Chemical of Concern: SZ,PNB,MTL,MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
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KEYWORDS: Food Technology-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Soil Science-Fertility and Applied Studies (1970-)
KEYWORDS: Pest Control

260. Gordon, M. and Richter, E. D. (91). **HAZARDS ASSOCIATED WITH AERIAL SPRAYING OF ORGANOPHOSPHATE INSECTICIDES IN ISRAEL.** *Rev Environ Health* 9 : 229-238.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM REVIEW OCCUPATIONAL HEALTH RISK ANTI-CHOLINESTERASES AGRICULTURE WORKER PROTECTION COTTON CROP YIELD INCREASES
KEYWORDS: Ecology
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biochemical Studies-Proteins
KEYWORDS: Enzymes-Physiological Studies
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Occupational Health
KEYWORDS: Plant Physiology
KEYWORDS: Agronomy-Fiber Crops
KEYWORDS: Pest Control
KEYWORDS: Hominidae

261. Gradis, W. H. and Sutton, T. B. (81). **Effect of Insecticides, Nutrients, and Adjuvants on in vitro Fungistatic and Fungicidal Activity of Captan and Mancozeb.** *Plant disease [plant dis.]* 65: 356-357.

Chem Codes: Chemical of Concern: MOM; Rejection Code: IN VITRO.
Abstract: The in vitro effect of phosmet, methomyl, azinphosmethyl, calcium nitrate, sodium borate, and a spreader-sticker on the fungicidal activity of captan and mancozeb was investigated by using a cellophane transfer technique. Spore germination and germ tube length of conidia of Botryosphaeria dothidea and Glomerella cignulata were used to measure fungitoxic properties of the chemicals. The fungistatic and fungicidal activity of mancozeb was reduced by the addition of phosmet and azinphosmethyl, and that of captan was reduced by the addition of sodium borate, phosmet, or azinphosmethyl.

262. Graham, J. A. (87). **HIGH-PERFORMANCE LIQUID CHROMATOGRAPHY FOR DETERMINATION OF TRACE ORGANIC COMPOUNDS IN AQUEOUS ENVIRONMENTAL SAMPLES ASSESSMENT OF CURRENT AND FUTURE CAPABILITIES.** *Suffet, I. H. And M. Malaiyandi (Ed.). Advances in Chemistry Series, 214. Organic Pollutants in Water: Sampling, Analysis, and Toxicity Testing* Symposium Held at the 188th Meeting of the American Chemical Society, Philadelphia, Pennsylvania, Usa, August 29-31, 1984. Xvi+797p. American Chemical Society: Washington, D.c., Usa. Illus. Isbn 0-8412-0951-0.; 0 : 97-136.

Chem Codes: Chemical of Concern: MOM,CBF,ADC; Rejection Code: CHEM METHODS.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM WATER POLLUTION
KEYWORDS: General Biology-Symposia
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air

263. Graham, J. A. (87). **HIGH-PERFORMANCE LIQUID CHROMATOGRAPHY FOR DETERMINATION OF TRACE ORGANIC COMPOUNDS IN AQUEOUS ENVIRONMENTAL SAMPLES ASSESSMENT OF CURRENT AND FUTURE CAPABILITIES.** *Suffet, I. H. And M. Malaiyandi (Ed.). Advances in Chemistry Series, 214. Organic Pollutants in Water: Sampling, Analysis, and Toxicity Testing* Symposium Held at the 188th Meeting of the American Chemical Society, Philadelphia, Pennsylvania, Usa, August 29-31, 1984. Xvi+797p. American Chemical Society: Washington, D.c., Usa. Illus. Isbn 0-8412-0951-0.; 0 : 97-136.

Chem Codes: Chemical of Concern: MOM,CBF,ADC; Rejection Code: CHEM METHODS.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM WATER POLLUTION

KEYWORDS: General Biology-Symposia
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air

264. Grattidge, R. (90). **GROWING CAPSICUMS AND CHILLIES IN QUEENSLAND AUSTRALIA.** *Grattidge, R. Growing Capsicums and Chillies in Queensland. Queensland Department of Primary Industries: Brisbane, Australia. Illus. Paper. Isbn 0-7242-3944-8.* 0 : Iii+27p.

Chem Codes: Chemical of Concern: PNB,MOM; Rejection Code: NO TOXICANT.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK INSECT MITE FERTILIZER IRRIGATION PEST CONTROL DISEASE CONTROL HARVESTING INTERSTATE MARKETING
KEYWORDS: General Biology-Institutions
KEYWORDS: Ecology
KEYWORDS: Ecology
KEYWORDS: Biochemical Studies-Minerals
KEYWORDS: Nutrition-Minerals
KEYWORDS: Public Health-General and Miscellaneous
KEYWORDS: Plant Physiology
KEYWORDS: Soil Science-Fertility and Applied Studies (1970-)
KEYWORDS: Horticulture-Vegetables
KEYWORDS: Phytopathology-Disease Control
KEYWORDS: Phytopathology-General and Miscellaneous
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Field
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Invertebrata
KEYWORDS: Invertebrata
KEYWORDS: Solanaceae
KEYWORDS: Insecta-Unspecified
KEYWORDS: Acarina

265. Grayson, B. T. and Kleier, D. A. (90). **Phloem mobility of xenobiotics: IV. Modelling of pesticide movement in plants.** *Pestic Sci* 30 : 67-80.

Chem Codes: Chemical of Concern: MOM,CBF,ADC; Rejection Code: MODEL.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. A model is described that accounts for the effect of physical properties on the mobility of a xenobiotic within the phloem tissue of a plant. This model builds on the intermediate permeability hypothesis by incorporating the effect of acid dissociation. The relative importance of lipophilicity and acid-base properties of compounds is discussed. The sensitivity of the model predictions to plant parameters such as the nature of the sieve tube membranes is also explored. Experimental support for th model is presented using examples from the literature. The systematic behaviour of mobility as a function of physical properties for both non-ionized and acidic compounds is well accounted for by the model with only rare exceptions. Application of the model to commercial plant-protection chemicals is generally consistent with experimental observations. Thus, many of the herbicides that are known to be phloem-mobile are predicted to be so by the model. However, none of the selecte
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-Membrane Phenomena
KEYWORDS: Biophysics-Biocybernetics (1972-)
KEYWORDS: Movement (1971-)
KEYWORDS: Morphology
KEYWORDS: Plant Physiology
KEYWORDS: Plant Physiology
KEYWORDS: Plant Physiology

KEYWORDS: Pest Control
KEYWORDS: Plantae-Unspecified

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Chem Codes: Chemical of Concern: MOM,CBF,ADC; Rejection Code: MODEL.
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KEYWORDS: Morphology
KEYWORDS: Plant Physiology
KEYWORDS: Plant Physiology
KEYWORDS: Plant Physiology
KEYWORDS: Pest Control
KEYWORDS: Plantae-Unspecified

267. Grisamore, S. B., Hile, J. P., and Otten, R. J. (91). **PESTICIDE RESIDUES ON GRAIN PRODUCTS.** *Cereal Foods World* 36 : 434-437.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM FOOD RESIDUE FOOD PRODUCTS FOOD INDUSTRY US GOVERNMENT REGULATION FDA METHODS POLICIES
KEYWORDS: General Biology-Institutions
KEYWORDS: Comparative Biochemistry
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Food Technology-Cereal Chemistry
KEYWORDS: Food Technology-Evaluations of Physical and Chemical Properties (1970-)
KEYWORDS: Food Technology-Preparation
KEYWORDS: Toxicology-Foods
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control

268. Grout, T. G. and Richards, G. I. (92). **Susceptibility of Euseius addoensis addoensis (Acari: Phytoseiidae) to Field-Weathered Residues of Insecticides Used on Citrus.** *Exp.Appl.Acarol.* 15: 199-204.

Chem Codes: User Define 2: WASHT,CORE
Chemical of Concern: MOM,BPZ,CYP,MDT,PRN,ES,MVP,PFF,CYP,FPP,IFP,MCB; Rejection Code: NO CONC.

269. Guenu, S. and Hennion, M. C. (96). **Evaluation of new polymeric sorbents with high specific surface areas using an on-line solid-phase extraction-liquid chromatographic system for the trace-level determination of polar pesticides.** *Journal of Chromatography a* 737 : 15-24.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. A styrene-divinylbenzene (PS-DVB) copolymer with a high specific surface area of about 1000 m2/g was used for the on-line analysis of polar pesticides and compared with the similar PLRP-S polymer used previously in disposable on-line precolumns, but with a lower specific surface area of about 500 m2/g. The retention of polar analytes was found to be higher, thus showing the possibility of using precolumns packed with this PS-DVB to extend on-line analysis to more polar pesticides. A problem encountered was the poor coupling of such precolumns with a C18 analytical column, because the mobile phase used for the analytical separation did not allow their correct transfer, thus causing band broadening of the peaks. The problem was solved by using a carbon-based analytical column which retains polar analytes; the results demonstrate the requirements for a similar retention by the sorbents used in the precolumn and in the analytical column for the on-line coupling of solid-pha
KEYWORDS: Ecology
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control

270. Gunderson, E. L. (95). **Dietary intake of pesticides, selected elements, and other chemicals: FDA total diet study, June 1984-April 1986.** *Journal of Aoac International* 78 : 910-921.

Chem Codes: Chemical of Concern: PNB,MOM,CBF,ADC; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. The U.S. Food and Drug Administration conducts the Total Diet Study to determine dietary intakes of selected pesticides, industrial chemicals, and elements (including radionuclides). The results reported here reflect the sampling period from June 1984 to April 1986. The study involves retail purchase of foods representative of the total diet of the U.S. population, preparation for table-ready consumption, and individual analyses of 234 items depicting the diets of 8 population groups. The diets were based on 2 nationwide food consumption surveys. The data presented represent 8 food collections (also termed "market baskets") in regional metropolitan areas during the 2-year period. Dietary intakes of over 90 analytes are presented for the 8 population groups, which range from infants to elderly adults. Intakes of selected population groups are compared with representative previous findings. As reported previously, average daily intakes are well below acceptable limits.
KEYWORDS: Mathematical Biology and Statistical Methods
KEYWORDS: Biochemical Studies-General
KEYWORDS: Nutrition-Pathogenic Diets
KEYWORDS: Food Technology-General
KEYWORDS: Food Technology-Evaluations of Physical and Chemical Properties (1970-)
KEYWORDS: Food Technology-Preparation
KEYWORDS: Toxicology-Foods
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health-Public Health Administration and Statistics
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control
KEYWORDS: Hominidae

271. Gunderson, E. L. (95). **Dietary intake of pesticides, selected elements, and other chemicals: FDA total diet study, June 1984-April 1986.** *Journal of Aoac International* 78 : 910-921.

Chem Codes: Chemical of Concern: PNB,MOM,CBF,ADC; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. The U.S. Food and Drug Administration conducts the Total Diet Study to determine dietary intakes of selected pesticides, industrial chemicals, and elements (including radionuclides). The results reported here reflect the sampling period from June 1984 to April 1986. The study involves retail purchase of foods representative of the total diet of the U.S. population, preparation for table-ready consumption, and individual analyses of 234 items depicting the diets of 8 population groups. The diets were based on 2 nationwide food consumption surveys. The data presented represent 8 food

collections (also termed "market baskets") in regional metropolitan areas during the 2-year period. Dietary intakes of over 90 analytes are presented for the 8 population groups, which range from infants to elderly adults. Intakes of selected population groups are compared with representative previous findings. As reported previously, average daily intakes are well below acceptable limits.
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KEYWORDS: Biochemical Studies-General
KEYWORDS: Nutrition-Pathogenic Diets
KEYWORDS: Food Technology-General
KEYWORDS: Food Technology-Evaluations of Physical and Chemical Properties (1970-)
KEYWORDS: Food Technology-Preparation
KEYWORDS: Toxicology-Foods
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health-Public Health Administration and Statistics
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control
KEYWORDS: Hominidae

272. Gunderson, E. L. (95). **FDA total diet study, July 1986-April 1991, dietary intakes of pesticides, selected elements, and other chemicals.** *Journal of Aoac International* 78 : 1353-1363.

Chem Codes: Chemical of Concern: PNB,MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. The U.S. Food and Drug Administration conducts the Total Diet Study to determine dietary intakes of selected pesticides, industrial chemicals, and elements (including radionuclides). This paper report results for the sampling period July 1986 to April 1991. The study involves retail purchase of foods representative of the "total diet" of the U.S. population, preparation for "table-ready" consumption, and individual analyses of 234 items making up the diets of 8 population groups. The diets were based on 2 nationwide food consumption surveys. The data presented represent 21 food collections (also termed "market baskets") in regional metropolitan areas during the 5-year period. Dietary intakes of nearly 120 analytes are presented for elderly adults. Intakes of selected population groups are compared with representative findings from earlier Total Diet Study sampling periods. As reported previously, average daily intakes are well below acceptable limits.
KEYWORDS: General Biology-Institutions
KEYWORDS: Biochemical Studies-General
KEYWORDS: Nutrition-Pathogenic Diets
KEYWORDS: Toxicology-Foods
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health-Public Health Administration and Statistics
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control
KEYWORDS: Hominidae

273. Gunderson, E. L. (95). **FDA total diet study, July 1986-April 1991, dietary intakes of pesticides, selected elements, and other chemicals.** *Journal of Aoac International* 78 : 1353-1363.

Chem Codes: Chemical of Concern: PNB,MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. The U.S. Food and Drug Administration conducts the Total Diet Study to determine dietary intakes of selected pesticides, industrial chemicals, and elements (including radionuclides). This paper report results for the sampling period July 1986 to April 1991. The study involves retail purchase of foods representative of the "total diet" of the U.S. population, preparation for "table-ready" consumption, and individual analyses of 234 items making up the diets of 8 population groups. The diets were based on 2 nationwide food consumption surveys. The data presented represent 21 food collections (also termed "market baskets") in regional metropolitan areas during the 5-year period. Dietary intakes of nearly 120 analytes are presented for elderly adults. Intakes of selected population groups are compared with representative findings from earlier Total Diet Study sampling periods. As reported previously, average daily intakes are well below acceptable limits.
KEYWORDS: General Biology-Institutions

KEYWORDS: Biochemical Studies-General
KEYWORDS: Nutrition-Pathogenic Diets
KEYWORDS: Toxicology-Foods
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health-Public Health Administration and Statistics
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control
KEYWORDS: Hominidae

274. Guo, Y. L., Wang, B. J., Lee, C. C., and Wang, J. D. (**Prevalence of dermatoses and skin sensitisation associated with use of pesticides in fruit farmers of southern Taiwan.**

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEATH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Objectives Agricultural workers are known to have occupational skin diseases. The prevalence and pattern of skin diseases are unknown in Taiwanese fruit farmers. The objective of this study is to determine the work exposure, prevalence of skin diseases, and sensitivity to common skin allergens and agricultural chemicals in fruit farmers of southern Taiwan. Methods 122 fruit farmers who regularly prepared and sprayed pesticides and a group of 63 printing press workers with no known exposure to pesticides were examined and patch tested with common skin allergens and agricultural chemicals. The farmers were also interviewed for their work habits, use of protective clothing, and exposure to pesticides. Results Most farmers reported regular use of hat, boots, and mask, but not gloves, raincoat, and goggles. This resulted in frequent skin contact with pesticides especially on the hands and face. About 30% of farmers had hand dermatitis, and more than two thirds had pigmentati
KEYWORDS: Mathematical Biology and Statistical Methods
KEYWORDS: Social Biology
KEYWORDS: Behavioral Biology-Human Behavior
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Pathology
KEYWORDS: Integumentary System-General
KEYWORDS: Integumentary System-Pathology
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Immunology and Immunochemistry-Immunopathology
KEYWORDS: Allergy
KEYWORDS: Public Health-Public Health Administration and Statistics
KEYWORDS: Public Health: Environmental Health-Occupational Health
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Public Health: Epidemiology-Organic Diseases and Neoplasms
KEYWORDS: Pest Control
KEYWORDS: Hominidae

275. Gupta, R. C., Goad, J. T., and Kadel, W. L. (92). **Characteristic Changes in LDH and Its Isoenzymes as Biomarker Under the Influence of Acute Methomyl Toxicity.** *FASEB (Fed.Am.Soc.Exp.Biol.)J.* 6: A1307.

Chem Codes: Chemical of Concern: MOM; Rejection Code: ABSTRACT.

276. Hammock, B. D. and Skerritt, J. H. (95). **DIAGNOSTICS FOR PLANT AGROCHEMICALS A MEETING OF CHEMISTRY AND IMMUNOASSAY AU - GEE SJ.** *Skerritt, J. H. And R. Appels (Ed.). Biotechnology in Agriculture, No. 13. New Diagnostics in Crop Sciences. Xi+338p. Cab International: Wallingford, England, Uk. Isbn 0-85198-934-9.* 0 : 243-276.

Chem Codes: MOM,MLT,CBF,ADC; Rejection Code: METHODS.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER PESTICIDE CONTAMINATION INSECTICIDE HERBICIDE FUNGICIDE ANALYTICAL METHOD DIAGNOSTIC METHOD
KEYWORDS: Biochemical Methods-General

KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-General
KEYWORDS: Plant Physiology
KEYWORDS: Agronomy-General
KEYWORDS: Pest Control
KEYWORDS: Angiospermae

277. Hammock, B. D. and Skerritt, J. H. (95). **DIAGNOSTICS FOR PLANT AGROCHEMICALS A MEETING OF CHEMISTRY AND IMMUNOASSAY AU - GEE SJ.** *Skerritt, J. H. And R. Appels (Ed.). Biotechnology in Agriculture, No. 13. New Diagnostics in Crop Sciences. Xi+338p. Cab International: Wallingford, England, Uk. Isbn 0-85198-934-9.* 0 : 243-276.

Chem Codes: Chemical of Concern: MOM,MLT,CBF,ADC; Rejection Code: METHODS.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER PESTICIDE CONTAMINATION INSECTICIDE HERBICIDE FUNGICIDE ANALYTICAL METHOD DIAGNOSTIC METHOD
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
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KEYWORDS: Plant Physiology
KEYWORDS: Agronomy-General
KEYWORDS: Pest Control
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278. Hammock, B. D. and Skerritt, J. H. (95). **DIAGNOSTICS FOR PLANT AGROCHEMICALS A MEETING OF CHEMISTRY AND IMMUNOASSAY AU - GEE SJ.** *Skerritt, J. H. And R. Appels (Ed.). Biotechnology in Agriculture, No. 13. New Diagnostics in Crop Sciences. Xi+338p. Cab International: Wallingford, England, Uk. Isbn 0-85198-934-9.* 0 : 243-276.

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KEYWORDS: Agronomy-General
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KEYWORDS: Angiospermae

279. Han, J. C. (1975Sep-Oct). **Absence of nitroso formation from (14C) methomyl and sodium nitrite under simulated stomach conditions.** *J Agric Food Chem 1975 Sep-Oct;23(5):892-6.* 23: 892-6.

Chem Codes: Chemical of Concern: MOM; Rejection Code: MODEL, METHOD.

280. Hansen, C. (**THE USE OF ENVIRONMENTAL SAFETY FACTORS IN DENMARK.** *British Crop Protection Council. Brighton Crop Protection Conference: Pests and Diseases, 1996, Vols. 1-3; International Conference, Brighton, England, Uk, November 18-21, 1996. Xxiv+446p.(Vol. 1); Xxiv+311p.(Vol. 2); Xxiv+481p.(Vol. 3) British Crop Protection Council (Bcpc): Farnham, England, Uk. Isbn 0-948404-99-X.; 0 (0). 1996. 537-548.*

Chem Codes: Chemical of Concern: SZ,MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER MEETING PAPER EUROPEAN COMMISSION DIRECTIVE 91-414 ANNEX VI PESTICIDE RISK ASSESSMENT ENVIRONMENTAL SAFETY TOXICOLOGY PESTICIDES DENMARK EUROPE

KEYWORDS: General Biology-Institutions
KEYWORDS: General Biology-Conservation
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Pest Control

281. Hara, A. H. and Kaya, H. K. (82). **Effects of selected insecticides and nematicides on the in vitro development of the entomogenous nematode Neoaplectana carpocapsae .** *Journal of nematology [j. Nematol.]* 14: 486-491.

Chem Codes: MOM; Rejection Code: IN VITRO.
Abstract: The effects of organophosphates (mevinphos, phenamiphos, trichlorfon), carbamates (carbofuran, methomyl, oxamyl), a formamidine (chlordimeform), a synthetic pyrethroid (fenvalerate), a chlorinated hydrocarbon (methoxychlor), and an insect growth regulator (diflubenzuron) on in vitro development and reproduction of N. carpocapsae were tested by incorporating each chemical into a nematode rearing medium. Organophosphates and carbamates adversely affected development and reproduction at concentrations greater than or equal to 0.1 mg/ml. Phenamiphos was the most toxic, with no nematode reproduction at 0.01 mg/ml. Inoculated infective juveniles developed to adults with some of the organophosphates and carbamates, but limited or no reproduction occurred. Chlordimeform inhibited development at 1.0 mg/ml, while diflubenzuron, fenvalerate, and methoxychlor did not significantly ($P > 0.05$) reduce reproduction at 1.0 mg/ml. The organophosphate and carbamate nematicides in use for control of plant-parasitic nematodes may be toxic to N. carpocapsae in the soil.

282. Hara, A. H. and Kaya, H. K. (82). **Effects of selected insecticides and nematicides on the in vitro development of the entomogenous nematode Neoaplectana carpocapsae .** *Journal of nematology [j. Nematol.]* 14: 486-491.

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283. Harvey, J. Jr. (75). **Metabolism of Aldicarb and Methomyl.** *Environ.Qual.Saf.Suppl.* 3: 389-393.

Chem Codes: Chemical of Concern: MOM,ADC; Rejection Code: METABOLISM.

284. Harvey, J. Jr. (75). **Metabolism of Aldicarb and Methomyl.** *Environ.Qual.Saf.Suppl.* 3: 389-393.

Chem Codes: Chemical of Concern: MOM,ADC; Rejection Code: METABOLISM.

285. Harvey, J. Jr and Pease, H. L. (1973Sep-Oct). **Decomposition of methomyl in soil.** *J Agric Food Chem 1* 21: 784-6.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO SPECIES.

286. Hatrik, S. and Tekel, J. (96). **Extraction methodology and chromatography for the determination of residual pesticides in water.** *Journal of Chromatography a* 733 : 217-233.

Chem Codes: Chemical of Concern: SZ,MTL,MOM,CBF,ADC; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. The contemporary state of the determination of pesticide residues and some of their transformation products is reviewed. The review covers the chromatographic determination of herbicides, insecticides and some important fungicide residues and their toxic transformation products (substituted anilines, chlorophenols, ethylenethiourea) in various types of water samples. Advantages and drawbacks of gas and liquid chromatography in this type of analysis are discussed. The emphasis is placed on multi-residue analytical methods with the required limit of quantification (LOQ < 0.1 mug l-1) and recovery. Various aspects of the isolation, preconcentration and clean-up of pesticide residue extracts from water samples are discussed (liquid-liquid extraction, liquid-solid extraction and supercritical fluid extraction). The characteristics of a modern chromatographic method for the determination of pesticide residues and their transformation products are summarized and trends in t
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KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control

288. He, F., Xu, H., Qin, F., Xu, L., Huang, J., and He, X. (98). **Intermediate myasthenia syndrome following acute organophosphates poisoning: An analysis of 21 cases.** *Human & Experimental Toxicology* 17 : 40-45.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. 1. Twenty-one cases out of 272 patients of acute organophosphates poisoning were diagnosed as intermediate syndrome (IMS) with a prevalence at 7.7%. The responsible OP insecticides included parathion, omethoate and some OP containing pesticide mixtures. IMS occurred mainly in severe OP poisoning patients who recovered from the acute cholinergic crisis at 7-75 h after the onset of acute poisoning. 2. Muscular weakness appeared in the following three categories of muscles: (1) neck flexors and proximal limb muscles; (2) muscles innervated by motor cranial nerves and/or (3) respiratory muscles. Blood acetylcholinesterase activity was persistently inhibited. Electroneuromyography (ENMG) with repetitive nerve stimulation (RNS) at frequencies of 20 Hz or 30 Hz in seven patients showed decrements of common muscle action potentials during the presence of myasthenia in five patients and became normal when their muscle strength recovered. 3. Mild IMS recovered within 2-7 days and
KEYWORDS: Biochemical Studies-General
KEYWORDS: Enzymes-General and Comparative Studies

KEYWORDS: Pathology
KEYWORDS: Pathology
KEYWORDS: Pathology
KEYWORDS: Blood
KEYWORDS: Respiratory System-General
KEYWORDS: Muscle-General
KEYWORDS: Nervous System-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Pest Control
KEYWORDS: Hominidae

289. Helweg, A. (92). **DEGRADATION OF PESTICIDES IN SUBSURFACE SOIL.** *Anderson, J. P. E., Et Al. (Ed.). Proceedings of the International Symposium on Environmental Aspects of Pesticide Microbiology* Symposium, Sigtuna, Sweden, August 17-21, 1992. 337p. Department of Microbiology Swedish University of Agricultural Sciences: Uppsala, Sweden. Illus. Paper. Isbn 91-576-4609-0.; 0 : 249-265.

Chem Codes: Chemical of Concern: SZ,MTL,MOM,CBF,ADC; Rejection Code: MICROBE.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM MICROBIAL DEGRADATION CHEMICAL DEGRADATION
KEYWORDS: General Biology-Symposia
KEYWORDS: Biochemical Studies-General
KEYWORDS: Metabolism-General Metabolism
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
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290. Helweg, A. (92). **DEGRADATION OF PESTICIDES IN SUBSURFACE SOIL.** *Anderson, J. P. E., Et Al. (Ed.). Proceedings of the International Symposium on Environmental Aspects of Pesticide Microbiology* Symposium, Sigtuna, Sweden, August 17-21, 1992. 337p. Department of Microbiology Swedish University of Agricultural Sciences: Uppsala, Sweden. Illus. Paper. Isbn 91-576-4609-0.; 0 : 249-265.

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291. Hennion, M. C. (98). **Applications and validations of immunoassays for pesticides analysis.** *Analusis* 26 : M149-M155.

Chem Codes: Chemical of Concern: SZ,PNB,MTL,MOM,ADC,CBF; Rejection Code: METHODS.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Immunoassay techniques provide a simple, powerful and inexpensive method for pesticide analysis which has been widely used in monitoring programs especially in the US. Their rapid and recent development witnesses of their increasing acceptance and is the result from the demonstration of quality and validity compared to more traditional techniques.
KEYWORDS: Biochemical Methods-General

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KEYWORDS: Immunology and Immunochemistry-General
KEYWORDS: Public Health: Environmental Health-Air

293. Hennion, M. C. and Barcelo, D. (98). **Strengths and limitations of immunoassays for effective and efficient use for pesticide analysis in water samples: A review.** *Analytica Chimica Acta* 362 : 3-34.

Chem Codes: SZ,MTL,MOM,MLT,CBF,ADC; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Immunoassay techniques provide a simple, powerful and inexpensive method for pesticide analysis. However, the acceptance of immunoassays is dependent on the demonstration of quality and validity compared to more traditional techniques. In this review, primarily, the knowledge and the fundamentals of immunoassay methods are given in order to make good use of immunoassays, especially of ELISA tests. Special attention is given to a better understanding of the high selectivity and sensitivity which is attained for some immunoassays and not for others. It is also explained why some immunoassays are a quantitative method whereas others can only be used as a screening method. The cross-reactivity process, the effect of the sample matrix and the data interpretation are illustrated by numerous examples from the literature. Other formats, especially flow-injection immunoassays, dipstick immunoassay and liposome-amplified immunoassays are presented. Quality assurance and guideline
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296. Hennion, M. C., Cau-Dit-Coumes, C., and Pichon, V. (98). **Trace analysis of polar organic pollutants in aqueous samples: Tools for the rapid prediction and optimisation of the solid-phase extraction parameters.** *Journal of Chromatography a* 823 : 147-161.

Chem Codes: Chemical of Concern: SZ,MOM,ADB,CBF; Rejection Code: CHEM METHOD.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. A method development is given for predicting the main solid-phase extraction parameters with emphasis to polar analytes which are poorly extracted using popular C18 silicas. Recoveries and breakthrough curves have been modelled according to the sample volume. From the knowledge of the sample volume to be handled for the required detection level in the sample, the prediction of the necessary retention factor in water, log kw, can be done in order to have recoveries at least above 85%. The selection of the sorbents and amounts of sorbents allowing the predicted log kw values is discussed according to the knowledge of interactions between analyte, matrix and common reversed-phases sorbents (standard C18 silicas, specifically designed C18 silica for polar analytes, apolar copolymers, carbon-based sorbents).
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Public Health: Environmental Health-Air

297. Henriques, W., Jeffers, R. D., Lacher, T. E Jr, and Kendall, R. J. (97). **Agrochemical use on banana plantations in Latin America: Perspectives on ecological risk.** *Environmental Toxicology and Chemistry* 16 : 91-99.

Chem Codes: Chemical of Concern: PNB,MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Developing tropical nations have greatly expanded their agricultural production during the past decade. Substantial areas of tropical ecosystems have been altered to accommodate agriculture. Banana cultivation is responsible for much of this habitat alteration. Substantial use of agricultural chemicals is required to successfully cultivate bananas, and this has raised concern over the

effects of these chemicals on workers, wildlife, and tropical environments in general. We review the practice of banana cultivation and address the major chemical inputs to plantations. Numerous cases of pesticide-related health problems in Latin American plantation workers have been documented, and most were attributable to incorrect use and handling. A review of known wildlife-related impacts of agricultural chemicals commonly used in banana plantations raises substantial concerns about the large-scale environmental impacts in tropical terrestrial and aquatic environments. We recommend t
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KEYWORDS: Ecology
KEYWORDS: Biochemical Studies-General
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299. Hiemstra, M. and De, K. O. K. A (94). **DETERMINATION OF N-METHYLCARBAMATE PESTICIDES IN ENVIRONMENTAL WATER SAMPLES USING AUTOMATED ON-LINE TRACE ENRICHMENT WITH EXCHANGEABLE CARTRIDGES IN HIGH-PERFORMANCE LIQUID CHROMATOGRAPHY.** *Journal of Chromatography a* 667 : 155-166.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: METHODS.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM RESEARCH ARTICLE POLLUTION REPEATABILITY DETECTION LIMIT EXTRACTION ELUTION ANALYTICAL METHOD
KEYWORDS: Ecology
KEYWORDS: Biochemical Methods-General
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KEYWORDS: Biophysics-Bioengineering
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
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300. Hiemstra, M. and De, K. O. K. A (94). **DETERMINATION OF N-METHYLCARBAMATE PESTICIDES IN ENVIRONMENTAL WATER SAMPLES USING AUTOMATED ON-LINE TRACE ENRICHMENT WITH EXCHANGEABLE CARTRIDGES IN HIGH-PERFORMANCE LIQUID CHROMATOGRAPHY.** *Journal of Chromatography a* 667 : 155-166.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: METHODS.

ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM RESEARCH ARTICLE POLLUTION REPEATABILITY DETECTION LIMIT EXTRACTION ELUTION ANALYTICAL METHOD
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KEYWORDS: Biophysics-Bioengineering
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control

301. Hill, R. H. Jr, Needham, L. L., and Liddle, J. A. (86). **The laboratory's role in environmental health emergency investigations.** *J Toxicol Clin Toxicol 1986;24(5):363-74.* 24: 363-74.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO TOX DATA.
ABSTRACT: An emergency environmental health investigation of a mass poisoning of unknown origin is a multidiscipline effort that requires the cooperation and close communication of epidemiologists, toxicologists, and chemists. The laboratory's role in this effort is important; special instruments, knowledge, and experience are needed. Our approach to such an investigation is discussed and past cases are used as illustrations. The role of the analytical chemist is presented, and the major resources needed for these investigations are described.

302. Ho, S. H. and Sudderluddin, K. I. (76). **An in vitro study of the non-specific esterases of the melon fly, Dacus cucurbitae Coq. and their reactions with organophosphate and carbamate compounds.** *Comp Biochem Physiol C 1976;54(2):95-7.* 54: 95-7.

Chem Codes: Chemical of Concern: MOM; Rejection Code: IN VITRO.

303. Hollingsworth, R. G., Tabashnik, B. E., Johnson, M. W., Messing, R. H., and Ullman, D. E. (97). **Relationship Between Susceptibility to Insecticides and Fecundity Across Populations of Cotton Aphid (Homoptera: Aphididae).** *J.Econ.Entomol.* 90: 55-58.

Chem Codes: User Define 2: WASHT,CORE
Chemical of Concern: MOM,EFV,EN; Rejection Code: REFS CHECKED/REVIEW.

304. Holman, R. E., Leidy, R. B., and Walker, A. E. (2000). **Evaluation of selected pesticides in North Carolina surface water supplies: Intake study.** *Journal of the american water resources association [j. Am. Water resour. Assoc.]. Vol. 36, no. 1, pp. 75-86. Feb 2000.*

Chem Codes: MOM,ADC,CBF; Rejection Code: NO SPECIES.
Abstract: Studies were conducted to analyze the presence of 11 selected pesticides in 12 surface water supply intakes in the Piedmont and coastal plain regions of North Carolina. Samples were assayed using enzyme linked immunosorbent assays (ELISAs). Samples with pesticide detection of 1 mu g/L or greater were extracted and confirmed using gas chromatography/mass spectrometry (GC/MS). Detection limits of the immunosorbent assays for pesticide residues were generally an order of magnitude higher than GC/MS. Atrazine was detected in approximately 45 percent of the samples, and on two occasions was at or above the lifetime Maximum Contaminant Level of 3.0 mu g/L set by the Environmental Protection Agency for an annual average in finished drinking water. Metolachlor was detected in 58 percent of the samples. Of the remaining nine pesticides, including carbaryl, aldicarb, 2,4-D, chlorpyrifos, acetochlor, methomyl, carbofuran, alachlor, and chlorothalonil, only aldicarb, 2,4-D, and chlorpyrifos were detected in less than 9 percent of the samples for each pesticide.

305. Holman, R. E., Leidy, R. B., and Walker, A. E. (2000). **Evaluation of selected pesticides in North Carolina surface water supplies: Intake study.** *Journal of the american water resources association [j. Am. Water resour. Assoc.]. Vol. 36, no. 1, pp. 75-86. Feb 2000.*

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306. Holman, R. E., Leidy, R. B., and Walker, A. E. (2000). **Evaluation of selected pesticides in North Carolina surface water supplies: Intake study.** *Journal of the american water resources association [j. Am. Water resour. Assoc.]. Vol. 36, no. 1, pp. 75-86. Feb 2000.*

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: NO SPECIES.
Abstract: Studies were conducted to analyze the presence of 11 selected pesticides in 12 surface water supply intakes in the Piedmont and coastal plain regions of North Carolina. Samples were assayed using enzyme linked immunosorbent assays (ELISAs). Samples with pesticide detection of 1 mu g/L or greater were extracted and confirmed using gas chromatography/mass spectrometry (GC/MS). Detection limits of the immunosorbent assays for pesticide residues were generally an order of magnitude higher than GC/MS. Atrazine was detected in approximately 45 percent of the samples, and on two occasions was at or above the lifetime Maximum Contaminant Level of 3.0 mu g/L set by the Environmental Protection Agency for an annual average in finished drinking water. Metolachlor was detected in 58 percent of the samples. Of the remaining nine pesticides, including carbaryl, aldicarb, 2,4-D, chlorpyrifos, acetochlor, methomyl, carbofuran, alachlor, and chlorothalonil, only aldicarb, 2,4-D, and chlorpyrifos were detected in less than 9 percent of the samples for each pesticide.

307. Holstege, D. M., Scharberg, D. L., Tor, E. R., Hart, L. C., and Galey, F. D. (94). **A rapid multiresidue screen for organophosphorus, organochlorine, and N-methyl carbamate insecticides in plant and animal tissues.** *Journal of Aoac International* 77 : 1263-1274.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: NO SPECIES, METHOD.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. A multiresidue screen for the quantitative determination of 43 organophosphorus, 17 organochlorine, and 11 N-methyl carbamate insecticides in 10 g of plant or animal tissues is described. The insecticides are extracted with 5% ethanol in ethyl acetate (v/v). Samples with high lipid content are cleaned up by automated gel permeation chromatography with a 30% ethyl acetate in hexane (v/v) eluant and in-line silica gel minicolumns. Highly pigmented samples are cleaned up with class-specific solid-phase extraction columns. The concentrated extracts are analyzed by selective detection with gas chromatography or liquid chromatography. Recovery of 71 insecticides ranged from 77 to 113%. Analysis of fortified bovine liver (n = 5) resulted in an average recovery of 96 | 4% at the 0.5 to 0.05 mug/g level. Analysis of fortified alfalfa hay (n = 5) resulted in a mean recovery of 94 | 4% at the 0.06 to 0.5 mug/g level, and analysis of fortified fresh tomatoes (n = 5) resulted in an
KEYWORDS: Food Technology-General
KEYWORDS: Toxicology-General
KEYWORDS: Economic Entomology-Chemical and Physical Control

308. Holstege, D. M., Scharberg, D. L., Tor, E. R., Hart, L. C., and Galey, F. D. (94). **A rapid multiresidue screen for organophosphorus, organochlorine, and N-methyl carbamate insecticides in plant and animal tissues.** *Journal of Aoac International* 77 : 1263-1274.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: NO SPECIES, METHOD.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. A multiresidue screen for the quantitative determination of 43 organophosphorus, 17 organochlorine, and 11 N-methyl carbamate insecticides in 10 g of plant or animal tissues is described. The insecticides are extracted with 5% ethanol in ethyl acetate (v/v). Samples with high

lipid content are cleaned up by automated gel permeation chromatography with a 30% ethyl acetate in hexane (v/v) eluant and in-line silica gel minicolumns. Highly pigmented samples are cleaned up with class-specific solid-phase extraction columns. The concentrated extracts are analyzed by selective detection with gas chromatography or liquid chromatography. Recovery of 71 insecticides ranged from 77 to 113%. Analysis of fortified bovine liver (n = 5) resulted in an average recovery of 96 | 4% at the 0.5 to 0.05 mug/g level. Analysis of fortified alfalfa hay (n = 5) resulted in a mean recovery of 94 | 4% at the 0.06 to 0.5 mug/g level, and analysis of fortified fresh tomatoes (n = 5) resulted in an
KEYWORDS: Food Technology-General
KEYWORDS: Toxicology-General
KEYWORDS: Economic Entomology-Chemical and Physical Control

309. Honing, M., Riu, J., Barcelo, D., Van Baar B Lm, and Brinkman, U. At (96). **Determination of ten carbamate pesticides in aquatic and sediment samples by liquid chromatography-ionspray and thermospray mass spectrometry.** *Journal of Chromatography a* 733 : 283-294.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: METHODS.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Ten carbamate pesticides which exhibit large differences in polarity were determined simultaneously in various environmental samples, using both column liquid chromatography (LC)-thermospray (TSP) mass spectrometry (MS) and LC-ionspray (ISP) MS. For sample clean-up, column chromatography with three stationary phases, neutral aluminium oxide, Florisil and aminopropyl-bonded modified silica, were tested. The aminopropyl stationary phase showed the best results, with acetone-dichloromethane (25:75) as eluent; analyte recoveries were 76-100% for all compounds with a relative standard deviation of 2-8%. In the ISP mass spectra of eight of the ten carbamates, the sodium adduct ion, (M+ Na)+, was the base peak, while the protonated molecule, (M+ H)+, was the most abundant ion with carbendazim and aminocarb. An eluent flow-rate between 100 and 300 mul/min was found to be optimum, with optimized nebulizer and drying gas flow-rates of 350 and 15 1/h, respectively. A capillary vo
KEYWORDS: Ecology
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control

310. Honing, M., Riu, J., Barcelo, D., Van Baar B Lm, and Brinkman, U. At (96). **Determination of ten carbamate pesticides in aquatic and sediment samples by liquid chromatography-ionspray and thermospray mass spectrometry.** *Journal of Chromatography a* 733 : 283-294.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: METHODS.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Ten carbamate pesticides which exhibit large differences in polarity were determined simultaneously in various environmental samples, using both column liquid chromatography (LC)-thermospray (TSP) mass spectrometry (MS) and LC-ionspray (ISP) MS. For sample clean-up, column chromatography with three stationary phases, neutral aluminium oxide, Florisil and aminopropyl-bonded modified silica, were tested. The aminopropyl stationary phase showed the best results, with acetone-dichloromethane (25:75) as eluent; analyte recoveries were 76-100% for all compounds with a relative standard deviation of 2-8%. In the ISP mass spectra of eight of the ten carbamates, the sodium adduct ion, (M+ Na)+, was the base peak, while the protonated molecule, (M+ H)+, was the most abundant ion with carbendazim and aminocarb. An eluent flow-rate between 100 and 300 mul/min was found to be optimum, with optimized nebulizer and drying gas flow-rates of 350 and 15 1/h, respectively. A capillary vo
KEYWORDS: Ecology
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control

311. Horton, H. M. and Calabrese, E. J. (86). **Use of a bioactivation system to screen for hemolytic response to environmental agents: Evaluation of six pesticides.** *J. Environ. Sci. Health, part a., Vol. 21a, no. 3, pp. 215-233, 1986*.

Chem Codes: Chemical of Concern: MOM; Rejection Code: IN VITRO.
Abstract: Six pesticides were examined for oxidant stressor effects on Dorset sheep erythrocytes, an animal model with low glucose-6-phosphate dehydrogenase (G-6-PD) activity. The pesticides tested were atrazine, azinphos-methyl, methomyl, parathion, propoxur and zineb. A liver microsomal enzyme system was used to generate metabolites of the parent compounds. The bloodparameters measured were reduced glutathione (GSH) levels and methemoglobin formation.

312. Howard, A. L., Braue, C., and Taylor, L. T. (93). **ANALYSIS OF THIOCARBAMATE PESTICIDES IN APPLES EMPLOYING SFE AND HIGH PERFORMANCE LIQUID CHROMATOGRAPHY COUPLED SULFUR CHEMILUMINESCENCE DETECTION.** *205th Acs (American Chemical Society) National Meeting, Denver, Colorado, Usa, March 28-April 2, 1993. Abstr Pap Am Chem Soc* 205 : Envr 75.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO TOX DATA.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM ABSTRACT FOOD RESIDUE ANALYSIS METHOMYL METHIOCARB EPTAM INSECTICIDE ANALYTICAL METHOD
KEYWORDS: General Biology-Symposia
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Food Technology-Fruits
KEYWORDS: Food Technology-Evaluations of Physical and Chemical Properties (1970-)
KEYWORDS: Food Technology-Preparation
KEYWORDS: Toxicology-Foods
KEYWORDS: Pest Control
KEYWORDS: Rosaceae

313. Howard, A. L., Braue, C., and Taylor, L. T. (93). **FEASIBILITY OF THIOCARBAMATE PESTICIDE ANALYSIS IN APPLES BY SUPERCRITICAL FLUID EXTRACTION AND HIGH-PERFORMANCE LIQUID CHROMATOGRAPHY.** *Journal of Chromatographic Science* 31 : 323-329.

Chem Codes: Chemical of Concern: MOM; Rejection Code: METHODS.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM RESEARCH ARTICLE METHOMYL METHIOCARB EPTAM INSECTICIDE ANALYTICAL METHOD
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Food Technology-Fruits
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Rosaceae

314. Hu, J. Y., Aizawa, T., Asami, M., and Magara, Y. (98). **Analysis of thermolabile and polar pesticides in environmental water with capillary chromatography-frit-fast atom bombardment mass spectrometry.** *Water Science and Technology* 38 : 169-177.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Capillary LCrit-FAB-MS was used for the determination of 24 thermolabile and polar pesticides including 9 neutral/basic and 15 acidic ones which are not amenable to routine GC/MS. The base ions of acidic pesticides in negative mode were a deprotonated molecular ion except for asulam, MCPB, 2,4-DB, and warfarin, and those for neutral/basic pesticides and asulam in positive mode

were a protonated one. More than one diagnostic ion were obtained except for hymexazol and bentazone. High sensitivity was obtained for neutral/basic pesticides and asulam by adopting a mobile phase composed of CH3CN and 0.1% acetic acid, while for the other acidic pesticides, a mobile phase composed of CH3CN and 5 mM din-butylammonium acetate (pH=6.7) was effective. The detection limits of the pesticides were in the range of 10-300 mug/l, except for benazolin whose limit was 1000 mug/l. Environmental samples (1 L) were taken from raw water for water supply and applied to analysis after concentra
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control

315. Hu, Jian-ying, Aizawa, Takako, and Magara, Yasumoto (97). **Evaluation of adsorbability of pesticides in water on powdered activated carbon using octanol-water partition coefficient.** *Water Science and Technology* 35: 219-226.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. The 1-octanol-water partition coefficients (logPow) of seven pesticides, ie., Hymexazol, methomyl, imidacloprid, thiophanatemethyl, carbaryl, linuron, thiobencarb, were determined by RPHPLC method. The relation between these estimated logPow and adsorption isotherm parameters on powdered activated carbon was studied by correlating their logPow values with the Freundlich adsorption parameter, logk, was found to increase with the increase of logPow for the pesticides examined. The activated carbon amount needed for lowering pesticide concentration from 500 mug/l to 50 mug/l was calculated. The amount of activated carbon needed for hymexazol (logPow, 0.11) was 688.5 mg/l, while that for thiobencarb (logPow. 3.78) was 5.1 mg/l, which suggests that pesticides with a high polarity, i.e., a low Pow, are difficult to remove by powdered activated carbon.

316. Huang, J., Lee, S. H., Lin, C., Medici, R., Hack, E., and Myers, A. M. (90). **Expression in yeast of the T-URF13 protein from Texas male-sterile maize mitochondria confers sensitivity to methomyl and to Texas-cytoplasm-specific fungal toxins.** *Embo journal [embo j.]* 9: 339-347.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO TOX DATA.
Abstract: The mitochondrial gene T-urf13 from maize (Zea mays L.) with Texas male-sterile (T) cytoplasm codes for a unique 13 kd polypeptide, T-URF13, which is implicated in cytoplasmic male sterility and sensitivity to the insecticide methomyl and to host-specific fungal toxins produced by Helminthosporium maydis race T (HmT toxin) and Phyllosticta maydis (Pm toxin). A chimeric gene coding for T-URF13 fused to the mitochondrial targeting peptide from the Neurospora crassa ATP synthase subunit 9 precursor was constructed. Expression of this gene in the yeast Saccharomyces cerevisiae yielded a polypeptide that was translocated into the membrane fraction of mitochondria and processed to give a protein the same size as maize T-URF13.

317. Hull, L. A., Hickey, K. D., and Kanour, W. W. (83). **Pesticide usage patterns and associated pest damage in commercial apple orchards of Pennsylvania.** *Journal of economic entomology [j. Econ. Entomol.]* 76: 577-583.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO TOX DATA.
Abstract: Pesticide usage patterns were examined in 20 and 16 commercial apple orchards in Pennsylvania during 1978 and 1979, respectively. The alternate-row middle system of spraying was the predominant method of application being used in 95% of the sprays during the 2-year period. Azinphosmethyl and methomyl were the most frequently used insecticides, whereas benomyl and captan were the most frequently used fungicides. Cyhexatin was the predominantly used acaricide. The most prevalent injuries to the fruit were caused by the leafroller, Platynota idaeusalis (Walker), and the sooty blotch fungus, Gloeodes pomigena (Schw.) Colby. Estimated savings in pesticide costs from all Pennsylvania orchards using integrated pest management tactics were $1.9 and $2.2 million annually for 1978 and 1979, respectively.

318. Hurej, M. and Dutcher, J. D. (94). **Indirect Effect of Insecticides on Convergent Lady Beetle (Coleoptera: Coccinellidae) in Pecan Orchards.** *J.Econ.Entomol.* 87: 1632-1635.

Chem Codes: User Define 2: WASHT,CALFT,CORE
Chemical of Concern: MOM,EFV,PSM,CBL,ES; Rejection Code: NO CONC.

319. Ikebuchi, J., Kotoku, S., Ohtani, M., and Okada, K. (85). **THIN-LAYER CHROMATOGRAPHY WITH FLAME IONIZATION DETECTOR FOR DETERMINATION OF METHOMYL IN SERUM AND URINE USING A RAPID SEP-PAK CARTRIDGE EXTRACTION.** *Eisei Kagaku* 31 : 141-144.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM INSECTICIDE
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Movement (1971-)
KEYWORDS: Pathology
KEYWORDS: Pathology
KEYWORDS: Blood
KEYWORDS: Urinary System and External Secretions-General
KEYWORDS: Toxicology-General
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control

320. Ingram, J. C., Groenewold, G. S., Appelhans, A. D., Delmore, J. E., Olson, J. E., and Miller, D. L. (97). **Direct surface analysis of pesticides on soil, leaves, grass, and stainless steel by static secondary ion mass spectrometry.** *Environmental Science & Technology* 31 : 402-408.

Chem Codes: MOM,CBF,ADC; Rejection Code: METHODS.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Direct surface analyses by static secondary ion mass spectrometry (SIMS) were performed for the following pesticides adsorbed on dandelion leaves, grass, soil, and stainless steel samples: alachlor, atrazine, captan, carbofuran, chlorpyrifos, chlorsulfuron, chlorthal-dimethyl, cypermethrin, 2,4-D, diuron, glyphosate, malathion, methomyl, methyl arsonic acid, mocap, norflurazon, oxyfluorfen, paraquat, temik, and trifluralin. The purpose of this study was to evaluate static SIMS as a tool for pesticide analysis, principally for use in screening samples for pesticides. The advantage of direct surface analysis compared with conventional pesticide analysis methods is the elimination of sample pretreatment including extraction, which streamlines the analysis substantially; total analysis time for SIMS analysis was ca. 10 min/sample. Detection of 16 of the 20 pesticides on all four substrates was achieved. Of the remaining four pesticides, only one (trifluralin) was not detect
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Soil Science-Physics and Chemistry (1970-)
KEYWORDS: Pest Control

321. Ingram, J. C., Groenewold, G. S., Appelhans, A. D., Delmore, J. E., Olson, J. E., and Miller, D. L. (97). **Direct surface analysis of pesticides on soil, leaves, grass, and stainless steel by static secondary ion mass spectrometry.** *Environmental Science & Technology* 31 : 402-408.

Chem Codes: Chemical of Concern: MOM,CBF,ADC; Rejection Code: METHODS.
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KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Soil Science-Physics and Chemistry (1970-)
KEYWORDS: Pest Control

322. Ingram, J. C., Groenewold, G. S., Appelhans, A. D., Delmore, J. E., Olson, J. E., and Miller, D. L. (97). **Direct surface analysis of pesticides on soil, leaves, grass, and stainless steel by static secondary ion mass spectrometry.** *Environmental Science & Technology* 31 : 402-408.

Chem Codes: Chemical of Concern: MOM,CBF,ADC; Rejection Code: METHODS.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Direct surface analyses by static secondary ion mass spectrometry (SIMS) were performed for the following pesticides adsorbed on dandelion leaves, grass, soil, and stainless steel samples: alachlor, atrazine, captan, carbofuran, chlorpyrifos, chlorsulfuron, chlorthal-dimethyl, cypermethrin, 2,4-D, diuron, glyphosate, malathion, methomyl, methyl arsonic acid, mocap, norflurazon, oxyfluorfen, paraquat, temik, and trifluralin. The purpose of this study was to evaluate static SIMS as a tool for pesticide analysis, principally for use in screening samples for pesticides. The advantage of direct surface analysis compared with conventional pesticide analysis methods is the elimination of sample pretreatment including extraction, which streamlines the analysis substantially; total analysis time for SIMS analysis was ca. 10 min/sample. Detection of 16 of the 20 pesticides on all four substrates was achieved. Of the remaining four pesticides, only one (trifluralin) was not detect
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Soil Science-Physics and Chemistry (1970-)
KEYWORDS: Pest Control

323. Iorizzo, L. , Bianchi, A., Gamberini, G., Rubino, A., Missere, M., Minak, G. J., Tabanelli, S., Violante, F. S., and Raffi, G. B. (96). **Assessment of human exposure to pesticides in greenhouses and effectiveness of personal protective devices.** *Arhiv Za Higijenu Rada I Toksikologiju* 47 : 25-33.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. The exposure to pesticides in a group of workers growing vegetables in greenhouses in farms near Rimini in Italy was evaluated. The pesticides used were organophosphorus compounds, organochlorine compounds, carbamates, pyrethroids, amide and anilide derivatives. Measurements were carried out in seven greenhouses randomly selected. The environment was free of atmospheric agents which could have influenced the pesticide concentrations in the indoor air. Two types of chemical sampling were performed: environmental and personal. The latter was done in the liquid for washing hands and by means of pads applied directly to the worker's skin and to the clothes. The aim of the determination of airborne pesticide concentrations was to evaluate mean environmental exposure to pesticides in the sprayed areas. The sampling went on from a fixed point during the entire spraying period. The aim of individual sampling was to determine the active ingredients as contaminants. The values ob
KEYWORDS: Integumentary System-Pathology
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Occupational Health
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control
KEYWORDS: Hominidae

324. Itak, J. A., Selisker, M. Y., Root, C. D., and Herzog, D. P. (96). **Validation of an Immunoassay for Methomyl in Water and Dislodgeable Residues on Grape Leaves.** *Bull.Environ.Contam.Toxicol.* 57: 270-277.

Chem Codes: User Define 2: WASH,SENT
Chemical of Concern: MOM; Rejection Code: IN VITRO.

325. Itak, J. A. , Selisker, M. Y., Root, C. D., and Herzog, D. P. (96). **VALIDATION OF AN IMMUNOASSAY FOR METHOMYL IN WATER AND DISLODGEABLE RESIDUES ON GRAPE LEAVES.** *Bulletin of Environmental Contamination and Toxicology* 57 : 270-277.

Chem Codes: Chemical of Concern: MOM; Rejection Code: IN VITRO.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM RESEARCH ARTICLE INSECTICIDE PESTICIDE ELISA
KEYWORDS: Biochemical Studies-General
KEYWORDS: Enzymes-Methods
KEYWORDS: Toxicology-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Immunology and Immunochemistry-General
KEYWORDS: Pest Control
KEYWORDS: Vitaceae

326. Ito, S., Kudo, K., Imamura, T., Suzuki, T., and Ikeda, N. (98). **Sensitive determination of methomyl in blood using gas chromatography-mass spectrometry as its oxime tert.-butyldimethysilyl derivative.** *Journal of Chromatography B* 713 : 323-330.

Chem Codes: Chemical of Concern: MOM; Rejection Code: CHEM METHODS.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. A sensitive, selective and reliable method was developed to determine methomyl (methyl-N-((methylcarbamoyl)oxylthioacetimidate), a carbamate insecticide in human blood, using gas chromatography-mass spectrometry. Dimethylglyoxime served as an internal standard (I.S.). Methomyl in the blood was converted to its oxime form by sodium hydroxide. The solution made acidic with hydrochloric acid was poured into a column packed with Extrelut. Methomyloxime and I.S. were eluted from the column with a mixture of dichloromethane-ethyl acetate-chloroform (65:25:10), transformed to tert.butyldimethylsilyl derivatives, and analyzed by gas chromatography-mass spectrometry in the electron impact mode. The calibration curves were linear in the concentration range from 1 ng/g to 100 ng/g and 100 ng/g to at least 5000 ng/g. The lower limit of detection was 0.5 ng/g. The absolute recoveries were 72-93% and within-day coefficients of variation were 3.1-5.6% at blood concentrations of 10 and
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Studies
KEYWORDS: Blood
KEYWORDS: Toxicology-General
KEYWORDS: Pest Control

327. Jin, B., Rosen, R. T., Meyer, R., and Rosen, J. D. (97). **DETERMINATION OF DIFFICULT TO ANALYZE PESTICIDES IN LETTUCE AND TOMATOES.** *214th American Chemical Society National Meeting, Las Vegas, Nevada, Usa, September 7-11, 1997. Abstracts of Papers American Chemical Society* 214 : Agro 104.

Chem Codes: Chemical of Concern: MOM,ADC; Rejection Code: NO TOX DATA.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM MEETING ABSTRACT LETTUCE TOMATO CARBAMATES FOOD RESIDUE PESTICIDE PESTICIDES FOODS METHODOLOGY HIGH PERFORMANCE LIQUID CHROMATOGRAPHY PHENYLUREAS MASS SPECTROMETRY ALDICARB METHOMYL MONURON NEBURON SIDURON ACEPHATE ALDICARB SULFONE ALDICARB SULFOXIDE DIURON LINURON METHAMIDOPHOS OXAMYL THIODICARB BIOCHEMISTRY AND BIOPHYSICS VEGETABLE ANALYTICAL METHOD DETERMINATION METHOD
KEYWORDS: General Biology-Symposia
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Studies
KEYWORDS: Food Technology-General
KEYWORDS: Pest Control

328. Jin, B., Rosen, R. T., Meyer, R., and Rosen, J. D. (97). **DETERMINATION OF DIFFICULT TO ANALYZE PESTICIDES IN LETTUCE AND TOMATOES.** *214th American Chemical Society National Meeting, Las Vegas, Nevada, Usa, September 7-11, 1997. Abstracts of Papers American Chemical Society* 214

: Agro 104.

Chem Codes: Chemical of Concern: MOM,ADC; Rejection Code: NO TOX DATA.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM MEETING ABSTRACT LETTUCE TOMATO CARBAMATES FOOD RESIDUE PESTICIDE PESTICIDES FOODS METHODOLOGY HIGH PERFORMANCE LIQUID CHROMATOGRAPHY PHENYLUREAS MASS SPECTROMETRY ALDICARB METHOMYL MONURON NEBURON SIDURON ACEPHATE ALDICARB SULFONE ALDICARB SULFOXIDE DIURON LINURON METHAMIDOPHOS OXAMYL THIODICARB BIOCHEMISTRY AND BIOPHYSICS VEGETABLE ANALYTICAL METHOD DETERMINATION METHOD
KEYWORDS: General Biology-Symposia
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Studies
KEYWORDS: Food Technology-General
KEYWORDS: Pest Control

329. Johnson, K. A., Harper, F. D., and Weisskopf, C. P. (97). **Solid-phase extraction of aldicarb and its metabolites from water and soil.** *Journal of Environmental Quality* 26 : 1435-1438.

Chem Codes: Chemical of Concern: MOM,ADC; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Extraction methods using solid-phase extraction (SPE) cartridges are generally preferred over traditional liquid-liquid extraction methods when they are available. Solid-phase extraction methods require less preparative work, thus increasing sample through-put. A SPE method using a graphite carbon sorbent was developed to extract low concentrations (1-40 mug) of the polar pesticide, aldicarb (2-methyl-2-(methylthio)propionaldehyde O-(methylcarbamoyl) oxime), and its oxidative metabolites, aldicarb sulfoxide (2-methyl-2-(methylsulfinayl)propionaldehyde-O-(methylcarbamoyl) oxime) and aldicarb sulfone (2-methyl-2-(methylsulfonyl) propionaldehyde-O-(methylcarbamoyl) oxime) from water samples. The analytes were removed from a 150-mL water sample by the SPE cartridge and eluted with 2 mL of methanol. Recoveries from water for all three compounds exceeded 90% with coefficients of variation ranging from 3 to 9%. An extraction method was also developed to extract aldicarb and it
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Soil Science-Physics and Chemistry (1970-)
KEYWORDS: Pest Control

330. Johnson, K. A., Harper, F. D., and Weisskopf, C. P. (97). **Solid-phase extraction of aldicarb and its metabolites from water and soil.** *Journal of Environmental Quality* 26 : 1435-1438.

Chem Codes: Chemical of Concern: MOM,ADC; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Extraction methods using solid-phase extraction (SPE) cartridges are generally preferred over traditional liquid-liquid extraction methods when they are available. Solid-phase extraction methods require less preparative work, thus increasing sample through-put. A SPE method using a graphite carbon sorbent was developed to extract low concentrations (1-40 mug) of the polar pesticide, aldicarb (2-methyl-2-(methylthio)propionaldehyde O-(methylcarbamoyl) oxime), and its oxidative metabolites, aldicarb sulfoxide (2-methyl-2-(methylsulfinayl)propionaldehyde-O-(methylcarbamoyl) oxime) and aldicarb sulfone (2-methyl-2-(methylsulfonyl) propionaldehyde-O-(methylcarbamoyl) oxime) from water samples. The analytes were removed from a 150-mL water sample by the SPE cartridge and eluted with 2 mL of methanol. Recoveries from water for all three compounds exceeded 90% with coefficients of variation ranging from 3 to 9%. An extraction method was also developed to extract aldicarb and it
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Soil Science-Physics and Chemistry (1970-)
KEYWORDS: Pest Control

331. Johnson, W. W. and Finley, M. T. (80). **Handbook of Acute Toxicity of Chemicals to Fish and Aquatic Invertebrates.** *Resour.Publ.137, Fish Wildl.Serv., U.S.D.I., Washington, D.C* 98 p. (OECDG Data File) (Publ As 6797).

Chem Codes: EcoReference No.: 666
User Define 2: ECOTOX NA,REPS,WASH,CALF,CORE
Chemical of Concern:
EDT,RSM,Captan,CBF,CBL,DFZ,PSM,24DXY,ACP,ACR,AZ,BS,Captan,CMPH,CPY,DBN,DMB,DMT,DPDP,DS,DU,DZ,FO,GYP,HCCH,HXZ,MDT,MLN,MLT,MOM,MP,Naled,OYZ,PRT,SZ,TBC,TPR; Rejection Code: PUBL AS.

332. Jones, R. L., Hunt, T. W., Norris, F. A., and Harden, C. F. (89). **FIELD RESEARCH STUDIES ON THE MOVEMENT AND DEGRADATION OF THIODICARB AND ITS METABOLITE METHOMYL.** *J Contam Hydrol* 4 : 359-372.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM PESTICIDE SOIL TYPE IRRIGATION RAINFALL HALF-LIFE OVIEDO FLORIDA PALERMO NEW YORK CLAYTON NORTH CAROLINA USA
KEYWORDS: Ecology
KEYWORDS: Biochemical Studies-General
KEYWORDS: Movement (1971-)
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Soil Science-Genesis
KEYWORDS: Soil Science-Physics and Chemistry (1970-)
KEYWORDS: Soil Science-Fertility and Applied Studies (1970-)
KEYWORDS: Pest Control

333. Kamal, M. A. and Al-Jafari, A. A. (99). **Kinetic constants for the inhibition of camel retinal acetylcholinesterase by the carbamate insecticide lannate.** *J Biochem Mol Toxicol* 13: 41-46.

Chem Codes: Chemical of Concern: MOM; Rejection Code: IN VITRO.
ABSTRACT: We have designed this study to determine various kinetic parameters of camel retinal membrane-bound acetylcholinesterase (AChE; EC 3.1.1.7) inhibition by carbamate insecticide lannate [methyl N- inverted question mark inverted question mark(methylamino)carbonyl inverted question markoxy inverted question mark ethanimidothioate]. All these kinetic constants were derived by simple graphical methods. The value of kinetic parameters was estimated as follows: 0.061 microM)(-1), 1.14 (microM)(-1), 0.216 microM, 0.016 min(-1), 0.0741 (gammaM min)(-1) 0.746 microM, and 4.42 microM for velocity constant (Kv), new inhibition constant (Knic), dissociation constant (Kd), carbamylation rate constant (k2c), overall carbamylation rate constant (k'2), 50% inhibition constant (K150), and 99% inhibition constant (K199), respectively. These unique methods may be used to estimate such kinetic parameters for time-dependent inhibition of enzymes by variety of chemicals, insecticides, herbicides, and drugs.

334. Kamrin, M. A. (97). **PESTICIDE PROFILES TOXICITY ENVIRONMENTAL IMPACT AND FATE.** *Kamrin, M. A. (Ed.). Pesticide Profiles: Toxicity, Environmental Impact, and Fate. Xix+676p. Crc Press Publishers Inc.: Boca Raton, Florida, Usa* London, England, Uk. Isbn 1-56670-190-2.; 0 : Xix+676p.

Chem Codes: Chemical of Concern: SZ,RSM,PNB,MTL,MOM,ADC,CBF; Rejection Code: FATE.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK PESTICIDE TOXICITY PESTICIDES ENVIRONMENTAL IMPACT ENVIRONMENTAL FATE PESTICIDE INFORMATION PROFILE TOXICOLOGY INFORMATION BRIEFS EXPOSURE GUIDELINES
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-General
KEYWORDS: Public Health: Environmental Health-Occupational Health
KEYWORDS: Pest Control

335. Kamrin, M. A. (97). **PESTICIDE PROFILES TOXICITY ENVIRONMENTAL IMPACT AND FATE.** *Kamrin, M. A. (Ed.). Pesticide Profiles: Toxicity, Environmental Impact, and Fate. Xix+676p. Crc Press Publishers Inc.: Boca Raton, Florida, Usa* London, England, Uk. Isbn 1-56670-190-2.; 0 : Xix+676p.

Chem Codes: Chemical of Concern: SZ,RSM,PNB,MTL,MOM,ADC,CBF; Rejection Code: FATE.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK PESTICIDE TOXICITY PESTICIDES ENVIRONMENTAL IMPACT ENVIRONMENTAL FATE PESTICIDE INFORMATION PROFILE TOXICOLOGY INFORMATION BRIEFS EXPOSURE GUIDELINES
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-General
KEYWORDS: Public Health: Environmental Health-Occupational Health
KEYWORDS: Pest Control

336. Kan-Do Office and Pesticides Team (95). **Accumulated Pesticide and Industrial Chemical Findings from a Ten-Year Study of Ready-to-Eat Foods.** *Journal of Aoac International* 78 : 614-630.

Chem Codes: Chemical of Concern: PNB,MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. This report lists the pesticide and industrial chemicals found in the ready-to-eat foods tested repetitively for 10 years through the U.S. Food and Drug Administrations's Revised Market Basket Study. The study operated from 1982 to 1991. During that time 37 market baskets, each containing 234 food items that represented about 5000 food types in American diets covering all age groups, including infants and children, were collected. Each food item was individually prepared for eating; that is, it was opened, unwrapped, washed, peeled, sliced, formulated by recipe, or cooked. Each item was then composited and analytically screened for about 300 different chemicals, including chlorphenoxy acids, ethylenethiourea, methyl carbamates, organochlorines, organophosphates, organosulfurs, phenylureas, and pyrethroids. Overall, less than 1% of the potential of 2.5 million findings occurred for the 10-year study period. In total, 138 different chemical residues accounted for 17,050 a
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biochemical Studies-Minerals
KEYWORDS: Food Technology-General
KEYWORDS: Food Technology-Evaluations of Physical and Chemical Properties (1970-)
KEYWORDS: Toxicology-Foods
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Paleobiology

337. Kan-Do Office and Pesticides Team (95). **Accumulated Pesticide and Industrial Chemical Findings from a Ten-Year Study of Ready-to-Eat Foods.** *Journal of Aoac International* 78 : 614-630.

Chem Codes: Chemical of Concern: PNB,MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. This report lists the pesticide and industrial chemicals found in the ready-to-eat foods tested repetitively for 10 years through the U.S. Food and Drug Administrations's Revised Market Basket Study. The study operated from 1982 to 1991. During that time 37 market baskets, each containing 234 food items that represented about 5000 food types in American diets covering all age groups, including infants and children, were collected. Each food item was individually prepared for eating; that is, it was opened, unwrapped, washed, peeled, sliced, formulated by recipe, or cooked. Each item was then composited and analytically screened for about 300 different chemicals, including chlorphenoxy acids, ethylenethiourea, methyl carbamates, organochlorines, organophosphates, organosulfurs, phenylureas, and pyrethroids. Overall, less than 1% of the potential of 2.5 million findings occurred for the 10-year study period. In total, 138 different chemical residues accounted for 17,050 a
KEYWORDS: Biochemical Studies-General
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KEYWORDS: Food Technology-Evaluations of Physical and Chemical Properties (1970-)
KEYWORDS: Toxicology-Foods
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Paleobiology

338. Kannan, N., Jayaraman, J., Janarthanan, R., and Sridharan, S. (85). **Disappearance of dislodgable residues of methomyl from leaves and vegetables in Tamilnadu (India).** *Int J Environ Anal Chem 1985;23(1-2):69-75.* 23: 69-75.

Chem Codes: Chemical of Concern: MOM; Rejection Code: METHODS.
ABSTRACT: The dislodgable residues of methomyl from leaves and vegetables were determined by a single-step methanol extraction followed by reversed-phase HPLC. The residues on the bhendi vegetables and leaves were several times higher than on the brinjal vegetables and leaves. The pesticide, however, dissipates rapidly under the South Indian climatic conditions resulting in undetectable residues within three days of spraying.

339. Kaplan, L. A., Standley, L. J., and Newbold, J. D. (95). **Impact On Water Quality Of High And Low Density Applications Of Spent Mushrooms Substrate To Agricultural Lands.** 3: 55-63.

Chem Codes: Chemical of Concern: Cu; Rejection Code: SURVEY.
general biology-conservation, resource management/ methods, materials and apparatus, general-field apparatus/ biochemical studies-general/ biochemical studies-minerals/ toxicology-environmental and industrial toxicology/ public health: environmental health-sewage disposal and sanitary measures/ public health: environmental health-air, water and soil pollution/ soil science-physics and chemistry (1970-)/ soil science-fertility and applied studies (1970-)/ pest control, general/ pesticides/ herbicides/ basidiomycetes/ spermatophyta/ leguminosae biosis copyright: biol abs. we studied the influence of spent mushroom substrate (sms) land application on water resources. four study sites, including mushroom farms with low or high density land applications of sms, and two controls, an alfalfa field and a woodland, were instrumented with soilwater lysimeters and groundwater monitoring wells. water samples were collected during the dormant season (winter) and growing season (spring). samples were analyzed for a number of water quality parameters, including dissolved organic carbon (doc), dissolved organic nitrogen (don), ammonia, chloride, nitrate, nitrite, phosphate, sulfate, aluminum, cadmium, calcium, chromium, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, silicon, sodium, and zinc. additional analyses were performed for pesticides commonly used in the cultivation of alfalfa or corn, or for insect control, including methomyl, dimethoate, hexazinone, atrazine, diuron and permethrin. ar agricultural sites had elevated salt concentrations relative to the woodland site. the mushroom farm where sms was applied in high concentrations had salt concentrations in the soilwater that were 10 to 100 times higher than the other agricultural sites. of particular note were ammonium, nitrate, chloride, sulfate, calcium, magnesium, sodium, and potassium. each of these were also elevated in the groundwater. the high salt concentrations were reflected in measurements of electrical conductivity. doc and don concentrations were also elevated in the soilwater and groundwater. groundwater from each agricultural site, including the agricultural control, exceeded the primary drinking water standard for nitrate. no pesticide residues were detected in well or lysimeter water collected at either site amended with sms. water samples collected from the woodland and at the alfalfa field not receiving sms contained part per trillion quantities of a few pesticides.

340. Kaplan, L. A., Standley, L. J., and Newbold, J. D. (95). **Impact on water quality of high and low density applications of spent mushrooms substrate to agricultural lands.** *Compost Science & Utilization* 3 : 55-63.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. We studied the influence of spent mushroom substrate (SMS) land application on water resources. Four study sites, including mushroom farms with low or high density land applications of SMS, and two controls, an alfalfa field and a woodland, were instrumented with soilwater lysimeters and groundwater monitoring wells. Water samples were collected during the dormant season (winter) and growing season (spring). Samples were analyzed for a number of water quality parameters, including dissolved organic carbon (DOC), dissolved organic nitrogen (DON), ammonia, chloride, nitrate, nitrite, phosphate, sulfate, aluminum, cadmium, calcium, chromium, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, silicon, sodium, and zinc. Additional analyses were performed for pesticides commonly used in the cultivation of alfalfa or corn, or for insect control, including methomyl, dimethoate, hexazinone, atrazine, diuron and permethrin. AR agricultural sites had elevated sa
KEYWORDS: General Biology-Conservation

KEYWORDS: Methods
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biochemical Studies-Minerals
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Sewage Disposal and Sanitary Measures
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Soil Science-Physics and Chemistry (1970-)
KEYWORDS: Soil Science-Fertility and Applied Studies (1970-)
KEYWORDS: Pest Control
KEYWORDS: Basidiomycetes
KEYWORDS: Spermatophyta
KEYWORDS: Leguminosae

341. Kaspi, C. I. and Siedow, J. N. (93). **Cross-Linking of the cms-T Maize Mitochondrial Pore-Forming Protein URF13 by N,N'-Dicyclohexylcarbodiimide and Its Effect on URF13 Sensitivity to Fungal Toxins.** *J.Biol.Chem.* 268: 5828-5833.

Chem Codes: Chemical of Concern: MOM; Rejection Code: BACTERIA/IN VITRO/NO DURATION.

342. Kennedy, E. R., Lin, J. J., Reynolds, J. M., and Perkisn, J. B. (97). **A sampling and analytical method for the simultaneous determination of multiple organonitrogen pesticides in air.** *American Industrial Hygiene Association Journal* 58 : 720-725.

Chem Codes: MOM,CBF,ADC; Rejection Code: SURVEY.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. An air sampling and analytical method was developed for organonitrogen pesticides using a combined filter and XAD-2 sorbent sampler and high performance liquid chromatography-ultraviolet detection. The method was evaluated for 14 organonitrogen pesticides by National Institute for Occupational Safety and Health evaluation guidelines and procedures. Evaluation experiments addressed limits of detection and quantitation, analytical recovery, sampler capacity, sample stability, and precision and bias over a range of 1 2 to 240 mug per sample. Samples were stable when stored for up to 30 days under either ambient or refrigerated conditions. Based on the finding of this work, 10 of the 14 compounds studied (aldicarb, captan, carbaryl, carbofuran, chlorpropham, diuron, formetanate, methiocarb, oxamyl, propham) can be successfully determined simultaneously using one method with an accuracy of better than |25% of the true value with 95% confidence. Two other compounds (carbendaz
KEYWORDS: Ecology
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Physiology
KEYWORDS: Pest Control
KEYWORDS: Hominidae

343. Kennedy, E. R., Lin, J. J., Reynolds, J. M., and Perkisn, J. B. (97). **A sampling and analytical method for the simultaneous determination of multiple organonitrogen pesticides in air.** *American Industrial Hygiene Association Journal* 58 : 720-725.

Chem Codes: Chemical of Concern: MOM,CBF,ADC; Rejection Code: SURVEY.
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KEYWORDS: Ecology

KEYWORDS: Biophysics-General Biophysical Techniques
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344. Kennedy, E. R., Lin, J. J., Reynolds, J. M., and Perkisn, J. B. (97). **A sampling and analytical method for the simultaneous determination of multiple organonitrogen pesticides in air.** *American Industrial Hygiene Association Journal* 58 : 720-725.

Chem Codes: Chemical of Concern: MOM,CBF,ADC; Rejection Code: SURVEY.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. An air sampling and analytical method was developed for organonitrogen pesticides using a combined filter and XAD-2 sorbent sampler and high performance liquid chromatography-ultraviolet detection. The method was evaluated for 14 organonitrogen pesticides by National Institute for Occupational Safety and Health evaluation guidelines and procedures. Evaluation experiments addressed limits of detection and quantitation, analytical recovery, sampler capacity, sample stability, and precision and bias over a range of 1 2 to 240 mug per sample. Samples were stable when stored for up to 30 days under either ambient or refrigerated conditions. Based on the finding of this work, 10 of the 14 compounds studied (aldicarb, captan, carbaryl, carbofuran, chlorpropham, diuron, formetanate, methiocarb, oxamyl, propham) can be successfully determined simultaneously using one method with an accuracy of better than |25% of the true value with 95% confidence. Two other compounds (carbendaz
KEYWORDS: Ecology
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Physiology
KEYWORDS: Pest Control
KEYWORDS: Hominidae

345. Kennedy, G. L. Jr. and Graepel, G. J. (91). **Acute Toxicity in the Rat Following Either Oral or Inhalation Exposure.** *Toxicology Letters: Toxicol.Lett.* 56: 317-326.

Chem Codes: Chemical of Concern: MOM,ACL,ACY,BNZ,DPPBEE,CTC,CF,CLP,DCE,DPDP,FUR,HCB,MNK,4CE,TOL,3CE; Rejection Code: REFS CHECKED/REVIEW.

346. Kiene, R. P. and Capone, D. G. (86). **Stimulation of methanogenesis by aldicarb and several other N-methyl carbamate pesticides.** *Applied and environmental microbiology [appl. Environ. Microbiol.]* 51: 1247-1251.

Chem Codes: Chemical of Concern: MOM,ADC; Rejection Code: BACTERIA.
Abstract: Aldicarb and several other N-methyl carbamate pesticides stimulated methane production in anaerobic salt marsh soils and organic-rich aquifer soils. Stimulation was biological and linearly related to the amount of carbamate added. Of the four carbamates studied, methomyl gave the greatest stimulation followed by carbaryl, aldicarb, and baygon. The findings suggest that N-methyl carbamates are readily hydrolyzed to monomethylamine (MA) in the presence of an active microbial population under anaerobic conditions and that methanogenesis is stimulated as a result of the consumption of MA by methanogenic bacteria.

347. Kiene, R. P. and Capone, D. G. (86). **Stimulation of methanogenesis by aldicarb and several other N-methyl carbamate pesticides.** *Applied and environmental microbiology [appl. Environ. Microbiol.]* 51: 1247-1251.

Chem Codes: Chemical of Concern: MOM,ADC; Rejection Code: BACTERIA.
Abstract: Aldicarb and several other N-methyl carbamate pesticides stimulated methane production in anaerobic salt marsh soils and organic-rich aquifer soils. Stimulation was biological and linearly related to the amount of carbamate added. Of the four carbamates studied, methomyl gave the greatest stimulation followed by carbaryl, aldicarb, and baygon. The findings suggest that N-methyl carbamates are readily hydrolyzed to monomethylamine (MA) in the presence of an active microbial population under anaerobic conditions and that methanogenesis is stimulated as a result of the consumption of MA by methanogenic bacteria.

348. Kishi, M., Hirschhorn, N., Djajadisastra, M., Satterlee, L. N., Strowman, S., and Dilts, R. (95). **Relationship of pesticide spraying to signs and symptoms in Indonesian farmers.** *Scandinavian Journal of Work Environment & Health* 21 : 124-133.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Objectives: This study assessed correlations between exposure to pesticides and signs and symptoms of pesticide toxicity among Indonesian farmers. Methods: Detailed observations were recorded of spray frequency and pesticide handling, dermal exposure, and the chemicals used. Symptoms of acute illness were reported by the farmers, and signs of poisoning were observed by the interviewers at the time of spraying or within a few hours after it. Results: The spray practices substantially exposed the farmers to pesticides. Signs and symptoms occurred significantly more often during spraying than during nonspraying seasons. Twenty-one percent of the spray operations resulted in three or more neurobehavioral, respiratory, and intestinal signs or symptoms. The number of spray operations per week, the use of hazardous pesticides, and skin and clothes being wetted with the spray solution were significantly and independently associated with the number of signs and symptoms. A dose-
KEYWORDS: General Biology-Institutions
KEYWORDS: Behavioral Biology-Human Behavior
KEYWORDS: Integumentary System-General
KEYWORDS: Nervous System-Pathology
KEYWORDS: Psychiatry-Psychopathology
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Occupational Health
KEYWORDS: Phytopathology-Disease Control
KEYWORDS: Pest Control
KEYWORDS: Hominidae

349. Klassen, W. and Schwartz, P. H. Jr. (85). **ARS Research Program in Chemical Insect Control.** *In: J.L.Hilton (Ed.), Beltsville Symp.in Agricultural Research, Chapter 22, Agricultural Chemicals of the Future, May 16-19, 1983, Rowman and Allanheld Publ., Totowa, NJ* 8: 267-292.

Chem Codes: User Define 2: REPS,CORE,NA
Chemical of Concern: RSM,MOM,ADC; Rejection Code: NO TOX DATA.

350. Klassen, W. and Schwartz, P. H. Jr. (85). **ARS Research Program in Chemical Insect Control.** *In: J.L.Hilton (Ed.), Beltsville Symp.in Agricultural Research, Chapter 22, Agricultural Chemicals of the Future, May 16-19, 1983, Rowman and Allanheld Publ., Totowa, NJ* 8: 267-292.

Chem Codes: User Define 2: REPS,CORE,NA
Chemical of Concern: RSM,MOM,ADC; Rejection Code: NO TOX DATA.

351. Klein, C. D., Johnson, D. R., and Meyers, H. B. (96). **EFFICACY OF VARIOUS BACILLUS THURINGIENSIS AND OVICIDE COMBINATIONS AGAINST BOLLWORM AND TOBACCO BUDWORM 1995.** *Burditt, A. K. Jr. (Ed.). Arthropod Management Tests, Vol. 21. Iv+462p. Entomological Society of America: Lanham, Maryland, Usa. Isbn 0-938522-55-8.* 21 : 254.

Chem Codes: Chemical of Concern: MOM; Rejection Code: BIOLOGICAL TOXICANT.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER
BACILLUS-THURINGIENSIS GOSSYPIUM-HIRSUTUM HELICOVERPA-ZEA HELIOTHIS-VIRESCENS CULTIVAR-DPL 50 LARVIN DIPEL LANNATE DESIGN CURACRON MVP II INSECTICIDE PESTICIDE JEFFERSON COUNTY ARKANSAS USA
KEYWORDS: Agronomy-Fiber Crops
KEYWORDS: Agronomy-Oil Crops
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Field
KEYWORDS: Economic Entomology-Biological Control
KEYWORDS: Economic Entomology-Integrated Control

KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Endospore-Forming Gram-Positives (1992-)
KEYWORDS: Malvaceae
KEYWORDS: Lepidoptera

352. Klein, C. D., Johnson, D. R., and Meyers, H. B. (96). **EVALUATION OF BACILLUS THURINGIENSIS AND OVICIDES FOR CONTROL OF BOLLWORM AND TOBACCO BUDWORM 1995.** *Burditt, A. K. Jr. (Ed.). Arthropod Management Tests, Vol. 21. Iv+462p. Entomological Society of America: Lanham, Maryland, Usa. Isbn 0-938522-55-8.* 21 : 255.

Chem Codes: Chemical of Concern: MOM; Rejection Code: BIOLOGICAL TOXICANT.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER
BACILLUS-THURINGIENSIS GOSSYPIUM-HIRSUTUM HELICOVERPA-ZEA
HELIOTHIS-VIRESCENS CULTIVAR-DPL 50 LARVIN DIPEL LANNATE OVASYN CURACRON
INSECTICIDE PESTICIDE JEFFERSON COUNTY ARKANSAS USA
KEYWORDS: Agronomy-Fiber Crops
KEYWORDS: Agronomy-Oil Crops
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Field
KEYWORDS: Economic Entomology-Biological Control
KEYWORDS: Economic Entomology-Integrated Control
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Endospore-Forming Gram-Positives (1992-)
KEYWORDS: Malvaceae
KEYWORDS: Lepidoptera

353. Klein, R. R. and Koeppe, D. E. (85). **Mode of Methomyl and Bipolaris maydis (Race T) Toxin in Uncoupling Texas Male-Sterile Cytoplasm Corn Mitochondria.** *Plant Physiol.* 77: 912-916.

Chem Codes: User Define 2: WASH,SENT
User Define 3: 03/03/2004,bin - 03/04/2004
Chemical of Concern: MOM; Rejection Code: IN VITRO.

354. Klopman, G. , Contreras, R., Rosenkranz, H. S., and Waters, M. D. (85). **STRUCTURE-GENOTOXIC ACTIVITY RELATIONSHIPS OF PESTICIDES COMPARISON OF THE RESULTS FROM SEVERAL SHORT-TERM ASSAYS.** *Mutat Res* 147 : 343-356.

Chem Codes: Chemical of Concern: SZ,RSM,PNB,MOM,ADC,CBF; Rejection Code: BACTERIA.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM SALMONELLA-TYPHIMURIUM
SACCHAROMYCES-CEREVISIAE MOUSE LYMPHOMA CELL CARBAMATE THIOCARBAMATE
ORGANOPHOSPHATE HALO-AROMATIC INSECTICIDE HERBICIDE FUNGICIDE DNA DAMAGE
GENE MUTATION HISTIDINE REVERSION
KEYWORDS: General Biology-Information
KEYWORDS: Genetics and Cytogenetics-General
KEYWORDS: Genetics and Cytogenetics-Plant
KEYWORDS: Genetics and Cytogenetics-Animal
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biochemical Studies-Nucleic Acids
KEYWORDS: Biochemical Studies-Proteins
KEYWORDS: Metabolism-Proteins
KEYWORDS: Metabolism-Nucleic Acids
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Genetics of Bacteria and Viruses
KEYWORDS: Microbiological Apparatus
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control

355. Klopman, G. , Contreras, R., Rosenkranz, H. S., and Waters, M. D. (85). **STRUCTURE-GENOTOXIC ACTIVITY RELATIONSHIPS OF PESTICIDES COMPARISON OF THE RESULTS FROM SEVERAL SHORT-TERM ASSAYS.** *Mutat Res* 147 : 343-356.

Chem Codes: Chemical of Concern: SZ,RSM,PNB,MOM,ADC,CBF; Rejection Code: BACTERIA.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM SALMONELLA-TYPHIMURIUM SACCHAROMYCES-CEREVISIAE MOUSE LYMPHOMA CELL CARBAMATE THIOCARBAMATE ORGANOPHOSPHATE HALO-AROMATIC INSECTICIDE HERBICIDE FUNGICIDE DNA DAMAGE GENE MUTATION HISTIDINE REVERSION
KEYWORDS: General Biology-Information
KEYWORDS: Genetics and Cytogenetics-General
KEYWORDS: Genetics and Cytogenetics-Plant
KEYWORDS: Genetics and Cytogenetics-Animal
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biochemical Studies-Nucleic Acids
KEYWORDS: Biochemical Studies-Proteins
KEYWORDS: Metabolism-Proteins
KEYWORDS: Metabolism-Nucleic Acids
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Genetics of Bacteria and Viruses
KEYWORDS: Microbiological Apparatus
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control

356. Klotz, D. M., Arnold, S. F., and Mclachlan, J. A. (97). **Inhibition of 17 beta-estradiol and progesterone activity in human breast and endometrial cancer cells by carbamate insecticides.** *Life Sciences* 60 : 1467-1475.

Chem Codes: Chemical of Concern: MOM,ADC; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Using a combination of in vitro assays we have examined the capacities of contemporary-exposure chemicals to modulate human estrogen and human progesterone receptor (hER and hPR) activity in human breast and endometrial cancer cells. The carbamate insecticides aldicarb, Baygon (propoxur), bendiocarb, carbaryl, methomyl, and oxamyl were used in this study. The carbamates alone weakly activated estrogen- or progesterone-responsive reporter genes in breast and endometrial cancer cells. All of the carbamates decreased estradiol- or progesterone-induced reporter gene activity in the breast and endometrial cancer cells. In whole cell competition binding assays, the carbamates demonstrated a limited capacity to displace radiolabeled estrogen or progesterone from ER or PR. Based on the results presented here, the carbamate insecticides may represent a class of chemicals which function through a mechanism separate from ligand-binding and, therefore, may act as general endocrine
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biochemical Studies-Proteins
KEYWORDS: Biochemical Studies-Sterols and Steroids
KEYWORDS: Reproductive System-Physiology and Biochemistry
KEYWORDS: Endocrine System-Gonads and Placenta
KEYWORDS: Endocrine System-Pituitary
KEYWORDS: Toxicology-General
KEYWORDS: Pest Control
KEYWORDS: Hominidae

357. Klotz, D. M., Arnold, S. F., and Mclachlan, J. A. (97). **Inhibition of 17 beta-estradiol and progesterone activity in human breast and endometrial cancer cells by carbamate insecticides.** *Life Sciences* 60 : 1467-1475.

Chem Codes: Chemical of Concern: MOM,ADC; Rejection Code: HUMAN HEALTH.
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KEYWORDS: Endocrine System-Gonads and Placenta
KEYWORDS: Endocrine System-Pituitary
KEYWORDS: Toxicology-General
KEYWORDS: Pest Control
KEYWORDS: Hominidae

358. Knowles, D. E. and Richter, B. E. (91). **THE USE OF MODIFIED MOBILE PHASES IN SFC EFFECTS ON THE RETENTION AND STABILITY OF SELECTED PESTICIDES.** *Hrc (J High Resolut Chromatogr)* 14 : 689-691.

Chem Codes: Chemical of Concern: MOM,ADC; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM ALDICARB METHOMYL DIFLUBENZURON PHENMEDIPHAM SUPERCRITICAL FLUID CHROMATOGRAPHY METHOD APPLICATION
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
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KEYWORDS: Biophysics-Molecular Properties and Macromolecules
KEYWORDS: Pest Control

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KEYWORDS: Biochemical Methods-General
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KEYWORDS: Biophysics-Molecular Properties and Macromolecules
KEYWORDS: Pest Control

360. Koeber, R. and Niessner, R. (96). **Screening of pesticide-contaminated soil by supercritical fluid extraction (SFE) and high-performance thin-layer chromatography with automated multiple development (HPTLC).** *Fresenius' Journal of Analytical Chemistry* 354 : 464-469.

Chem Codes: Chemical of Concern: MOM,CBF,ADC; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. A method for screening of pesticide-contaminated soil was developed. The extraction is carried out by supercritical carbon dioxide (CO2) with methanol as a modifier. The different components of the extracts are separated by high-performance thin-layer chromatography with automated multiple development (HPTLC) and evaluated densitometrically. The technique can be carried out without any previous clean-up step. Compared with other extraction techniques, SFE has the advantages of reducing the amount of co-extracted soil contents, which can seriously deteriorate the results. A 35-step development of the TLC-plate with gradient elution offers an application over a wide range of polarity.

Migration data for 107 pesticides, recoveries and detection limits for 20 pesticides were determined.
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Toxicology-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Soil Science-General
KEYWORDS: Pest Control

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ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. A method for screening of pesticide-contaminated soil was developed. The extraction is carried out by supercritical carbon dioxide (CO2) with methanol as a modifier. The different components of the extracts are separated by high-performance thin-layer chromatography with automated multiple development (HPTLC) and evaluated densitometrically. The technique can be carried out without any previous clean-up step. Compared with other extraction techniques, SFE has the advantages of reducing the amount of co-extracted soil contents, which can seriously deteriorate the results. A 35-step development of the TLC-plate with gradient elution offers an application over a wide range of polarity. Migration data for 107 pesticides, recoveries and detection limits for 20 pesticides were determined.
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KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Toxicology-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Soil Science-General
KEYWORDS: Pest Control

362. Korth, K. L. and Levings, C. S Iii (93). **Baculovirus expression of the maize mitochondrial protein URF13 confers insecticidal activity in cell cultures and larvae.** *Proc Natl Acad Sci U S a* 90 : 3388-3392.

Chem Codes: Chemical of Concern: MOM; Rejection Code: IN VITRO.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. The URF13 protein, which is encoded by the mitochondrial gene T-urf13, is responsible for cytoplasmic male sterility and pathotoxin sensitivity in the Texas male-sterile cytoplasm (cms-T) of maize. Mitochondrial sensitivity to two host-specific fungal toxins (T toxins) is mediated by the interaction of URF13 and T toxins to form pores in the inner mitochondrial membrane. A carbamate insecticide, methomyl, mimics the effects of T toxins on isolated cms-T mitochondria. URF13 was expressed in Spodoptera frugiperda (fall armyworm) cells (Sf9) in culture and in Trichoplusia ni (cabbage looper) larvae with a baculovirus vector. In insect cells, URF13 forms oligomeric structures in the membrane and confers T toxin or methomyl sensitivity. Adding T toxin or methomyl to Sf9 cells producing URF13 causes permeabilization of plasma membranes. In addition, URF13 is toxic to insect cells grown in culture without T toxins or methomyl; even a T-toxin-insensitive mutant form of URF13 is
KEYWORDS: Cytology and Cytochemistry-Plant
KEYWORDS: Genetics and Cytogenetics-Plant
KEYWORDS: Biochemical Methods-Nucleic Acids
KEYWORDS: Biochemical Methods-Proteins
KEYWORDS: Biochemical Studies-Nucleic Acids
KEYWORDS: Biochemical Studies-Proteins
KEYWORDS: Metabolism-Proteins
KEYWORDS: Metabolism-Nucleic Acids
KEYWORDS: Reproductive System-Pathology
KEYWORDS: Nervous System-Pathology

KEYWORDS: Toxicology-General
KEYWORDS: Developmental Biology-Embryology-General and Descriptive
KEYWORDS: Genetics of Bacteria and Viruses
KEYWORDS: Tissue Culture
KEYWORDS: Virology-Animal Host Viruses
KEYWORDS: Plant Physiology
KEYWORDS: Plant Physiology
KEYWORDS: Phytopathology-Diseases Caused by Animal Parasites
KEYWORDS: Phytopathology-Parasitism and Resistance
KEYWORDS: Economic Entomology-Biological Control
KEYWORDS: Invertebrata
KEYWORDS: Baculoviridae (1993-)
KEYWORDS: Gramineae
KEYWORDS: Lepidoptera

363. Krause, R. T. (85). **LIQUID CHROMATOGRAPHIC DETERMINATION OF N METHYLCARBAMATE INSECTICIDES AND METABOLITES IN CROPS 1. COLLABORATIVE STUDY.** *J Assoc Off Anal Chem* 68 : 726-733.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO TOX DATA.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM GRAPES POTATOES MULTIRESIDUE METHOD OFFICIAL 1ST ACTION
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biochemical Studies-Lipids
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Food Technology-General
KEYWORDS: Food Technology-Evaluations of Physical and Chemical Properties (1970-)
KEYWORDS: Toxicology-Foods
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Plant Physiology
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control

364. Krause, R. T. (85). **LIQUID CHROMATOGRAPHIC DETERMINATION OF N METHYLCARBAMATE INSECTICIDES AND METABOLITES IN CROPS 2. ANALYTICAL CHARACTERISTICS AND RESIDUE FINDINGS.** *J Assoc Off Anal Chem* 68 : 734-741.

Chem Codes: MOM,ADC,CBF; Rejection Code: CHEM METHOD.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM ALDICARB ALDICARB SULFONE BUFENCARB CARBARYL CARBOFURAN METHIOCARB METHIOCARB SULFOXIDE METHOMYL OXAMYL TABLE-READY FOOD PRODUCT FOOD AND DRUG ADMINISTRATION
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Toxicology-Foods
KEYWORDS: Pest Control

365. Krause, R. T. (85). **LIQUID CHROMATOGRAPHIC DETERMINATION OF N METHYLCARBAMATE INSECTICIDES AND METABOLITES IN CROPS 2. ANALYTICAL CHARACTERISTICS AND RESIDUE FINDINGS.** *J Assoc Off Anal Chem* 68 : 734-741.

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KEYWORDS: Biochemical Methods-General
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KEYWORDS: Biophysics-General Biophysical Techniques
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366. Krause, R. T. (85). **LIQUID CHROMATOGRAPHIC DETERMINATION OF N METHYLCARBAMATE INSECTICIDES AND METABOLITES IN CROPS 2. ANALYTICAL CHARACTERISTICS AND RESIDUE FINDINGS.** *J Assoc Off Anal Chem* 68 : 734-741.

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KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Toxicology-Foods
KEYWORDS: Pest Control

367. Krieger, R. I., Brutsche-Keiper, P., Crosby, H. R., and Krieger, A. D. (2003Feb). **Reduction of pesticide residues of fruit using water only or Plus Fit Fruit and Vegetable Wash.** *Bull Environ Contam Toxicol 2003 Feb;70(2):213-8.* 70: 213-8.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.

368. Krill, R. M. and Sonzogni, W. C. (86). **CHEMICAL MONITORING OF WISCONSIN'S USA GROUNDWATER.** *Am Water Works Assoc J* 78 : 70-75.

Chem Codes: Chemical of Concern: SZ,PNB,MTL,MOM,CBF,ADC; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM PESTICIDE POLLUTION
KEYWORDS: Ecology
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control

369. Krill, R. M. and Sonzogni, W. C. (86). **CHEMICAL MONITORING OF WISCONSIN'S USA GROUNDWATER.** *Am Water Works Assoc J* 78 : 70-75.

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KEYWORDS: Ecology
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control

370. Kuehlmann, D. Hh (88). **THE SENSITIVITY OF CORAL REEFS TO ENVIRONMENTAL POLLUTION.** *Ambio* 17 : 13-21.

Chem Codes: Chemical of Concern: MOM; Rejection Code: SURVEY, MIXTURE, EFFLUENT.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM CORAL-UNICELLULAR ALGAE SYMBIOSIS MUNICIPAL SEWAGE EUTROPHICATION COASTAL AREA DENUDATION PESTICIDE-HERBICIDE CONTAMINATION RADIOACTIVE CONTAMINATION
KEYWORDS: Radiation-Radiation Effects and Protective Measures

KEYWORDS: Ecology
KEYWORDS: Ecology
KEYWORDS: Ecology
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Sewage Disposal and Sanitary Measures
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Agronomy-Weed Control
KEYWORDS: Pest Control
KEYWORDS: Invertebrata
KEYWORDS: Algae-Unspecified
KEYWORDS: Cnidaria

371. Lander, F. and Hinke, K. (92). **Indoor application of anti-cholinesterase agents and the influence of personal protection on uptake.** *Arch Environ Contam Toxicol* 22 : 163-166.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. The relationship between plasma-cholinesterase (ChE) measures and the uptake of anti-cholinesterase agents among 125 greenhouse sprayers in connection with normal working conditions were studied. An in-season ChE depression was observed indicating absorption of organophosphate (OP) or carbamate insecticides ($p = 0.0001$). The in-season enzyme depression among sprayers, exclusively exposed to carbamates ($p = 0.06$), probably reflects chronic percutaneous or oral uptake in the intervals between spraying by cultivating pretreated flowers. The frequency of applications ($p = 0.03$) and the wearing of protective clothings ($p = 0.02$) seems to be working habits, which significantly influenced the ChE activities, whereas gloves or face mask did not ($p > 0.05$). Especially, the wearing of whole-body protective clothing ($p = 0.008$) are of particular value in preventing percutaneous absorption.
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biochemical Studies-Proteins
KEYWORDS: Enzymes-Physiological Studies
KEYWORDS: Metabolism-General Metabolism
KEYWORDS: Blood
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Occupational Health
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Horticulture-General
KEYWORDS: Pest Control
KEYWORDS: Plantae-Unspecified
KEYWORDS: Hominidae

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373. Lander, F., Pike, E., Hinke, K., Brock, A., and Nielsen, J. B. (92). **Anti-cholinesterase agents uptake during cultivation of greenhouse flowers.** *Arch Environ Contam Toxicol* 22 : 159-162.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. The cholinesterase (ChE) activities were measured in-season and out-season in a total of 204 greenhouse workers and 360 non-exposed controls. No seasonal ChE variation were observed in the controls, whereas an in-season depression was seen in the workers, indicating an uptake of anti-cholinesterase agents during cultivation of greenhouse flowers in the intervals between sprayings ($p = 0.0001$). The anti-ChE agents applied seem to persist in the greenhouse and cause continued subtoxic uptake for weeks since last application. Wearing of protective gloves did not prevent the uptake. Thus, chronic percutaneous and oral uptake occurs as a result of cultivation of greenhouse flowers.
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KEYWORDS: Biochemical Studies-Proteins
KEYWORDS: Enzymes-Chemical and Physical
KEYWORDS: Metabolism-General Metabolism
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Occupational Health
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375. Lander, F. and Ronne, M. (95). **Frequency of sister chromatid exchange and hematological effects in pesticide-exposed greenhouse sprayers.** *Scandinavian Journal of Work Environment & Health* 21 : 283-288.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Objectives: A cross-sectional study was conducted to investigate whether exposure to pesticides in greenhouses causes hemato- or genotoxic damage in sprayers. Methods: The frequency of sister chromatid exchange (SCE) in cultured lymphocytes and the number of blood erythrocytes, leucocytes, and thrombocytes were studied among 134 greenhouse sprayers exposed to a complex mixture of almost 50 insecticides, fungicides, and growth regulators and among 157 referents. Results: The hematological profiles did not differ between the exposed and unexposed groups. The SCE frequency was elevated in nonsmoking, but not in currently smoking sprayers when compared with the referents. There was a slight tendency towards an increased SCE frequency with decreasing degree of protection during pesticide applications. The frequency of pesticide applications, lifetime pesticide exposure, and in season plasma-cholinesterase inhibition (as an estimate of current exposure to organophosphates and
KEYWORDS: Cytology and Cytochemistry-Human
KEYWORDS: Genetics and Cytogenetics-Human
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biochemical Studies-Nucleic Acids
KEYWORDS: Blood
KEYWORDS: Blood
KEYWORDS: Psychiatry-Addiction-Alcohol
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Occupational Health
KEYWORDS: Pest Control
KEYWORDS: Hominidae

376. Lander, F. and Ronne, M. (95). **Frequency of sister chromatid exchange and hematological effects in pesticide-exposed greenhouse sprayers.** *Scandinavian Journal of Work Environment & Health* 21 : 283-288.

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KEYWORDS: Genetics and Cytogenetics-Human
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biochemical Studies-Nucleic Acids
KEYWORDS: Blood
KEYWORDS: Blood
KEYWORDS: Psychiatry-Addiction-Alcohol
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Occupational Health
KEYWORDS: Pest Control
KEYWORDS: Hominidae

377. Learmount, J., Chapman, P., and Macnicoll, A. (2002Dec). **Impact of an insecticide resistance strategy for house fly (Diptera: Muscidae) control in intensive animal units in the United Kingdom.** *J Econ Entomol*

2002 Dec;95(6):1245-50. 95: 1245-50.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO TOX DATA.
ABSTRACT: A strategy for house fly (Musca domestica L.) control in intensive animal units in the United Kingdom was proposed by the Pesticide Safety Directorate (PSD) of the Ministry of Agriculture, Fisheries and Food in 1993. An advice leaflet was circulated to farmers, and label recommendations for insecticides used to control house flies were altered to prevent their long-term and frequent use. A study was carried out between 1996 and 1998 to gather data on insecticide use and resistance in house fly populations and compared with results from a study carried out in 1990-1992 to assess the impact of the 1993 label recommendations. As in the 1990-1992 study, resistance to methomyl, azamethiphos and pyrethrins + piperonyl butoxide was assessed. Larvicide tests with cyromazine, which had recently been released in the United Kingdom, were also included in this study. Most of the farmers claimed to have received and read the PSD insecticide advice leaflet, and half claimed to have altered insecticide treatments as a result. Comparing results for insecticides used before and after 1993, the proportion of farmers claiming to have used each of the insecticides had decreased. However, there had been no amelioration in resistance to synergised pyrethrins, and the number of house fly populations with reduced response to the insecticide baits had increased between 1990-1992 and 1996-1998. All the house fly populations tested were fully susceptible to cyromazine. There is an urgent need, therefore, to devise new strategies and particularly to minimize the risk of selecting for resistance to cyromazine.

378. Lehotay, S. J. (97). **Supercritical fluid extraction of pesticides in foods.** *Journal of Chromatography a* 785 : 289-312.

Chem Codes: Chemical of Concern: SZ,PNB,MTL,MOM,CBF,ADC; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. This article summarizes research findings involving the supercritical fluid extraction (SFE) of pesticides in food and other tissue matrices. Emphasis is placed on multiresidue analysis of pesticides in nonfatty foods, including some previously unpublished aspects of SFE in this application. Brief overviews of pesticides and traditional multiresidue methods are given, followed by discussion of results for SFE applications in the pesticide residue analysis of foods.
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Toxicology-Foods

379. Lehotay, S. J. (97). **Supercritical fluid extraction of pesticides in foods.** *Journal of Chromatography a* 785 : 289-312.

Chem Codes: Chemical of Concern: SZ,PNB,MTL,MOM,CBF,ADC; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. This article summarizes research findings involving the supercritical fluid extraction (SFE) of pesticides in food and other tissue matrices. Emphasis is placed on multiresidue analysis of pesticides in nonfatty foods, including some previously unpublished aspects of SFE in this application. Brief overviews of pesticides and traditional multiresidue methods are given, followed by discussion of results for SFE applications in the pesticide residue analysis of foods.
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Toxicology-Foods

380. Leistra, M. (85). **COMPUTER SIMULATIONS OF THE TRANSPORT OF PESTICIDES WITH NONUNIFORM WATER FLOW IN GREENHOUSE SOIL.** *Soil Sci* 140 : 161-169.

Chem Codes: Chemical of Concern: MOM; Rejection Code: MODEL, NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM METHOMYL DIAZINON INSECTICIDES LEACHING
KEYWORDS: General Biology-Information
KEYWORDS: Mathematical Biology and Statistical Methods
KEYWORDS: Biochemical Studies-General

KEYWORDS: Movement (1971-)
KEYWORDS: Soil Science-Physics and Chemistry (1970-)
KEYWORDS: Horticulture-General
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control

381. Leistra, M. and Boesten, J. J Ti (89). **PESTICIDE CONTAMINATION OF GROUNDWATER IN WESTERN EUROPE.** *Agric Ecosyst Environ* 26 : 369-390.

Chem Codes: Chemical of Concern: SZ,EDT,MTL,MOM,ADC; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM HERBICIDE NEMATICIDE AGRICHEMICAL WATER POLLUTION CONTROL ENVIRONMENTAL PROTECTION SOIL LEACHING CONTAMINATION TOXICITY
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Soil Science-Physics and Chemistry (1970-)
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KEYWORDS: Soil Science-Physics and Chemistry (1970-)
KEYWORDS: Pest Control

383. Leistra, M., Dekker, A., and van der Burg, A. M. M. (84). **Computed and measured leaching of the insecticide methomyl from greenhouse soils into water courses.** *Water, air, & soil pollution [water air soil pollut.], Vol. 23, no. 2, pp. 155-167, 1984.*

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO SPECIES.
Abstract: The adsorption of methomyl onto three greenhouse soils was measured and was found to be weak to moderate. The transformation rates in three greenhouse soils were reasonably high with half-lives ranging from about 3 to 14 days. These data were introduced into two computational models of pesticide behavior in simplified greenhouse systems. The computed leaching of methomyl ranged from nil to very small (0.3% of the dose), depending on the transformation rate and the amount of irrigation water. The concentrations measured by HPLC in drainage water from three greenhouses were somewhat higher than computed, although they remained below 1 mu g L super(-1). Various concentrations measured in water courses in an area with many greenhouses were distinctly higher than those measured in drainage water, which may be the result of discharge of surpluses of spray liquid into the water courses.

384. Lemley, A. T., Dowling, K. C., Costella, R. G., and Gamerdinger, A. P. (91). **MODELING THE MOVEMENT OF PESTICIDES IN DYNAMIC FLOW SYSTEMS.** *Fourth Chemical Congress of North America, New York, New York, Usa, August 25-30, 1991. Abstr Pap Am Chem Soc* 202 : Agro 64.

Chem Codes: Chemical of Concern: MOM; Rejection Code: MODEL.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM ABSTRACT METHOMYL ETHOPROP SOIL
KEYWORDS: General Biology-Symposia
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General

KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Soil Science-Physics and Chemistry (1970-)
KEYWORDS: Pest Control

385. Lentza-Rizos, C. (96). **Insecticides authorized for use on olive trees and the relationship between their registration and residues in olive oil.** *Grasas Y Aceites* 47 : 392-396.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. In order to eliminate losses due to insect attack, several insecticides are used on olive trees. Their residues in olive oil constitute an important parameter of its quality and must be monitored regularly and kept as low possible in order to ensure consumer protection. In this paper the insecticides authorized for use on olive trees are listed and their ADIs and Codex Alimentarius MRLs reported. The existing registrations are discussed from the point of view of their residues in oil.
KEYWORDS: Biochemical Studies-General
KEYWORDS: Food Technology-Fats and Oils
KEYWORDS: Toxicology-Foods
KEYWORDS: Horticulture-Tropical and Subtropical Fruits and Nuts
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Oleaceae
KEYWORDS: Insecta-Unspecified

386. Leonard, R. A. (90). **MOVEMENT OF PESTICIDES INTO SURFACE WATERS.** *Cheng, H. H. (Ed.). Sssa (Soil Science Society of America) Book Series, No. 2. Pesticides in the Soil Environment: Processes, Impacts, and Modeling. Xxiii+530p. Soil Science Society of America, Inc.: Madison, Wisconsin, Usa. Illus. Isbn 0-89118-791-X.* 0 : 303-350.

Chem Codes: Chemical of Concern: SZ,MOM; Rejection Code: FATE .
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM RAINFALL RUNOFF DILUTION SEDIMENTATION VEGETATIVE TRAPPING DEGRADATION COMPUTER MODELS
KEYWORDS: General Biology-Information
KEYWORDS: Ecology
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control

387. Levings, Charles S, Dewey, Ralph, and Braun, Carl (97). **Method of detecting toxins using host cells expressing an URF13-T gene.** *Biotechnology Advances* 15: 674.

Chem Codes: Chemical of Concern: MOM; Rejection Code: IN VITRO.

388. Levings III, C. S. and Dewey, R. E. (88). **Molecular Studies of Cytoplasmic Male Sterility in Maize.** *Philos.Trans.R.Soc.Lond.B* 319: 177-185.

Chem Codes: User Define 2: WASH
Chemical of Concern: MOM; Rejection Code: NO CONC.

389. Lewis, T. (97). **CHEMICAL CONTROL.** *Lewis, T. (Ed.). Thrips as Crop Pests. Xii+740p. Cab International: Wallingford, England, Uk* New York, New York, Usa. Isbn 0-85199-178-5.; 0 : 567-593.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: REVIEW.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER THRIP PEST CHEMICAL CONTROL INTEGRATED PEST MANAGEMENT INSECTICIDE ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES
KEYWORDS: Pest Control

KEYWORDS: Economic Entomology-General
KEYWORDS: Invertebrata
KEYWORDS: Thysanoptera

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KEYWORDS: Economic Entomology-General
KEYWORDS: Invertebrata
KEYWORDS: Thysanoptera

391. Li, Z. C., Yost, R. S., and Green, R. E. (98). **Incorporating uncertainty in a chemical leaching assessment.** *Journal of Contaminant Hydrology* 29 : 285-299.

Chem Codes: Chemical of Concern: SZ,MOM,ADC,CBF; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Pesticide leaching models are being used to assist in the regulation and management of pesticides by indicating their potential for leaching to groundwater. Uncertainty in model input data is not, regrettably, included in most pesticide leaching assessments. In the work described here, we use logarithmic transformations of the attenuation factor (AF), a simple process-based index model, to represent uncertainty in a pesticide leaching assessment. Characterization of a wide range of pesticides as 'leachers' or 'non-leachers' for a specific Hawaii hydrogeological setting is facilitated by comparing the log-transformed AF, designated AFR, for each chemical with two reference chemicals for which leaching behavior in Hawaii is known. Defining a mean and uncertainty interval for the AFR index of each chemical being ranked provides a practical method of incorporating data uncertainty into a regulatory protocol.
KEYWORDS: Ecology
KEYWORDS: Biophysics-Biocybernetics (1972-)
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
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KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Soil Science-Fertility and Applied Studies (1970-)
KEYWORDS: Pest Control

393. Liddle, J. A., Kimbrough, R. D., Needham, L. L., Cline, R. E., Smrek, A. L., Yert, L. W., Bayse, D. D., Ellington, A. C., and Dennis, P. A. (79). **A fatal episode of accidental methomyl poisoning.** *Clin Toxicol 1979;15(2):159-67.* 15: 159-67.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: Three fatalities from the accidental ingestion of methomyl, a carbamate pesticide, are reported. The methomyl had been stored in an unlabeled tin can and was accidentally used in preparing "roti," an Indian dish. The identification of the source of the poison through animal tests and further chemical identification is described. The lethal dose of methomyl was estimated to have been between 12 and 15 mg/kg body weight.

394. Lifshitz, M., Rotenberg, M., Sofer, S., Tamiri, T., Shahak, E., and Almog, S. (94). **Carbamate poisoning and oxime treatment in children: A clinical and laboratory study.** *Pediatrics* 93 : 652-655.

Chem Codes: Chemical of Concern: MOM,ADC; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Objective: (1) Retrospective evaluation of the clinical course of carbamate poisoning and the effect of oxime therapy in children. (2) In vitro study of the effect of oximes on the reactivation of carbamylated cholinesterase. Design: (1) Clinical survey: The records of 26 children intoxicated with carbamates were examined retrospectively. The poisoning agents in all cases were positively identified as methomyl or aldicarb by gas chromatography-mass spectrometry. (2) Laboratory study: The direct effect of obidoxime and of pralidoxime on acetylcholinesterase activity in vitro was investigated in normal human packed red blood cells pretreated with an organophosphate (paraoxon) or a carbamate (aldicarb or methomyl). Clinical setting. Pediatric intensive care unit of a teaching hospital. Patients: Twenty-six infants and young children (aged 1 to 8 years) admitted to the pediatric intensive care unit with severe carbamate intoxication. Interventions. All cases had been treate
KEYWORDS: Clinical Biochemistry
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biochemical Studies-Proteins
KEYWORDS: Enzymes-Physiological Studies
KEYWORDS: Pathology
KEYWORDS: Metabolism-Metabolic Disorders
KEYWORDS: Nervous System-Pathology
KEYWORDS: Pharmacology-Drug Metabolism
KEYWORDS: Pharmacology-Clinical Pharmacology (1972-)
KEYWORDS: Toxicology-General
KEYWORDS: Toxicology-Antidotes and Preventative Toxicology (1972-)
KEYWORDS: Pediatrics
KEYWORDS: In Vitro Studies
KEYWORDS: Pest Control
KEYWORDS: Hominidae

395. Lifshitz, M., Rotenberg, M., Sofer, S., Tamiri, T., Shahak, E., and Almog, S. (94). **Carbamate poisoning and oxime treatment in children: A clinical and laboratory study.** *Pediatrics* 93 : 652-655.

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KEYWORDS: In Vitro Studies
KEYWORDS: Pest Control
KEYWORDS: Hominidae

396. Lifshitz, M., Shahak, E., Bolotin, A., and Sofer, S. (97). **Carbamate poisoning in early childhood and in adults.** *J Toxicol Clin Toxicol 1997;35(1):25-7.* 35: 25-7.

Chem Codes: Chemical of Concern: MOM,ADC; Rejection Code: HUMAN HEALTH.
ABSTRACT: OBJECTIVE: Retrospective evaluation of the clinical course of carbamate poisoning in young children and adults. DESIGN: Thirty-six children aged 1 to 8 years (median 2.5 years) and 24 adults aged 17 to 41 years (median 22 years) ingested rat poison resulting in carbamate poisoning. The ingested poisons in all cases were positively identified as methomyl or aldicarb by gas chromatography-mass spectrometry. RESULTS: Symptoms of intoxication in children were compared to those in adults with similar depression of the serum cholinesterase. The predominant symptoms in young children were central nervous system depression and hypotonia. The most common muscarinic effect was diarrhea. In adults, the main signs were miosis and fasciculations. Fasciculations in children were less frequent. Central nervous system depression, hypotonia, and diarrhea were uncommon in adults. CONCLUSION: Based on a relatively large number of carbamate poisonings in young children, we conclude that the clinical presentation differs from adult poisoning manifestations. The absence of classic muscarinic effects does not exclude the possibility of carbamate poisoning in young children with central nervous system depression.

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398. Lifshitz, M., Shahak, E., and Sofer, S. (1999Apr). **Carbamate and organophosphate poisoning in young children.** *Pediatr Emerg Care 1999 Apr;15(2):102-3.* 15: 102-3.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: OBJECTIVE: Retrospective evaluation of the clinical course of carbamate and organophosphate poisoning in young children. DESIGN: The records of 36 children intoxicated with carbamate and 16 children intoxicated with organophosphate (age range: 2 to 8 years, median: 2.8 years) were examined retrospectively. The carbamate agents were identified as methomyl or aldicarb, and the organophosphate as parathion, fenthion,

malathion, and diazinon. The causes of poisoning were accidental ingestion in 46 children and inhalation in six children. CLINICAL SETTING: Pediatric Intensive Care Unit of a teaching hospital. INTERVENTIONS: Gastric lavage was performed, and activated charcoal was administered to all children who had ingested poisonous pesticides. Atropine sulphate was administered intravenously in repeated doses to all children with bradycardia, diarrhea, salivation, and miosis. Obidoxime chloride was administered to patients with organophosphate poisoning and to those in whom the ingested material was unidentified on admission. RESULTS: Predominant symptoms were related to central nervous system depression and severe hypotonia. Other clinical signs such as miosis, diarrhea, salivation, bradycardia, and fasciculation were less frequent, while tearing and diaphoresis were not observed. Pulmonary edema developed in six patients with organophosphte poisoning. Three children required mechanical ventilation for several hours. One child (organophosphate poisoning) died shortly after arrival at the emergency department. All other children recovered completely. CONCLUSION: Based on a relatively large group of young pediatric patients with carbamate and organophosphate poisoning, it is concluded that the clinical presentation differed from those described in adults. Absence of classic muscarinic effects does not exclude the possibility of cholinesterase inhibitor agents poisoning in young children with central nervous system depression.

399. Lifshitz, M., Shahak, E., and Sofer, S. (1999Apr). **Carbamate and organophosphate poisoning in young children.** *Pediatr Emerg Care 1999 Apr;15(2):102-3.* 15: 102-3.

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400. Liu, C. H., Mattern, G. C., Yu, X., Rosen, R. T., and Rosen, J. D. (91). **Multiresidue determination of nonvolatile and thermally labile pesticides in fruits and vegetables by thermospray liquid chromatography/mass spectrometry.** *J Agric Food Chem* 39 : 718-723.

Chem Codes: Chemical of Concern: MOM,ADC; Rejection Code: METHODS.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. A multiresidue method using high-performance liquid chromatography/thermospray/mass spectrometry/selected ion monitoring (HPLC/MS/SIM) to determine 19 thermally labile and nonvolatile pesticides in fruits and vegetables was evaluated. The pesticides were extracted from apples, beans, lettuce, peppers, potatoes, and tomatoes with a slightly modified Luke multiresidue extraction procedure. Aldicarb, aldicarb sulfoxide, bufencarb, carboxin, chlorbromuron, diuron, linuron, methiocarb, metheomyl, metobromuron, monouron, neburon, oxamyl, propoxur, and thiodicarb were analyzed by mass spectrometry in the positive ion mode. Fenvalerate, folpet, iprodione, and oryzalin were analyzed in the negative ion mode. The limits detection of the pesticides in the crops were in range 0.025-1 ppm. For those 14 pesticides with limits of detection of 0.25 ppm and below, recovery studies were performed at the 0.5 ppm fortification level in each of the six crops. Recoveries were between 69 and
KEYWORDS: Biochemical Methods-General

KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Food Technology-Fruits
KEYWORDS: Food Technology-Evaluations of Physical and Chemical Properties (1970-)
KEYWORDS: Toxicology-Foods
KEYWORDS: Plant Physiology
KEYWORDS: Plant Physiology
KEYWORDS: Pest Control

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402. Lopez-Avila, V. and Jones, T. L. (93). **Interlaboratory study of a thermospray-liquid chromatographic/mass spectrometric method for selected N-methyl carbamates, N-methyl carbamoyloximes, and substituted urea pesticides.** *Journal of Aoac International* 76 : 1329-1343.

Chem Codes: MOM,CBF,ADC; Rejection Code: METHODS.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. A thermospray-liquid chromatographic/mass spectrometric (TS-LC) method was evaluated in an interlaboratory study for determining 3 N-methyl carbamates (bendiocarb, carbaryl, and carbofuran), 3 N-methyl carbamoyloximes (aldicarb, methomyl, and oxamyl), 2 substituted urea pesticides (diuron and linuron), and 1 ester of a substituted carbamic acid (carbendazim). The purpose of this study was to establish whether these 9 compounds can be reliably detected and quantitated with this method, and to establish the interlaboratory precision and accuracy of the method with currently available instrumentation. The study design was based on AOAC INTERNATIONAL's blind replicate design with balanced replicates. The samples consisted of solutions of the 9 test compounds in methanol at 3 concentrations that were unknown to the participating laboratories and that covered the linear range of the method. Nine volunteer laboratories participated in the study. Linear regression equations are
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KEYWORDS: Toxicology-General
KEYWORDS: Plant Physiology
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control

405. Lu, F. C. and Dourson, M. L. (92). **Safety/Risk Assessment of Pesticides: Principles, Procedures and Examples.** *Toxicology Letters: Toxicol.Lett.* 64/65: 783-787.

Chem Codes: User Define 2: WASH
Chemical of Concern:
ETN,PPHD,ACR,BMY,GYP,CTN,MOM,PAQT,BFT,FST,AMTL,CHD,Folpet,TBT; Rejection Code: NO SPECIES,DURATION.

406. Lu, X. and Que, H. E. E. Ss (98). **Permeation of methomyl in Lannate L through nitrile gloves.** *Journal of Hazardous Materials* 59 : 279-285.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. The influence of the inert components on the permeation of methomyl in Lannate L water miscible pesticide formulation through 0.64 mm thick unsupported lined nitrile at 30ęC was assessed using an ASTM-type permeation cell with isopropanol liquid collection medium. Gas chromatography/mass spectrometric (GC) analysis of 0.100 ml aliquots of the collection fluid taken every 10 min revealed that the breakthrough time for permeation of methomyl was > 200 min with a steady state permeation rate of 5.24 | 1.00 mug cm-2 min-1. Reconstituted formulation with concentrations of methomyl, methanol and isopropanol being those found by direct GC/MS of Lannate L showed that these components did not explain all the permeation kinetic data./POISONING
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-Molecular Properties and Macromolecules
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Pest Control

407. Luke, M. A., Langham, W. S., Kodama, D. M., Masumoto, H. T., Froberg, J. E., and Doose, G. M. (91). **CURRENT AND FUTURE STATUS OF PESTICIDE MULTIRESIDUE METHODOLOGY.** *Frehse, H. (Ed.). Pesticide Chemistry: Advances in International Research, Development, and Legislation* Seventh International Congress of Pesticide Chemistry, Hamburg, Germany, August 5-10, 1990. Xiv+666p. Vch Verlagsgesellschaft Mbh: Weinheim, Germany; Vch Publishers Inc.: New York, New York, Usa. Illus. Isbn 3-527-28111-8; Isbn 0-89573-975-5.; 0 : 373-382.

Chem Codes: Chemical of Concern: MOM; Rejection Code: METHODS.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM FOOD FEED CONTAMINATION HIGH PERFORMANCE LIQUID CHROMATOGRAPHY GAS CHROMATOGRAPHY LUKE METHOD EXTRACTION PARTITIONING
KEYWORDS: General Biology-Symposia
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Toxicology-Foods
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Animal Production-Feeds and Feeding
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control

408. Machemer, L. H. and Pickel, M. (94). **HEALTH SURVEILLANCE OF PESTICIDE WORKERS A MANUAL FOR OCCUPATIONAL HEALTH PROFESSIONALS CARBAMATE INSECTICIDES .** *Toxicology* 91 : 29-36.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM JOURNAL ARTICLE HUMAN INSECTICIDE ACETYLCHOLINESTERASE
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biochemical Studies-Proteins
KEYWORDS: Enzymes-Chemical and Physical
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Occupational Health
KEYWORDS: Pest Control
KEYWORDS: Hominidae

409. Machemer, L. H. and Pickel, M. (94). **HEALTH SURVEILLANCE OF PESTICIDE WORKERS A MANUAL FOR OCCUPATIONAL HEALTH PROFESSIONALS CARBAMATE INSECTICIDES .** *Toxicology* 91 : 29-36.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.

ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM JOURNAL ARTICLE HUMAN INSECTICIDE ACETYLCHOLINESTERASE
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biochemical Studies-Proteins
KEYWORDS: Enzymes-Chemical and Physical
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Occupational Health
KEYWORDS: Pest Control
KEYWORDS: Hominidae

410. Maddy, K. T., Edmiston, S., and Richmond, D. (90). **ILLNESS INJURIES AND DEATHS FROM PESTICIDE EXPOSURES IN CALIFORNIA USA 1949-1988.** *Ware, G. W. (Ed.). Reviews of Environmental Contamination and Toxicology, Vol. 114. Ix+171p. Springer-Verlag New York Inc.: New York, New York, Usa* Berlin, West Germany. Illus. Isbn 0-387-97207-2; Isbn 3-540-97207-2.; 0 : 57-124.

Chem Codes: Chemical of Concern: RSM,MOM,CBF,ADC,CST; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM REVIEW HUMAN OCCUPATIONAL EXPOSURE
KEYWORDS: Social Biology
KEYWORDS: Biochemical Studies-General
KEYWORDS: Pathology
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health-Public Health Administration and Statistics
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Public Health: Epidemiology-Organic Diseases and Neoplasms
KEYWORDS: Pest Control
KEYWORDS: Hominidae

411. Maddy, K. T., Edmiston, S., and Richmond, D. (90). **ILLNESS INJURIES AND DEATHS FROM PESTICIDE EXPOSURES IN CALIFORNIA USA 1949-1988.** *Ware, G. W. (Ed.). Reviews of Environmental Contamination and Toxicology, Vol. 114. Ix+171p. Springer-Verlag New York Inc.: New York, New York, Usa* Berlin, West Germany. Illus. Isbn 0-387-97207-2; Isbn 3-540-97207-2.; 0 : 57-124.

Chem Codes: Chemical of Concern: RSM,MOM,CBF,ADC,CST; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM REVIEW HUMAN OCCUPATIONAL EXPOSURE
KEYWORDS: Social Biology
KEYWORDS: Biochemical Studies-General
KEYWORDS: Pathology
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health-Public Health Administration and Statistics
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Public Health: Epidemiology-Organic Diseases and Neoplasms
KEYWORDS: Pest Control
KEYWORDS: Hominidae

412. Madhuri, R. J. and Rangaswamy, V. (2002Oct). **Influence of selected insecticides on phosphatase activity in groundnut (Arachis hypogeae L.) soils.** *J Environ Biol 2002 Oct;23(4):393-7.* 23: 393-7.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO SPECIES.
ABSTRACT: Selected insecticides, Chloropyrifos, Dichlorovos, Methyl parathion, Phorate and Methomyl, at concentrations ranging from 0 to 10 kg ha(-1) were tested for their non-target effects towards activity of phosphatases in two soils. In soil samples receiving 2.5 kg ha(-1) of the insecticides Dichlorovos, Phorate and Methomyl and also in soil samples receiving 5.0 kg ha(-1) of the insecticides, Chloropyrifos and Methyl parathion, the activity of phosphatase was significantly more at 20 days period of incubation and decreased progressively with increasing period of incubation.

413. Magee, P. S. (**COMPLEX FACTORS IN HYDROCARBON-WATER SOIL-WATER AND FISH-WATER PARTITIONING.** *Hermens, J. L. M. And A. Opperhuizen (Ed.). Qsar (Quantitative Structure-Activity Relationships) in Environmental Toxicology-Iv; Fourth International Workshop, Veldhoven, Netherlands, September 16-20, 1990. Xxi+705p. Elsevier Science Publishers B.v.: Amsterdam, Netherlands; (Dist. In the Usa and Canada by Elsevier Science Publishing Co., Inc.: New York, New York, Usa). Illus. Isbn 0-444-89471-3.; 0 (0). 1991. 155-178.*

Chem Codes: Chemical of Concern: SZ,MOM; Rejection Code: SURVEY.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM GUPPIES TOXIN BINDING BIOACCUMULATION AQUATIC NARCOSIS MECHANISTIC INSIGHT ENVIRONMENTAL TOXICOLOGY
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-Molecular Properties and Macromolecules
KEYWORDS: Pathology
KEYWORDS: Metabolism-General Metabolism
KEYWORDS: Toxicology-General
KEYWORDS: Soil Science-General
KEYWORDS: Osteichthyes

414. Makihata, N., Kawamoto, T., and Teranishi, K. (2003Apr). **Simultaneous analysis of carbamate pesticides in tap and raw water by LC/ESI/MS.** *Anal Sci 2003 Apr;19(4):543-9.* 19: 543-9.

Chem Codes: MOM,ADC; Rejection Code: METHODS.
ABSTRACT: Ten carbamate pesticides including four suspected endocrine disruptors, methomyl, benomyl (carbendazim), aldicarb and carbaryl, were simultaneously analyzed by LC/ESI/MS. The influence of the matrix on the variation of the ion signal intensities of (M + H)+ and adduct ions was investigated. Although the intensities of three oxamyl ions changed depending on the matrix, the variation in the concentration calculation of oxamyl was reduced by using the sum total of the area value of two ions. The limits of the quantitation of ten pesticides without a concentration procedure were from 0.4 - 30 microg/l. The solid-phase recovery rates of ten pesticides spiked into tap water and raw water were in the range of 69-111%. Using this method, the concentrations of the pesticides in tap and raw water sampled at 14 monitoring points in Hyogo Prefecture were determined. Carbendazim in three raw water samples and carbofuran in one of these three samples were detected at low concentrations (less than 0.32 microg/l).

415. Makihata, N., Kawamoto, T., and Teranishi, K. (2003Apr). **Simultaneous analysis of carbamate pesticides in tap and raw water by LC/ESI/MS.** *Anal Sci 2003 Apr;19(4):543-9.* 19: 543-9.

Chem Codes: Chemical of Concern: MOM,ADC; Rejection Code: METHODS.
ABSTRACT: Ten carbamate pesticides including four suspected endocrine disruptors, methomyl, benomyl (carbendazim), aldicarb and carbaryl, were simultaneously analyzed by LC/ESI/MS. The influence of the matrix on the variation of the ion signal intensities of (M + H)+ and adduct ions was investigated. Although the intensities of three oxamyl ions changed depending on the matrix, the variation in the concentration calculation of oxamyl was reduced by using the sum total of the area value of two ions. The limits of the quantitation of ten pesticides without a concentration procedure were from 0.4 - 30 microg/l. The solid-phase recovery rates of ten pesticides spiked into tap water and raw water were in the range of 69-111%. Using this method, the concentrations of the pesticides in tap and raw water sampled at 14 monitoring points in Hyogo Prefecture were determined. Carbendazim in three raw water samples and carbofuran in one of these three samples were detected at low concentrations (less than 0.32 microg/l).

416. Makihata, N., Kawamoto, T., and Teranishi, K. (2003Apr). **Simultaneous analysis of carbamate pesticides in tap and raw water by LC/ESI/MS.** *Anal Sci 2003 Apr;19(4):543-9.* 19: 543-9.

Chem Codes: Chemical of Concern: MOM,ADC; Rejection Code: METHODS.
ABSTRACT: Ten carbamate pesticides including four suspected endocrine disruptors, methomyl, benomyl (carbendazim), aldicarb and carbaryl, were simultaneously analyzed by LC/ESI/MS. The influence of the matrix on the variation of the ion signal intensities of (M + H)+ and adduct ions was investigated. Although the

intensities of three oxamyl ions changed depending on the matrix, the variation in the concentration calculation of oxamyl was reduced by using the sum total of the area value of two ions. The limits of the quantitation of ten pesticides without a concentration procedure were from 0.4 - 30 microg/l. The solid-phase recovery rates of ten pesticides spiked into tap water and raw water were in the range of 69-111%. Using this method, the concentrations of the pesticides in tap and raw water sampled at 14 monitoring points in Hyogo Prefecture were determined. Carbendazim in three raw water samples and carbofuran in one of these three samples were detected at low concentrations (less than 0.32 microg/l).

417. Mandal, P. K. (96). **EFFECTS OF PESTICIDES WITH SPECIAL EMPHASIS ON ITS GENOTOXICITY.** *Indian Journal of Industrial Medicine* 42 : 123-126.

Chem Codes: Chemical of Concern: PNB,MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM JOURNAL ARTICLE HUMAN HEALTH BIOBUSINESS OCCUPATIONAL HEALTH AND SAFETY TOXICOLOGY PESTICIDES FUNGICIDES INSECTICIDES CARCINOGENS ENVIRONMENT SAFETY MH - GENETICS, MEDICAL
KEYWORDS: Genetics and Cytogenetics-Human
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Occupational Health
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control
KEYWORDS: Hominidae

418. Mandal, P. K. (96). **EFFECTS OF PESTICIDES WITH SPECIAL EMPHASIS ON ITS GENOTOXICITY.** *Indian Journal of Industrial Medicine* 42 : 123-126.

Chem Codes: Chemical of Concern: PNB,MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM JOURNAL ARTICLE HUMAN HEALTH BIOBUSINESS OCCUPATIONAL HEALTH AND SAFETY TOXICOLOGY PESTICIDES FUNGICIDES INSECTICIDES CARCINOGENS ENVIRONMENT SAFETY MH - GENETICS, MEDICAL
KEYWORDS: Genetics and Cytogenetics-Human
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Occupational Health
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control
KEYWORDS: Hominidae

419. Marce, R. M., Prosen, H., Crespo, C., Calull, M., Borrull, F., and Brinkman, U. At (95). **ON-LINE TRACE ENRICHMENT OF POLAR PESTICIDES IN ENVIRONMENTAL WATERS BY REVERSED-PHASE LIQUID CHROMATOGRAPHY-DIODE ARRAY DETECTION-PARTICLE BEAM MASS SPECTROMETRY.** *Journal of Chromatography a* 696 : 63-74.

Chem Codes: Chemical of Concern: SZ,MOM,ADC,CBF; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM RESEARCH ARTICLE RIVER WATER DRINKING WATER POLLUTION ANALYTICAL METHOD
KEYWORDS: Ecology
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control

420. Marce, R. M., Prosen, H., Crespo, C., Calull, M., Borrull, F., and Brinkman, U. At (95). **ON-LINE TRACE ENRICHMENT OF POLAR PESTICIDES IN ENVIRONMENTAL WATERS BY**

REVERSED-PHASE LIQUID CHROMATOGRAPHY-DIODE ARRAY DETECTION-PARTICLE BEAM MASS SPECTROMETRY. *Journal of Chromatography a* 696 : 63-74.

Chem Codes: Chemical of Concern: SZ,MOM,ADC,CBF; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM RESEARCH ARTICLE RIVER WATER DRINKING WATER POLLUTION ANALYTICAL METHOD
KEYWORDS: Ecology
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control

421. Martinez-Chuecos, J., Molinero-Somolino, F., Sole-Violan, J., and Rubio-Sanz, R. (90). **Management of methomyl poisoning.** *Hum Exp Toxicol* 9 : 251-254.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Eleven patients who suffered methomyl poisoning were admitted to the intensive care unit. All of them showed cholinergic symptoms similar to that produced by organophosphate insecticides but of lesser intensity. Plasma cholinesterase activity was normal in four patients and moderately lower in the remainder (always above 32%). All of the patients showed miosis and none presented with bradycardia. No complications were detected in the acute stage or on further examination a month later. The treatment applied was: (1) gastric lavage or washing the skin; (2) the adminsitration of activated charcoal; (3) small doses of atropine according to symptoms (average of total dose 4.3 mg). All of the patients recovered within 24-48 h. In conclusion, we can assume that methomy poisoning does not produce serious complications if moderate surveillance is assumed. Only small doses of atropine are required to counteract symptoms.
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biochemical Studies-Proteins
KEYWORDS: Enzymes-Physiological Studies
KEYWORDS: Pathology
KEYWORDS: Pharmacology-Clinical Pharmacology (1972-)
KEYWORDS: Toxicology-General
KEYWORDS: Toxicology-Antidotes and Preventative Toxicology (1972-)
KEYWORDS: Pest Control
KEYWORDS: Hominidae

422. Martinez-Vidal, J. L., Parrilla, P., Fernandez-Alba, A. R., Carreno, R., and Herrera, F. (95). **A new sequential procedure for the efficient and automated location of optimum conditions in high performance liquid chromatography (HPLC).** *Journal of Liquid Chromatography* 18 : 2969-2989.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: METHODS.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. A new sequential Optimization Procedure by Search Point (OPSP) based on Hooke-Jeeves algorithm is developed. The procedure is an automated multifactor optimization of conditions for an HPLC separation. Its usefulness in computer-assisted method development is shown by the experimental mobile phase optimization of an isocratic reverse phase liquid chromatography separation of a mixture of six selected pesticides. The relative composition of a ternary mobile phase (Acetonitrile, Methanol, Water) was varied during the optimization process. An objective function (OF) which was used as the criterion of quality of the chromatographic separation is described. The performance of this new chromatographic method is evaluated either by plotting the map of the separation quality using a Grid Search method or by comparing the results with the ones obtained by the application of a Modified Simplex method, in both cases over the same triangular (Acetonitrile, Methanol, Water) paramete
KEYWORDS: Mathematical Biology and Statistical Methods
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General

KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Pest Control

423. Martinez-Vidal, J. L., Parrilla, P., Fernandez-Alba, A. R., Carreno, R., and Herrera, F. (95). **A new sequential procedure for the efficient and automated location of optimum conditions in high performance liquid chromatography (HPLC).** *Journal of Liquid Chromatography* 18 : 2969-2989.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: METHODS.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. A new sequential Optimization Procedure by Search Point (OPSP) based on Hooke-Jeeves algorithm is developed. The procedure is an automated multifactor optimization of conditions for an HPLC separation. Its usefulness in computer-assisted method development is shown by the experimental mobile phase optimization of an isocratic reverse phase liquid chromatography separation of a mixture of six selected pesticides. The relative composition of a ternary mobile phase (Acetonitrile, Methanol, Water) was varied during the optimization process. An objective function (OF) which was used as the criterion of quality of the chromatographic separation is described. The performance of this new chromatographic method is evaluated either by plotting the map of the separation quality using a Grid Search method or by comparing the results with the ones obtained by the application of a Modified Simplex method, in both cases over the same triangular (Acetonitrile, Methanol, Water) paramete
KEYWORDS: Mathematical Biology and Statistical Methods
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Pest Control

424. Mason, Y., Choshen, E., and Rav-Acha, C. (90). **Carbamate insecticides: Removal from water by chlorination and ozonation.** *Water Res* 24 : 11-22.

Chem Codes: Chemical of Concern: MOM,ADC; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. A simple approach for removal of carbamates from drinking water by disinfection is presented. Four carbamates, aldicarb, methomyl, carbaryl and propoxur were reacted with excess of each of three disinfectants, Cl2, ClO2 and O3. Carbaryl and propoxur did not react with chlorine, none of the selected carbamates reacted with ClO2, and all reacted very rapidly with O3. The reaction kinetics were determined for aldicarb and Cl2 and for methomyl and Cl2. Product analysis for the reaction of aldicarb and Cl2 was carried out using reverse-phase HPLC and GC-MS. The common degradation products, aldicarb-sulfoxide and aldicarb-sulfone were found together with other by-products. A mechanism is suggested based upon an electrophilic ionic attack by hypochlorous acid. A possible mechanism of electrophilic attack by ozone is also suggested. A preliminary bioassay using Daphnia magna, to compare the toxicity of aldicarb and chlorination by-products of aldicarb showed that the by-products
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Sewage Disposal and Sanitary Measures
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-General

425. Mason, Y., Choshen, E., and Rav-Acha, C. (90). **Carbamate insecticides: Removal from water by chlorination and ozonation.** *Water Res* 24 : 11-22.

Chem Codes: Chemical of Concern: MOM,ADC; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. A simple approach for removal of carbamates from drinking water by disinfection is presented. Four carbamates, aldicarb, methomyl, carbaryl and propoxur were reacted with excess of each of three disinfectants, Cl2, ClO2 and O3. Carbaryl and propoxur did not react with chlorine, none of the selected carbamates reacted with ClO2, and all reacted very rapidly with O3. The reaction kinetics were determined for aldicarb and Cl2 and for methomyl and Cl2. Product analysis for the reaction of aldicarb and Cl2 was carried out using reverse-phase HPLC and GC-MS. The common degradation products, aldicarb-sulfoxide and aldicarb-sulfone were found together with other by-products. A mechanism is suggested based upon an electrophilic ionic attack by hypochlorous acid. A possible mechanism of electrophilic attack by

ozone is also suggested. A preliminary bioassay using Daphnia magna, to compare the toxicity of aldicarb and chlorination by-products of aldicarb showed that the by-products
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Sewage Disposal and Sanitary Measures
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-General

426. Masque, N., Galia, M., Marce, R. M., and Borrull, F. (98). **New chemically modified polymeric resin for solid-phase extraction of pesticides and phenolic compounds from water.** *Journal of Chromatography a* 803 : 147-155.

Chem Codes: Chemical of Concern: SZ,MOM; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. A new chemically modified polymeric resin, with an o-carboxybenzoyl moiety, is developed to be used in the on-line solid-phase extraction (SPE) of some pesticides and phenolic compounds from aqueous samples, in order to obtain better breakthrough volumes than other commercial sorbents. The chemical introduction of this moiety improves the efficiency of SPE by providing better surface contact with aqueous samples. This synthesized sorbent enables higher volumes of sample to be concentrated for determining polar compounds. When analyzing real samples, tap and river waters, different quantities of sulphite were added to decrease the initial band due to fulvic and humic acids. The matrix peaks decreased and there were no losses in the studied compounds observed when 500 and 1000 mul of 10% Na2SO3 solution for every 100 ml of sample were added to tap and river water, respectively.
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Pest Control

427. Masque, N., Marce, R. M., and Borrull, F. (98). **Comparison of different sorbents for on-line solid-phase extraction of pesticides and phenolic compounds from natural water followed by liquid chromatography.** *Journal of Chromatography a* 793 : 257-263.

Chem Codes: Chemical of Concern: SZ,MOM; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Three different sorbents, Carbopack B, a carbon black, Bond Elut PPL, a functionalized polymeric resin, and HYSphere-1, a higher cross-linking polymeric resin, in a steel precolumn of 10 3 mm I.D., were compared for solid-phase extraction (SPE) of a group of pesticides and phenolic compounds in water which was on-line coupled to reversed-phase liquid chromatography and UV detection. HYSphere-I gave a higher breakthrough volume for phenol, one of the most polar compounds studied and enabled 100 ml of water to be concentrated with no significant losses of the compounds studied (73% for phenol). Recoveries in tap water were between 67% for phenol and 86% for eight polar analytes, and detection limits were between 0.03 and 0.17 mug l-1.
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques

428. Masque, N., Marce, R. M., and Borrull, F. (98). **New polymeric and other types of sorbents for solid-phase extraction of polar organic micropollutants from environmental water.** *Trends in Analytical Chemistry* 17 : 384-394.

Chem Codes: Chemical of Concern: SZ,MOM; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. This article describes different types of sorbents for the solid-phase extraction of polar organic pollutants from environmental water and emphasizes the use of the new synthesized sorbents. The most important new sorbents are the chemically modified polymeric resins with functional groups such as acetyl, hydroxymethyl, benzoyl and o-carboxybenzoyl, and the highly crosslinked polymers. These sorbents are compared and their properties described. Recoveries for the most polar compounds are better when these new sorbents are used. Immunosorbents and molecularly imprinted polymers are new types of extraction sorbents which are specific for a group of compounds and they enable chromatograms with no matrix interference to be obtained when analyzing some polar compounds. The advantages and drawbacks of off-line and on-line procedures are also discussed, and solutions to their

limitations are proposed.
KEYWORDS: Ecology
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-Proteins
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Public Health: Environmental Health-Air

429. Matisova, E. and Skrabakova, S. (95). **CARBON SORBENTS AND THEIR UTILIZATION FOR THE PRECONCENTRATION OF ORGANIC POLLUTANTS IN ENVIRONMENTAL SAMPLES.** *Journal of Chromatography a* 707 : 145-179.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: METHODS.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM LITERATURE REVIEW GAS CHROMATOGRAPHY HIGH PERFORMANCE LIQUID CHROMATOGRAPHY ANALYTICAL METHOD
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Public Health: Environmental Health-Air

430. Matisova, E. and Skrabakova, S. (95). **CARBON SORBENTS AND THEIR UTILIZATION FOR THE PRECONCENTRATION OF ORGANIC POLLUTANTS IN ENVIRONMENTAL SAMPLES.** *Journal of Chromatography a* 707 : 145-179.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: METHODS.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM LITERATURE REVIEW GAS CHROMATOGRAPHY HIGH PERFORMANCE LIQUID CHROMATOGRAPHY ANALYTICAL METHOD
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Public Health: Environmental Health-Air

431. Mayer, A. S., Imhoff, P. T., Mitchell, R. J., Rabideau, A. J., Mcbride, J. F., and Miller, C. T. (94). **FATE AND EFFECTS OF POLLUTANTS GROUNDWATER QUALITY.** *Water Environment Research* 66 : 532-585.

Chem Codes: Chemical of Concern: SZ,MTL,MOM,ADC,CBF; Rejection Code: FATE.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM LITERATURE REVIEW WATER QUALITY BIOLOGICAL PROCESSES HYDRODYNAMICS SORPTION SOIL POLLUTION WASTEWATER TREATMENT
KEYWORDS: Ecology
KEYWORDS: Biochemical Studies-General
KEYWORDS: Movement (1971-)
KEYWORDS: Public Health: Environmental Health-Sewage Disposal and Sanitary Measures
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Soil Science-Physics and Chemistry (1970-)

432. Mayer, A. S., Imhoff, P. T., Mitchell, R. J., Rabideau, A. J., Mcbride, J. F., and Miller, C. T. (94). **FATE AND EFFECTS OF POLLUTANTS GROUNDWATER QUALITY.** *Water Environment Research* 66 : 532-585.

Chem Codes: Chemical of Concern: SZ,MTL,MOM,ADC,CBF; Rejection Code: FATE.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM LITERATURE REVIEW WATER QUALITY BIOLOGICAL PROCESSES HYDRODYNAMICS SORPTION SOIL POLLUTION WASTEWATER TREATMENT

KEYWORDS: Ecology
KEYWORDS: Biochemical Studies-General
KEYWORDS: Movement (1971-)
KEYWORDS: Public Health: Environmental Health-Sewage Disposal and Sanitary Measures
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Soil Science-Physics and Chemistry (1970-)

433. Mcconnell, R., Pacheco Anton Af, and Magnotti, R. (90). **Crop duster aviation mechanics: High risk for pesticide poisoning.** *Am J Public Health* 80 : 1236-1239.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. A cross-sectional medical survey was conducted among 63 Nicaraguan aviation mechanics exposed to organophosphate and other toxic pesticides. Thirty-one (49 percent) reported having been acutely poisoned on the job. Also, seven of 14 novice mechanics, with less than one year on the job, reported that they had been poisoned. Thirty-eight (61 percent) had cholinesterase levels below the lower limit of normal, including three workers with levels less than 20 percent of the lower limit of normal. Risk factors for low cholinesterase included recent hire and recent poisoning. Workers did not use protective equipment, nor were there facilities for bathing on site. As a result of this survey, the government has prohibited the mixing and loading of pesticides at this airport and requires the washing of planes prior to maintenance work; coveralls and thin, pesticide impermeable gloves are to be issued to mechanics handling pesticide-contaminated parts. Closed system mixing and loa
KEYWORDS: General Biology-Institutions
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biochemical Studies-Proteins
KEYWORDS: Enzymes-Physiological Studies
KEYWORDS: Pathology
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Occupational Health
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Hominidae

434. Mcgarvey, B. D. (93). **HIGH-PERFORMANCE LIQUID CHROMATOGRAPHIC METHODS FOR THE DETERMINATION OF N METHYLCARBAMATE PESTICIDES IN WATER SOIL PLANTS AND AIR.** *J Chromatogr* 642 : 89-105.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: CHEM METHODS.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM REVIEW PESTICIDE ANALYTICAL METHOD
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control
KEYWORDS: Plantae-Unspecified

435. Mcgarvey, B. D. (93). **HIGH-PERFORMANCE LIQUID CHROMATOGRAPHIC METHODS FOR THE DETERMINATION OF N METHYLCARBAMATE PESTICIDES IN WATER SOIL PLANTS AND AIR.** *J Chromatogr* 642 : 89-105.

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KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control
KEYWORDS: Plantae-Unspecified

436. Mcgarvey, B. D. (89). **LIQUID CHROMATOGRAPHIC DETERMINATION OF N METHYLCARBAMATE PESTICIDES USING A SINGLE-STAGE POST-COLUMN DERIVATIZATION REACTION AND FLUORESCENCE DETECTION.** *J Chromatogr* 481 : 445-451.

Chem Codes: MOM,CBF,ADC; Rejection Code: CHEM METHODS.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM ALDICARB SULFOXIDE ALDICARB SULFONE OXAMYL METHOMYL 3 HYDROXYCARBOFURAN ALDICARB PROPOXUR CARBOFURAN CARBARYL METHIOCARB BUFENCARB
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Toxicology-General
KEYWORDS: Pest Control

437. Mcgarvey, B. D. (89). **LIQUID CHROMATOGRAPHIC DETERMINATION OF N METHYLCARBAMATE PESTICIDES USING A SINGLE-STAGE POST-COLUMN DERIVATIZATION REACTION AND FLUORESCENCE DETECTION.** *J Chromatogr* 481 : 445-451.

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438. Mcgarvey, B. D. (89). **LIQUID CHROMATOGRAPHIC DETERMINATION OF N METHYLCARBAMATE PESTICIDES USING A SINGLE-STAGE POST-COLUMN DERIVATIZATION REACTION AND FLUORESCENCE DETECTION.** *J Chromatogr* 481 : 445-451.

Chem Codes: Chemical of Concern: MOM,CBF,ADC; Rejection Code: CHEM METHODS.
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KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Toxicology-General
KEYWORDS: Pest Control

439. Mendoza, C. E. and Shields, J. B. (1974Mar-Apr). **Determination of methomyl by using 1-fluoro-2,4-dinitrobenzene reaction and gas-liquid chromatography.** *J Agric Food Chem 1974 Mar-Apr;22(2):255-8.* 22: 255-8.

Chem Codes: Chemical of Concern: MOM; Rejection Code: METHOD.

440. Menezes, M. L. and Felix, G. (98). **On line extraction and separation of bendiocarb, methomyl, methyl-parathion, and pentachlorophenol pesticides from raw milk.** *Journal of Liquid Chromatography & Related Technologies* 21 : 2863-2871.

Chem Codes: Chemical of Concern: MOM; Rejection Code: CHEM METHODS.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. A high performance liquid chromatography (HPLC) method for extraction and determination of pesticides from raw milk was developed. The method involves direct injection of raw milk samples on a bovine serum albumin-dimethyl-octyl-silica gel (BSA-Si-C8) column. The mobile phase 0.05 mol.L-1 phosphate buffer pH 6.0 in acetonitrile (70:30 v/v) was employed for extraction and separation of bendiocarb, methylparathion, pentachlorophenol and methomyl pesticides. The method shows good results of recovery in the pesticides studied, higher than 99.6%.
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Toxicology-General
KEYWORDS: Pest Control

441. Menn, J. J. (91). **Prospects and Status for Development of Novel Chemicals for IPM Cotton.** *Crop Prot.* 10: 347-353.

Chem Codes: EcoReference No.: 74352
Chemical of Concern: MOM,FNV,TDC,CYP; Rejection Code: REVIEW.

442. Metcalf, R. L. (95). **CARBAMATE AND THIOCARBAMATE NEUROTOXICITY.** *Chang, L. W. And R. S. Dyer (Ed.). Neurological Disease and Therapy, Vol. 36. Handbook of Neurotoxicology. Xxi+1103p. Marcel Dekker, Inc.: New York, New York, Usa* Basel, Switzerland. Isbn 0-8247-8873-7.; 0 : 547-561.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER HUMAN ORGANOPHOSPHATE INDUCED DELAYED NEUROTOXICITY TOXICOKINETICS CHEMICAL STRUCTURE NEUROTRANSMISSION ENVIRONMENTAL POLLUTION METABOLISM
KEYWORDS: Comparative Biochemistry
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-Molecular Properties and Macromolecules
KEYWORDS: Enzymes-Physiological Studies
KEYWORDS: Metabolism-General Metabolism
KEYWORDS: Nervous System-General
KEYWORDS: Nervous System-Pathology
KEYWORDS: Toxicology-General
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KEYWORDS: Hominidae

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KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Hominidae

444. Miles, C. J., Doerge, D. R., and Bajic, S. (92). **Particle beam/liquid chromatography/mass spectrometry of National Pesticide Survey analytes.** *Arch Environ Contam Toxicol* 22 : 247-251.

Chem Codes: Chemical of Concern: SZ,MTL,MOM; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. The U.S. Environmental Protection Agency (US EPA) lists 126 polar, water-soluble compounds in the National Pesticide Survey (NPS) because of their potential for contaminating ground water. From this list, approximatley 100 compounds were analyzed by particle beam liquid chromatography/mass spectrometry (PB/MS). The fragmentation patterns of the electron impact (EI) spectra were generally comparable to reference EI spectra and were useful for analyte confirmations. A study of four different commercial nebulizers was performed to assess the effect on chromatographic integrity. In addition to the use of PB/LC/MS as a qualitative confirmation tool, its use as a selective LC detector was evaluated. Forty three of the NPS analytes showed sufficient sensitivity for detection of and spectrum generation from 100 ng or less. Using published concentration and cleanup methods, this sensitivity is sufficient for confirming the presence of these analytes in ground water at the 0.1 ppb
KEYWORDS: General Biology-Institutions
KEYWORDS: General Biology-Conservation
KEYWORDS: Ecology
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control

445. Miles, C. J. and Oshiro, W. C. (90). **Degradation of methomyl in chlorinated water.** *Environ Toxicol Chem* 9 : 535-540.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Methomyl degrades rapidly in chlorinated water and the rate increases with decreasing pH, increasing temperature and increasing chlorine concentrations. Reaction rate with free chlorine is 1,000-fold faster than with chloramine. Methomyl forms methomyl sulfoxide and N-chloromethomyl before degrading to acetic acid, methanesulfonic acid and dichloromethylamine.
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-Molecular Properties and Macromolecules
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control

446. Mineau, P., Collins, B. T., and Baril, A. (96). **On the Use of Scaling Factors to Improve Interspecies Extrapolation of Acute Toxicity in Birds.** *Regul.Toxicol.Pharmacol.* 24: 24-29.

Chem Codes: Chemical of Concern:
STCH,4AP,STAR,DLD,MOM,ADC,CBF,MCB,PIM,PPX,CPY,CMPH,DEM,DZ,DCTP,FNT,MVP,PRN,PPHD,PPX,TMP,TCF,BDF; Rejection Code: MODELING.

447. Mineau, P., Collins, B. T., and Baril, A. (96). **On the Use of Scaling Factors to Improve Interspecies**

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HD,PPX,TMP,TCF,BDF; Rejection Code: MODELING.

448. Mineau, P., Fletcher, M. R., Glaser, L. C., Thomas, N. J. , Brassard, C., Wilson, L. K., Elliott, J. E., Lyon, L. A., Henny, C. J., Bollinger, T., and Porter, S. L. (99). **Poisoning of raptors with organophosphorus and carbamate pesticides with emphasis on Canada, U.S. and U.K.** *Journal of Raptor Research* 33 : 1-37.

Chem Codes: Chemical of Concern: MOM,CBF,ADC; Rejection Code: SURVEY.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. We reviewed cases of raptor mortality resulting from cholinesterase-inhibiting pesticides. We compiled records from the U.S., U.K. and Canada for the period 1985-95 (520 incidents) and surveyed the relevant literature to identify the main routes of exposure and those products that led to the greatest number of poisoning cases. A high proportion of cases in the U.K. resulted from abusive uses of pesticides (willful poisoning). The proportion was smaller in North America where problems with labele nophosphorus products as avicides and for the topical treatment of livestock appeared to be common routes of intoxication. The use of insecticides in dormant oils also gave rise to exposure that can be lethal or which can debilitate birds and increase their vulnerability. A few pesticides of high toxicity were responsible for the bulk of poisoning cases. Based on limited information, raptors appeared to be more sensitive than other bird species to organophosphorus and carbamate p
KEYWORDS: General Biology-Conservation
KEYWORDS: Ecology
KEYWORDS: Pathology
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Pest Control
KEYWORDS: Chordata
KEYWORDS: Invertebrata
KEYWORDS: Oligochaeta
KEYWORDS: Falconiformes

449. Mineau, P., Fletcher, M. R., Glaser, L. C., Thomas, N. J. , Brassard, C., Wilson, L. K., Elliott, J. E., Lyon, L. A., Henny, C. J., Bollinger, T., and Porter, S. L. (99). **Poisoning of raptors with organophosphorus and carbamate pesticides with emphasis on Canada, U.S. and U.K.** *Journal of Raptor Research* 33 : 1-37.

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KEYWORDS: Pest Control
KEYWORDS: Chordata
KEYWORDS: Invertebrata
KEYWORDS: Oligochaeta
KEYWORDS: Falconiformes

450. Minelli, E. V., Angioni, A., Melis, M., Pirisi, F. M., and Cabras, P. (97). **Determination of carbamate insecticides in apples, pears, and lettuce by LC with UV detector.** *Journal of Aoac International* 80 : 1315-1319.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: METHOD.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. A simple and rapid method was developed for determination of 8 carbamate insecticides and 10 of their metabolites in apples, pears, and lettuce by liquid chromatography with UV diode array detector. With this method no derivatization is needed. Carbamates not belonging to the N-methylcarbamate class and metabolites without the N-methyl group can also be determined.
KEYWORDS: Comparative Biochemistry
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Metabolism-General Metabolism
KEYWORDS: Food Technology-Fruits
KEYWORDS: Food Technology-Evaluations of Physical and Chemical Properties (1970-)
KEYWORDS: Toxicology-General
KEYWORDS: Toxicology-Foods
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control

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452. Minyard, J. P Jr and Roberts, W. E. (91). **State findings on pesticide residues in foods: 1988 and 1989.** *J Assoc Off Anal Chem* 74 : 438-452.

Chem Codes: Chemical of Concern: SZ,RSM,PNB,MOM,CBF,ADC; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Findings of pesticide and related chemical residues are presented for 27,065 samples of foods collected and analyzed in 10 state food laboratories over 1988 and 1989 (fiscal years (FY) 88 and 89). These laboratories conduct food regulatory programs compatible with national programs of the U.S. Food and Drug Administration. Of the findings, 6325 samples contained detectable levels of 1 or more pesticide analytes and 418 (or 1.5%) of the total number of samples were deemed to be of regulatory significance.
KEYWORDS: General Biology-Institutions
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KEYWORDS: Food Technology-Preparation
KEYWORDS: Toxicology-Foods
KEYWORDS: Public Health-Public Health Laboratory Methods
KEYWORDS: Pest Control

454. Miyazaki, T., Yashiki, M., Kojima, T., Chikasue, F., Ochiai, A., and Hidani, Y. (89). **Fatal and non-fatal methomyl intoxication in an attempted double suicide.** *Forensic science international [forensic sci. Int.]* 42: 263-270.

Chem Codes: Chemical of Concern: MOM,TOXNET,MEDLINE; Rejection Code: HUMAN HEALTH.
Abstract: A 79-year-old man and his 73-year-old wife attempted double suicide by ingesting methomyl powder. The woman died 19 h after ingestion in spite of intensive care. At autopsy a large number of miliary hemorrhages were found in both thalami of the brain. Her husband recovered after 10 days of treatment. Methomyl in the biological materials was analyzed by gas chromatography-mass spectrometry. The methomyl concentration was 44 mu g/g in the wife's serum sample collected 1 h after ingestion, and 0.2 mu g/g in the blood sample collected at autopsy. The methomyl concentration in the husband's blood sample collected 28 h after ingestion was from 0.01 to 0.1 mu g/g. The miliary hemorrhages found in the thalami of the brain are suspected to have been caused by asphyxia induced by methomyl intoxication.

455. Mohammad, F. K., Faris, G. A-M, and Al-Kassim, N. A. (97). **A modified electrometric method for measurement of erythrocyte acetylcholinesterase activity in sheep.** *Veterinary and Human Toxicology* 39 : 337-339.

Chem Codes: Chemical of Concern: MOM; Rejection Code: IN VITRO.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. A modified method was compared with an original electrometric method for measurement of erythrocyte acetylcholinesterase (EChE) activity in sheep. The mean|SD (pH/30 min) of EChE activity of 8 sheep measured by the modified procedure (0.70|0.15) was not significantly different from that of the original method (0.64|0.12). The inherently low plasma cholinesterase activity of the sheep as measured by the 2 methods were also not significantly different from each other

(0.09|0.04 vs 0.10|0.04). The coefficient of variation of the modified method in measuring EChE activity was 8%. The method was used to demonstrate in vitro inhibition of sheep EChE activity by the organophosphorus and carbamate insecticides dichlorvos and methomyl, respectively. The method could be well-suited for rapid measurement of EChE activity in sheep, especially in cases of organophosphate and possibly carbamate poisoning.
KEYWORDS: Methods
KEYWORDS: Cytology and Cytochemistry-Animal
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biochemical Studies-Proteins
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Enzymes-Methods
KEYWORDS: Metabolism-General Metabolism
KEYWORDS: Blood
KEYWORDS: Toxicology-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Toxicology-Veterinary Toxicology
KEYWORDS: Veterinary Science-General
KEYWORDS: Pest Control
KEYWORDS: Bovidae

456. Montz, W. E., Scanlon, P. F., and Kirkpatrick, R. L. (83). **Effects of Field Application of the Ant-Cholinesterase Insecticide Methomyl on Brain Acetylcholinesterase Activities in Wild Mus musculus.** *Bull.Environ.Contam.Toxicol.* 31: 158-163.

Chem Codes: EcoReference No.: 38011
User Define 2: WASHT
Chemical of Concern: MOM,TXP; Rejection Code: MIXTURE.

457. Moolla-or, P. (92). **CARBAMATE INSECTICIDE AND MYOCARDITIS.** *J Med Assoc Thail* 75 : 591-594.

Chem Codes: Chemical of Concern: MOM,CBF,ADC; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM HUMAN
KEYWORDS: Cytology and Cytochemistry-Human
KEYWORDS: Biochemical Studies-General
KEYWORDS: Pathology
KEYWORDS: Cardiovascular System-Heart Pathology
KEYWORDS: Toxicology-General
KEYWORDS: Pest Control
KEYWORDS: Hominidae

458. Moolla-or, P. (92). **CARBAMATE INSECTICIDE AND MYOCARDITIS.** *J Med Assoc Thail* 75 : 591-594.

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KEYWORDS: Pathology
KEYWORDS: Cardiovascular System-Heart Pathology
KEYWORDS: Toxicology-General
KEYWORDS: Pest Control
KEYWORDS: Hominidae

459. Moore, J. C., Hansen, D. J., Garnas, R. L., and Goodman, L. R. (1985(Recd). **A SAND-GRANULAR**

CARBON FILTRATION TREATMENT SYSTEM FOR REMOVING AQUEOUS PESTICIDE RESIDUES FROM A MARINE TOXICOLOGY LABORATORY EFFLUENT. *Water Res* 19 : 1986).

Chem Codes: Chemical of Concern: MOM; Rejection Code: EFFLUENT.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM MARINE ORGANISM WASTEWATER TREATMENT HAZARDOUS WASTE CONSTRUCTION COST
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Toxicology-Antidotes and Preventative Toxicology (1972-)
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Sewage Disposal and Sanitary Measures
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control

460. Moriya, F. and Hashimoto, Y. (1999Nov). **Comparative studies on tissue distributions of organophosphorus, carbamate and organochlorine pesticides in decedents intoxicated with these chemicals.** *J Forensic Sci 1999 Nov;44(6):1131-5.* 44: 1131-5.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: This paper describes the tissue distributions of dichlorvos, an organophosphate, chlorpyrifos-methyl, an organophosphorothioate, methomyl, a carbamate, and endrin, an organochlorine, in three individuals (Cases 1-3) who died after ingesting insecticidal preparations containing these chemicals. In Case 1 involving dichlorvos and chlorpyrifos-methyl, no dichlorvos was detected in most of the blood and tissue samples. Tiny amounts of dichlorvos (0.067 mg/L and 0.027 mg/L) were detected in the vitreous humor and cerebrospinal fluid, respectively. The chlorpyrifos-methyl concentrations in the blood samples were very site-dependent with a range of 0.615-2.24 mg/L. The tissue concentrations of chlorpyrifos-methyl were within the range 0.379-8.60 mg/kg. The total amounts of dichlorvos and chlorpyrifos-methyl in the stomach were 879 and 612 mg, respectively. The serum cholinesterase activity was 3 IU/L/37 degrees C. In Case 2 involving methomyl, the methomyl concentrations in the blood samples were very site-dependent with a range of 0.56-4.75 mg/L. The tissue concentrations of methomyl were 2.61 mg/kg or less, no methomyl being detected in the spleen, liver and kidney. The methomyl concentrations in the cerebrospinal fluid and vitreous humor were 5.37 and 4.75 mg/L, respectively. The stomach contained 85 mg methomyl. The serum cholinesterase activity was 73 IU/L/37 degrees C. In Case 3 involving endrin, the victim underwent medical treatment for 7 h after ingesting an endrin preparation. The differences in the endrin concentrations among the blood samples were small, with a range of 0.353-0.615 mg/L. The tissue concentrations of endrin were within the range 0.467-13.3 mg/kg. The endrin in the stomach (66 mg) was adsorbed almost completely on the activated charcoal that was administered for medical treatment.

461. Morse, D. L., Baker, E. L. Jr, Kimbrough, R. D., and Wisseman, C. L. 3rd (79). **Propanil-chloracne and methomyl toxicity in workers of a pesticide manufacturing plant.** *Clin Toxicol* 15: 13-21.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: In a survey of occupationally acquired disease in workers at a pesticide plant, we found that 11 (11%) of 102 workers had been hospitalized for illness related to chemical exposures; highest hospitalization rates occurred in packaging (27%), production (22%), and maintenance (9%) workers. Commonest causes of hospitalization were intoxication by the carbamate pesticide methomyl [1-(methylthio)ethylideneamino methyl carbamate], a reversible cholinesterase inhibitor, and methemoglobinemia following exposure to 3,4-dichloroaniline. On clinical evaluation, five (46%) of 11 packaging workers, the group with the highest exposure to methomyl, had experienced blurred vision or pupillary constriction. Seventeen (61%) of 28 production workers with exposure to dichloroaniline and propanil (3'4'-dichloropropionanilide) had chloracne, an acne-form dermatosis caused by the contaminant tetrachlorazobenzene in propanil and dichloroaniline. The chloracnegenic potentials of propanil and dichloroaniline were verified by rabbit ear tests. These findings reemphasize the hazards inherent in the the manufacture and formulation of pesticides and herbicides.

462. Motas-Guzman, M., Marla-Mojica, P., Romero, D., Martinez-Lopez, E., and Garcia-Fernandez, A. J.

(2003Feb). **Intentional poisoning of animals in southeastern Spain: a review of the veterinary toxicology service from Murcia, Spain.** *Vet Hum Toxicol 2003 Feb;45(1):47-50.* 45: 47-50.

Chem Codes: MOM,ADC; Rejection Code: SURVEY.
ABSTRACT: Data of toxicological analyses carried out over a 10-y period for suspected cases of wild and domestic animal poisonings are summarized. Of the 123 cases suspected as deliberate, 102 were be analyzed and 50 of them were positive to intentional poisoning, a total of 107 dead animals. Pesticides, especially insecticides (72%) and rodenticides (26%), were frequently involved. Aldicarb (n=15), anticoagulant rodenticides (n=8) and strychnine (n=4) were the most common toxins in baits prepared for intentional poisonings; carbofuran, methomyl, endosulfan and paraquat were also used. A coordinated Veterinary Toxicology Services network of collaboration should be set up in Spain to improve the quality of the services provided.

463. Motas-Guzman, M., Marla-Mojica, P., Romero, D., Martinez-Lopez, E., and Garcia-Fernandez, A. J. (2003Feb). **Intentional poisoning of animals in southeastern Spain: a review of the veterinary toxicology service from Murcia, Spain.** *Vet Hum Toxicol 2003 Feb;45(1):47-50.* 45: 47-50.

Chem Codes: Chemical of Concern: MOM,ADC; Rejection Code: SURVEY.
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464. Motas-Guzman, M., Marla-Mojica, P., Romero, D., Martinez-Lopez, E., and Garcia-Fernandez, A. J. (2003Feb). **Intentional poisoning of animals in southeastern Spain: a review of the veterinary toxicology service from Murcia, Spain.** *Vet Hum Toxicol 2003 Feb;45(1):47-50.* 45: 47-50.

Chem Codes: Chemical of Concern: MOM,ADC; Rejection Code: SURVEY.
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465. Moussa, Mounir, Ouazzani, Chadia, Bonavent, Jean-Francois, Berville, Andre, and Ghazi, Alexandre (90). **Possible involvement of the ATPase in the response of susceptible maize mitochondria to the toxin of Helminthosporium maydis, race T and to methomyl.** *Plant Science* 66: 81-86.

Chem Codes: Chemical of Concern: MOM; Rejection Code: IN VITRO.
T-toxin and the insecticide methomyl dissipate the membrane potential in mitochondria isolated from a Texas (T) cytoplasmic male-sterile corn. These compounds have no effect on mitochondria isolated from normal (N) corn. We show here that treatment of Texas mitochondria with oligomycin drastically enhances the sensitivity of these mitochondria to T-toxin and to methomyl. In addition, T-toxin and methomyl are able to specifically inhibit ATPase activity of soluble F1-ATPase purified from Texas mitochondria. These observations would indicate that the 13-kDa protein, recently implicated as the target of t-toxin and methomyl (Dewey et al., Proc. Natl. Acad. Sci. U.S.A., 84 (1987) 5374-5378), is associated with the mitochondrial ATPase.

466. Mowbray, D. L. (86). **PESTICIDE POISONING IN PAPUA NEW-GUINEA AND THE SOUTH PACIFIC.** *Papua New Guinea Med J* 29 : 131-142.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM HUMAN CATTLE FAT MILK BLOOD ORGANOCHLORINE RESIDUES SUICIDE HOMICIDE PARAQUAT CHOLINESTERASE
KEYWORDS: General Biology-Forensic Science
KEYWORDS: Behavioral Biology-Human Behavior
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biochemical Studies-Proteins
KEYWORDS: Enzymes-Chemical and Physical
KEYWORDS: Psychiatry-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Bovidae
KEYWORDS: Hominidae

467. Mowbray, D. L. (86). **PESTICIDE POISONING IN PAPUA NEW-GUINEA AND THE SOUTH PACIFIC.** *Papua New Guinea Med J* 29 : 131-142.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM HUMAN CATTLE FAT MILK BLOOD ORGANOCHLORINE RESIDUES SUICIDE HOMICIDE PARAQUAT CHOLINESTERASE
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KEYWORDS: Behavioral Biology-Human Behavior
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biochemical Studies-Proteins
KEYWORDS: Enzymes-Chemical and Physical
KEYWORDS: Psychiatry-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Bovidae
KEYWORDS: Hominidae

468. Moye, H. A. (95). **OPPORTUNITIES FOR PESTICIDE RESIDUE ANALYTICAL METHOD DEVELOPMENT THE POTENTIAL FOR AQUEOUS EXTRACTIONS OF PESTICIDE RESIDUES FROM FRUITS AND VEGETABLES.** *Ragsdale, N. N., P. C. Kearney and J. R. Plimmer (Ed.). Acs Conference Proceedings Series: Eighth International Congress of Pesticide Chemistry Options 2000* Conference, Washington, D.c., Usa, July 4-9, 1994. Xiv+450p. American Chemical Society: Washington, Dc, Usa. Isbn 0-8412-2995-3.; 0 : 193-203.

Chem Codes: Chemical of Concern: MOM; Rejection Code: METHODS, HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER MEETING PAPER FOOD CONTAMINATION
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Food Technology-Fruits
KEYWORDS: Food Technology-Preparation
KEYWORDS: Toxicology-Foods
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control
KEYWORDS: Spermatophyta
KEYWORDS: Hominidae

469. Mungrue, K. and Chadee, D. (2003Jul). **Toxic tale of the unexpected.** *Public Health 2003*

Jul;117(4):262-3. 117: 262-3.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.

470. Murakami, M. and Fukami, J. I. (86). **Relationship Between Specific Molecular Connectivity Indices and Teratogenicity, Carcinogenicity, and Mutagenicity of Carbamate Pesticides.** *Bull.Environ.Contam.Toxicol.* 37: 326-329.

Chem Codes: Chemical of Concern: MOM,CBF,ADC,CBL,BMY,PPX,TRL; Rejection Code: NO CONC/NO DURATION.

471. Murakami, M. and Fukami, J. I. (86). **Relationship Between Specific Molecular Connectivity Indices and Teratogenicity, Carcinogenicity, and Mutagenicity of Carbamate Pesticides.** *Bull.Environ.Contam.Toxicol.* 37: 326-329.

Chem Codes: Chemical of Concern: MOM,CBF,ADC,CBL,BMY,PPX,TRL; Rejection Code: NO CONC/NO DURATION.

472. MYCOGEN PLANT SCIENCES, INC. (96). **Method of detecting toxin-insensitive urf13-T protein.**

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO TOX DATA.
Abstract: A protein and gene encoding it are disclosed which confer sensitivity to B. maydis T toxin and the insecticide methomyl, in cells carrying the gene and expressing the protein. Toxin sensitivity domains of the protein have been identified wherein a modification yields a toxin-insensitive product.

473. MYCOGEN PLANT SCIENCES, INC. (95). **Modified unF-13 protein and gene.** *Us patent 5409837, , 1995*.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO SOURCE - PATENT.
Abstract: A unf. 13 protein and gene encoding it are disclosed which confer sensitivity to B. maydis T toxin and the insecticide methomyl, in cells carrying the gene and expressing the protein. Toxin sensitivity domains of the protein have been identified wherein a modification yields a toxin-insensitive product.

474. Myers, A. M., Koehler, C. M., Huang, J., Hack, E., and Thornburg, R. W. (91). **TRANSFER OF THE METHOMYL-SENSITIVITY TRAIT OF CMST MAIZE TO TRANSGENIC TOBACCO PLANTS.** *Symposium on the Genetic Dissection of Plant Cell Processes Held at the 20th Annual Meeting of the Keystone Symposia on Molecular and Cellular Biology, Keystone, Colorado, Usa, January 10-17, 1991. J Cell Biochem Suppl* 0 : 153.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO TOX DATA.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM ABSTRACT ESCHERICHIA-COLI NEUROSPORA-CRASSA YEAST CAULIFLOWER MOSAIC VIRUS SOUTHERN CORN LEAF BLIGHT HMT TOXIN ANALOG T-URF13 PROTEIN MITOCHONDRIAL GENE POLLEN GERMINATION
KEYWORDS: General Biology-Symposia
KEYWORDS: Cytology and Cytochemistry-Plant
KEYWORDS: Genetics and Cytogenetics-Plant
KEYWORDS: Ecology
KEYWORDS: Biochemical Methods-Nucleic Acids
KEYWORDS: Biochemical Studies-Nucleic Acids
KEYWORDS: Biochemical Studies-Proteins
KEYWORDS: Toxicology-General
KEYWORDS: Genetics of Bacteria and Viruses
KEYWORDS: Plant Physiology
KEYWORDS: Plant Physiology
KEYWORDS: Plant Physiology
KEYWORDS: Phytopathology-Diseases Caused by Fungi

KEYWORDS: Caulimovirus (1979-)
KEYWORDS: Enterobacteriaceae (1979-)
KEYWORDS: Fungi Imperfecti or Deuteromycetes
KEYWORDS: Gramineae
KEYWORDS: Solanaceae

475. Navas, J. M. and Segner, H. (98). **Antiestrogenic activity of anthropogenic and natural chemicals.** *Environmental Science and Pollution Research International* 5 : 75-82.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: REVIEW.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. A number of natural and man-made chemicals possess antiestrogenic activity, i.e. they antagonize a broad spectrum of estrogen-induced responses in vertebrates. Examples of antiestrogens include dioxin, furan and PCB congeners, certain PAHs, pesticides and indol-3-carbinol derivatives. Major mechanisms of antiestrogenicity are antagonistic action of chemicals at the estrogen receptor, or binding of chemicals to the arylhydrocarbon (Ah) receptor and subsequent interaction with estrogen-responsive genes. Toxicological consequences resulting from antiestrogenic activity have not been conclusively demonstrated to date, although antiestrogenic compounds could critically affect sensitive reproductive and developmental processes.
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-Molecular Properties and Macromolecules
KEYWORDS: Endocrine System-Gonads and Placenta
KEYWORDS: Toxicology-General

476. Navas, J. M. and Segner, H. (98). **Antiestrogenic activity of anthropogenic and natural chemicals.** *Environmental Science and Pollution Research International* 5 : 75-82.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: REVIEW.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. A number of natural and man-made chemicals possess antiestrogenic activity, i.e. they antagonize a broad spectrum of estrogen-induced responses in vertebrates. Examples of antiestrogens include dioxin, furan and PCB congeners, certain PAHs, pesticides and indol-3-carbinol derivatives. Major mechanisms of antiestrogenicity are antagonistic action of chemicals at the estrogen receptor, or binding of chemicals to the arylhydrocarbon (Ah) receptor and subsequent interaction with estrogen-responsive genes. Toxicological consequences resulting from antiestrogenic activity have not been conclusively demonstrated to date, although antiestrogenic compounds could critically affect sensitive reproductive and developmental processes.
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-Molecular Properties and Macromolecules
KEYWORDS: Endocrine System-Gonads and Placenta
KEYWORDS: Toxicology-General

477. Nehez, M., Boros, P., Ferke, A., Mohos, J., Palotas, M., Vetro, G., Zimanyi, M., and Desi, I. (88). **CYTOGENETIC EXAMINATION OF PEOPLE WORKING WITH AGROCHEMICALS IN THE SOUTHERN REGION OF HUNGARY.** *Regul Toxicol Pharmacol* 8 : 37-44.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM HUMAN CHROMOSOME ABERRATIONS PESTICIDE HAZARDOUS MATERIALS
KEYWORDS: Microscopy Techniques-Cytology and Cytochemistry
KEYWORDS: Cytology and Cytochemistry-Human
KEYWORDS: Genetics and Cytogenetics-Human
KEYWORDS: Social Biology
KEYWORDS: Biochemical Studies-General
KEYWORDS: Anatomy and Histology
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Occupational Health
KEYWORDS: Public Health: Environmental Health-Air

KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Hominidae

478. Neidert, E. and Saschenbrecker, P. W. (96). **Occurrence of pesticide residues in selected agricultural food commodities available in Canada.** *Journal of Aoac International* 79 : 549-566.

Chem Codes: Chemical of Concern: PNB,MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. During the 27-month period between January 1, 1992, and March 31, 1994, Agriculture and AgriFood Canada analyzed 21 982 samples of fruit and vegetable commodities for pesticide residues. A multiresidue method capable of detecting over 200 analytes was used. In 5784 domestic samples a total of 676 residue findings were made. Of these, 32 (0.55%) were in violation of Canadian maximum residue limits (MRLs). In 16 198 imported products, 464 of 3193 residue findings exceeded MRLs, corresponding to a violation rate of 2.86%. One-half of domestic violations resulted from commodity-pesticide combinations for which there are no Canadian approvals.
KEYWORDS: Biochemical Studies-General
KEYWORDS: Food Technology-General
KEYWORDS: Food Technology-Fruits
KEYWORDS: Food Technology-Evaluations of Physical and Chemical Properties (1970-)
KEYWORDS: Toxicology-Foods
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control

479. Neidert, E. and Saschenbrecker, P. W. (96). **Occurrence of pesticide residues in selected agricultural food commodities available in Canada.** *Journal of Aoac International* 79 : 549-566.

Chem Codes: Chemical of Concern: PNB,MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. During the 27-month period between January 1, 1992, and March 31, 1994, Agriculture and AgriFood Canada analyzed 21 982 samples of fruit and vegetable commodities for pesticide residues. A multiresidue method capable of detecting over 200 analytes was used. In 5784 domestic samples a total of 676 residue findings were made. Of these, 32 (0.55%) were in violation of Canadian maximum residue limits (MRLs). In 16 198 imported products, 464 of 3193 residue findings exceeded MRLs, corresponding to a violation rate of 2.86%. One-half of domestic violations resulted from commodity-pesticide combinations for which there are no Canadian approvals.
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KEYWORDS: Food Technology-General
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KEYWORDS: Food Technology-Evaluations of Physical and Chemical Properties (1970-)
KEYWORDS: Toxicology-Foods
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control

480. Nesbitt, H. J., Hickery, A., and Phirum, I. (96). **ADULTERATED PESTICIDES IN CAMBODIA.** *International Rice Research Notes* 21 : 51.

Chem Codes: MOM,CBF; Rejection Code: NO TOX DATA, ABSTRACT .
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM NOTE RESEARCH ARTICLE PESTICIDE SAFETY PESTICIDE QUALITY PESTICIDE ADULTERATION CARBARYL VIETNAM FENITROTHION JAPAN METHAMIDOPHOS PARATHION METHYL THAILAND LUXEMBOURG CARBOFURAN DDT FENVALERATE METHOMYL MEVINPHOS DICHLORVOS CAMBODIAN GOVERNMENT STORE ENDRIN MONOCROTOPHOS MOSQUITO POISON KHMER PRODUCT PESTICIDES CAMBODIA ORIENTAL REGION
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-General
KEYWORDS: Pest Control

481. Nesbitt, H. J., Hickery, A., and Phirum, I. (96). **ADULTERATED PESTICIDES IN CAMBODIA.** *International Rice Research Notes* 21 : 51.

Chem Codes: Chemical of Concern: MOM,CBF; Rejection Code: NO TOX DATA, ABSTRACT.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM NOTE RESEARCH ARTICLE PESTICIDE SAFETY PESTICIDE QUALITY PESTICIDE ADULTERATION CARBARYL VIETNAM FENITROTHION JAPAN METHAMIDOPHOS PARATHION METHYL THAILAND LUXEMBOURG CARBOFURAN DDT FENVALERATE METHOMYL MEVINPHOS DICHLORVOS CAMBODIAN GOVERNMENT STORE ENDRIN MONOCROTOPHOS MOSQUITO POISON KHMER PRODUCT PESTICIDES CAMBODIA ORIENTAL REGION
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-General
KEYWORDS: Pest Control

482. Newsome, W. H., Lau, B. P-Y, Ducharme, D., and Lewis, D. (95). **Comparison of Liquid Chromatography-Atmospheric Pressure Chemical Ionizationass Spectrometry and Liquid Chromatography-Postcolumn Fluorometry for Determination of Carbamates in Food.** *Journal of Aoac International* 78 : 1312-1316.

Chem Codes: Chemical of Concern: MOM,ADC; Rejection Code: METHODS.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Two detection methods, postcolumn derivatization with fluorescent detection and atmospheric pressure chemical ionization/mass spectrometry (MS) were compared for determination of N-methyl carbamates in food by liquid chromatography. Five commodities were spiked with 11 carbamates at levels from 10 to 100 ppb, extracted, and cleaned up by using a method based on the AOAC official method. With each detection method, sample blanks showed false-positive responses, indicating that neither method alone provides definitive identification. Except for aldicarb sulfoxide determined by MS, recoveries were linear between 10 and 100 ppb. Agreement between the 2 methods was good for determination of recoveries at 25 ppb. Coefficients of variation were 11-33% for fluorescence detection and 9-26% for MS.
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Food Technology-Fruits
KEYWORDS: Food Technology-Evaluations of Physical and Chemical Properties (1970-)
KEYWORDS: Toxicology-General
KEYWORDS: Toxicology-Foods
KEYWORDS: Pest Control

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Chem Codes: Chemical of Concern: MOM,ADC; Rejection Code: METHODS.
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KEYWORDS: Food Technology-Fruits
KEYWORDS: Food Technology-Evaluations of Physical and Chemical Properties (1970-)
KEYWORDS: Toxicology-General
KEYWORDS: Toxicology-Foods
KEYWORDS: Pest Control

484. Nobel, A. (93). **PARTITION COEFFICIENTS N OCTANOL WATER FOR PESTICIDES.** *J Chromatogr* 642 : 3-14.

Chem Codes: Chemical of Concern: MTL,MOM,ADC,CBF; Rejection Code: REVIEW.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM REVIEW ANALYTICAL METHOD
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Pest Control

485. Nobel, A. (93). **PARTITION COEFFICIENTS N OCTANOL WATER FOR PESTICIDES.** *J Chromatogr* 642 : 3-14.

Chem Codes: Chemical of Concern: MTL,MOM,ADC,CBF; Rejection Code: REVIEW.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM REVIEW ANALYTICAL METHOD
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Pest Control

486. Nogueira, J. M., Sandra, T., and Sandra, P. (2003May9). **Considerations on ultra trace analysis of carbamates in water samples.** *J Chromatogr a 2003 May 9;996(1-2):133-40.* 996: 133-40.

Chem Codes: MOM,ADC; Rejection Code: METHODS.
ABSTRACT: A new routine method for the ultra trace analysis of carbamates in water samples is presented, using solid-phase extraction followed by high-performance liquid chromatography coupled to atmospheric pressure electrospray ionisation mass spectrometry (SPE-LC-ESI-MS). Instrumental conditions of LC-ESI-MS in the selected ion monitoring (SIM) mode, showed excellent linear response for the six N-methyl carbamates studied (aldicarb, carbaryl, carbofuran, methomyl, oxamyl and pirimicarb) in the range from 1 to 50 microg/l and a precision having a relative standard deviation below 7.8% was achieved. Instrumental limits of detection of 0.10 microg/l were found for these carbamates, with the exception of methomyl for which 0.50 microg/l was measured. The SPE assays were shown to be easy, fast, very sensitive, requiring a low volume (50 ml) of water sample. For laboratory-spiked water samples having 0.03 and 0.30 microg/l of individual N-methyl carbamates, higher selectivities were achieved in cartridges having octadecylsilica, polystyrene-divinylbenzene and N-vinylpyrrolidane-divinylbenzene as solid phases, for which reasonable average recoveries were obtained. Ten replicates using octadecylsilica SPE cartridges, showed average recoveries between 73.7 and 92.6% with a relative standard deviation lower than 14.7%. The present methodology evidences good robustness, accuracy and precision for monitoring of N-methyl carbamates in water samples, and is shown to be a suitable alternative to replace the currently dedicated analytical systems. The limits of detection for the analysis of N-methyl carbamates in water samples reached in the present methodology (0.5 to 3 ng/l), clearly cover the maximum concentration admissible for pesticides, established by the European Union directive on water quality.

487. Nogueira, J. M., Sandra, T., and Sandra, P. (2003May9). **Considerations on ultra trace analysis of carbamates in water samples.** *J Chromatogr a 2003 May 9;996(1-2):133-40.* 996: 133-40.

Chem Codes: Chemical of Concern: MOM,ADC; Rejection Code: METHODS.
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studied (aldicarb, carbaryl, carbofuran, methomyl, oxamyl and pirimicarb) in the range from 1 to 50 microg/l and a precision having a relative standard deviation below 7.8% was achieved. Instrumental limits of detection of 0.10 microg/l were found for these carbamates, with the exception of methomyl for which 0.50 microg/l was measured. The SPE assays were shown to be easy, fast, very sensitive, requiring a low volume (50 ml) of water sample. For laboratory-spiked water samples having 0.03 and 0.30 microg/l of individual N-methyl carbamates, higher selectivities were achieved in cartridges having octadecylsilica, polystyrene-divinylbenzene and N-vinylpyrrolidane-divinylbenzene as solid phases, for which reasonable average recoveries were obtained. Ten replicates using octadecylsilica SPE cartridges, showed average recoveries between 73.7 and 92.6% with a relative standard deviation lower than 14.7%. The present methodology evidences good robustness, accuracy and precision for monitoring of N-methyl carbamates in water samples, and is shown to be a suitable alternative to replace the currently dedicated analytical systems. The limits of detection for the analysis of N-methyl carbamates in water samples reached in the present methodology (0.5 to 3 ng/l), clearly cover the maximum concentration admissible for pesticides, established by the European Union directive on water quality.

488. Nogueira, J. M., Sandra, T., and Sandra, P. (2003May9). **Considerations on ultra trace analysis of carbamates in water samples.** *J Chromatogr a 2003 May 9;996(1-2):133-40.* 996: 133-40.

Chem Codes: Chemical of Concern: MOM,ADC; Rejection Code: METHODS.
ABSTRACT: A new routine method for the ultra trace analysis of carbamates in water samples is presented, using solid-phase extraction followed by high-performance liquid chromatography coupled to atmospheric pressure electrospray ionisation mass spectrometry (SPE-LC-ESI-MS). Instrumental conditions of LC-ESI-MS in the selected ion monitoring (SIM) mode, showed excellent linear response for the six N-methyl carbamates studied (aldicarb, carbaryl, carbofuran, methomyl, oxamyl and pirimicarb) in the range from 1 to 50 microg/l and a precision having a relative standard deviation below 7.8% was achieved. Instrumental limits of detection of 0.10 microg/l were found for these carbamates, with the exception of methomyl for which 0.50 microg/l was measured. The SPE assays were shown to be easy, fast, very sensitive, requiring a low volume (50 ml) of water sample. For laboratory-spiked water samples having 0.03 and 0.30 microg/l of individual N-methyl carbamates, higher selectivities were achieved in cartridges having octadecylsilica, polystyrene-divinylbenzene and N-vinylpyrrolidane-divinylbenzene as solid phases, for which reasonable average recoveries were obtained. Ten replicates using octadecylsilica SPE cartridges, showed average recoveries between 73.7 and 92.6% with a relative standard deviation lower than 14.7%. The present methodology evidences good robustness, accuracy and precision for monitoring of N-methyl carbamates in water samples, and is shown to be a suitable alternative to replace the currently dedicated analytical systems. The limits of detection for the analysis of N-methyl carbamates in water samples reached in the present methodology (0.5 to 3 ng/l), clearly cover the maximum concentration admissible for pesticides, established by the European Union directive on water quality.

489. Nogueira, J. M. F., Sandra, Tom, and Sandra, Pat (2004). **Multiresidue screening of neutral pesticides in water samples by high performance liquid chromatography-electrospray mass spectrometry.** *Analytica Chimica Acta* 505: 209-215.

Chem Codes: MOM,CBF,ADC; Rejection Code: NO SPECIES.
A multiresidue method to screen ultra traces of neutral pesticides from water samples in compliance with European Union regulations is presented, using solid-phase extraction (SPE) followed by high performance liquid chromatography coupled to atmospheric pressure electrospray ionisation (ESI) mass spectrometry, SPE/LC-MS(ESI).Calibration conditions of LC-MS(ESI) in the SIM mode, showed excellent linear response for the 12 pesticides studied (carbaryl, carbofuran, methomyl, oxamyl, pirimicarb, chlortoluron, diuron, isoproturon, linuron, atrazine, propazine and simazine) in the range from 1 to 50 [mu]g/l and precisions having a relative standard deviation (R.S.D.) below 4.9% (chlortoluron) was achieved. Instrumental limits of detection of 0.10 [mu]g/l were found with the exception of chlortoluron, diuron and methomyl, for which 0.25 and 0.50 [mu]g/l were measured.The SPE assays using octadecilsilica cartridges are relatively simple and highly reproducible, requiring low volume of water sample (50 ml). For laboratory-spiked water samples having 0.10 [mu]g/l of individual pesticides, good average recoveries were obtained, within 65.0 and 97.8% with a relative standard deviation lower than 12.6% (methomyl). For real matrices, laboratory-spiked drinking and surface water samples at the 0.05 [mu]g/l level, reasonable average recoveries were also achieved, ranging from 75.3 to 96.8% and 67.7 to 105.2%, respectively.The present work establishes a suitable protocol as a guideline for research and routine laboratories, to screen

simultaneously carbamates, phenylureas and triazines from water samples. The methodology evidences very good reproducibility and is shown to be a suitable alternative to replace the currently dedicated analytical systems. The limits of detection reached (0.5-3.0 ng/l) clearly cover the maximum concentration admissible for pesticides in water samples, established by the European Union directive.

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492. Nubbe, M. E., Adams, V. D., Watts, R. J., and Clark, Y. R. (92). **CHEMICAL ANALYSIS.** *Water Environ*

Res 64 : 303-333.

Chem Codes: SZ,MTL,MOM,MLT,CBF,ADC; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM REVIEW GROUNDWATER POLLUTION SOIL POLLUTION WATER POLLUTION CONTROL DRINKING WATER ANALYSIS HAZARDOUS WASTE HUMIC ACIDS POLYCHLORINATED BIPHENYLS PESTICIDE CONTAMINATION
KEYWORDS: General Biology-Conservation
KEYWORDS: Ecology
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Sewage Disposal and Sanitary Measures
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495. Nunes, G. S., Ribeiro, M. L., Polese, L., and Barcelo, D. (98). **Comparison of different clean-up procedures for the determination of N-methylcarbamate insecticides in vegetable matrices by high-performance liquid chromatography with UV detection.** *Journal of Chromatography a* 795 : 43-51.

Chem Codes: MOM,CBF,ADC; Rejection Code: NO TOX DATA.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Several clean-up procedures which included the use of glass chromatography columns (silica gel, alumina, Florisil, silanized Celite-charcoal), Sep-Pak cartridges and

standard solutions were compared for the determination of the following N-methylcarbamate (NMC) insecticides: aldicarb, carbaryl, carbofuran, methomyl and propoxur. According to recovery results of the compounds after elution in a glass column, the most efficient systems employed 4.6% deactivated alumina and a silanized Celite-charcoal (4:1) as adsorbents, using dichloromethane-methanol (99:1) and toluene-acetonitrile (75:25) mixtures, respectively, as binary eluents. The recoveries of the compounds studied varied from 84 to 120%. Comparable recoveries (75-100%) for Sep-Pak cartridges in normal phase (NH2, CN) and reversed phase (C8) were observed. Different temperatures were tested during the concentration step in a rotary evaporator, and we verified a strong influence of this parameter on the stability of
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KEYWORDS: Public Health: Environmental Health-Air
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498. Nunes, G. S., Skladal, P., Yamanaka, H., and Barcelo, D. (98). **Determination of Carbamate Residues in Crop Samples by Cholinesterase-Based Biosensors and Chromatographic Techniques.** *Anal.Chim.Acta* 362: 59-68.

Chem Codes: Chemical of Concern: ADC,CBF,MOM,CBL,PPX; Rejection Code: IN VITRO/NO DURATION.

499. Nunes, G. S., Skladal, P., Yamanaka, H., and Barcelo, D. (98). **Determination of Carbamate Residues in Crop Samples by Cholinesterase-Based Biosensors and Chromatographic Techniques.** *Anal.Chim.Acta* 362: 59-68.

Chem Codes: Chemical of Concern: ADC,CBF,MOM,CBL,PPX; Rejection Code: IN VITRO/NO DURATION.

500. O'malley, M. (97). **Clinical evaluation of pesticide exposure and poisonings.** *Lancet (North American Edition)* 349 : 1161-1166.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Pesticide exposures cause disorders varying from straightforward topical irritant reactions, such as those to synthetic pyrethroid insecticides, to complex systemic illness, such as that resulting from cholinesterase inhibition by organophosphate pesticides. The acute illness syndromes associated with pesticides most commonly encountered by clinicians are illustrated here by cases reported to the California Pesticide Illness Surveillance Program. The issues raised include asthma associated with exposure to contaminants in organophosphate insecticides, systemic toxicity of ingested pyrethroids (in children), and illnesses associated with spills or misuse of fumigants.
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Pest Control
KEYWORDS: Hominidae

501. Ohta, T., Watanabe, M., Tsukamoto, R., Shirasu, Y., and Kada, T. (86). **ANTIMUTAGENIC EFFECTS OF 5 FLUOROURACIL AND 5 FLUORODEOXYURIDINE ON UV-INDUCED MUTAGENESIS IN ESCHERICHIA-COLI.** *Mutat Res* 173 : 19-24.

Chem Codes: Chemical of Concern: SZ,MOM; Rejection Code: BACTERIA.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM FOOD ADDITIVE ANTIBIOTIC PESTICIDE BETA GALACTOSIDASE ALKALINE PHOSPHATASE PROTEIN SYNTHESIS
KEYWORDS: Radiation-Radiation Effects and Protective Measures
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biochemical Studies-Nucleic Acids
KEYWORDS: Biochemical Studies-Proteins
KEYWORDS: External Effects-Light and Darkness
KEYWORDS: Enzymes-Physiological Studies
KEYWORDS: Pharmacology-General
KEYWORDS: Toxicology-General
KEYWORDS: Toxicology-Foods
KEYWORDS: Toxicology-Pharmacological Toxicology (1972-)
KEYWORDS: Toxicology-Antidotes and Preventative Toxicology (1972-)
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Physiology and Biochemistry of Bacteria
KEYWORDS: Genetics of Bacteria and Viruses

KEYWORDS: Enterobacteriaceae (1979-)

502. Okamoto, H. S., Wijekoon, D., Espeanza, C. E., Cheng, J. C., Park, S. L., Garcha, J. S., Gill, S. S. , and Perera, K. S. (91). **ANALYSIS FOR N METHYLCARBAMATE PESTICIDES BY HIGH PERFORMANCE LIQUID CHROMATOGRAPHY IN ENVIRONMENTAL SAMPLES.** *Friedman, D. (Ed.). Astm (American Society for Testing and Materials) Special Technical Publication, 1075. Waste Testing and Quality Assurance, Vol. 3. Xii+411p. Astm (American Society for Testig and Materials): Philadelphia, Pennsylvania, Usa. Illus. Isbn 0-8031-1294-7.* 0 : 115-128.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: METHODS.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM ENVIRONMENTAL POLLUTANTS SOIL WATER
KEYWORDS: Ecology
KEYWORDS: Comparative Biochemistry
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Soil Science-General
KEYWORDS: Soil Science-Physics and Chemistry (1970-)
KEYWORDS: Pest Control

503. Okamoto, H. S., Wijekoon, D., Espeanza, C. E., Cheng, J. C., Park, S. L., Garcha, J. S., Gill, S. S. , and Perera, K. S. (91). **ANALYSIS FOR N METHYLCARBAMATE PESTICIDES BY HIGH PERFORMANCE LIQUID CHROMATOGRAPHY IN ENVIRONMENTAL SAMPLES.** *Friedman, D. (Ed.). Astm (American Society for Testing and Materials) Special Technical Publication, 1075. Waste Testing and Quality Assurance, Vol. 3. Xii+411p. Astm (American Society for Testig and Materials): Philadelphia, Pennsylvania, Usa. Illus. Isbn 0-8031-1294-7.* 0 : 115-128.

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KEYWORDS: Soil Science-Physics and Chemistry (1970-)
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504. Okumura, D. , Melnicoe, R., Jackson, T., Drefs, C., Maddy, K., and Wells, J. (91). **PESTICIDE RESIDUES IN FOOD CROPS ANALYZED BY THE CALIFORNIA USA DEPARTMENT OF FOOD AND AGRICULTURE IN 1989.** *Ware, G. W. (Ed.). Reviews of Environmental Contamination and Toxicology, Vol. 118. Ix+158p. Springer-Verlag New York Inc.: New York, New York, Usa* Berlin, Germany. Illus. Isbn 0-387-97447-4; Isbn 3-540-97447-4.; 0 : 87-152.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM REVIEW ENVIRONMENTAL CONTAMINATION TOXICOLOGY
KEYWORDS: General Biology-Institutions
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-Foods

KEYWORDS: Public Health: Environmental Health-Air
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KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Angiospermae

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KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Angiospermae

506. Oomen, P. A. (86). **A Sequential Scheme for Evaluating the Hazard of Pesticides to Bees, Apis mellifera.** *Meddedelingen van de Fakulteit Landbouwwetenshupen Rijksuniversitiet Gent* 51.

Chem Codes: Chemical of Concern: MOM; Rejection Code: REVIEW.

507. Oomen, P. A., Romeijn, G., and Wiegers, G. L. (91). **Side-effects of 100 pesticides on the predatory mite Phytoseiulus persimilis, collected and evaluated according to the EPPO guideline.** *Bull Oepp (Organ Eur Mediterr Prot Plant)* 21 : 701-712.

Chem Codes: Chemical of Concern: SZ,MOM; Rejection Code: NO DURATION.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. A sequential decision-making scheme for classifying the side-effects of pesticides on the predatory mite Phytoseiulus persimilis has been published recently as an EPPO Guideline. Practical experience with the use of this guideline is reported in this paper. One hundred commercially available plant protection products were tested on the organophosphate-resistant P. persimilis population now predominant in Europe. Test results and hazard classifications of these 51 insecticides/acaricides, 33 fungicides, 12 herbicides and 4 growth regulators are given. Criteria for classification are those recommended by the IOBC Working Group 'Pesticides and Beneficial Organisms'. The use of the scheme appeared to be practical and efficient.
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Invertebrata
KEYWORDS: Organisms-Unspecified
KEYWORDS: Acarina

508. Osselton, M. D. and Snelling, R. D. (86). **CHROMATOGRAPHIC IDENTIFICATION OF PESTICIDES.** *J Chromatogr* 368 : 265-272.

Chem Codes: Chemical of Concern: MOM,CBF,ADC; Rejection Code: NO TOX DATA.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM INSECTICIDE FUNGICIDE HERBICIDE

KEYWORDS: Comparative Biochemistry
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
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KEYWORDS: Economic Entomology-Chemical and Physical Control

510. Oudejans, J. Hm (99). **Wageningen Agricultural University Papers, 99. 1. Studies on IPM policy in SE Asia: Two centuries of plant protection in Indonesia, Malaysia and Thailand.** *Oudejans, J. H. M. Wageningen Agricultural University Papers, 99. 1. Studies on Ipm Policy in Se Asia: Two Centuries of Plant Protection in Indonesia, Malaysia and Thailand. Xviii+316p.+++Wageningen Agricultural University: Wageningen, Netherlands. Isbn 90-5782-020-X.* 99 : Xviii+316p.

Chem Codes: MOM,MLT,ADC,CBF; Rejection Code: NO TOX DATA.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK IPM POLICY INTEGRATED PEST MANAGEMENT POLICY PLANT PROTECTION 200 YEAR HISTORY PEST MANAGEMENT PESTICIDES HORTICULTURE FARMING AGRICULTURE SOUTHEAST ASIA ASIA INDONESIA MALAYSIA THAILAND ORIENTAL REGIONBIOSIS COPYRIGHT: BIOL ABS. This book features a study of integrated pest management (IPM) policy and implementation in Indonesia, Malaysia and Thailand. The book contains 10 chapters, including an introduction, an epilogue, an English summary and a Dutch summary. The chapters also focus on the development of agriculture in the three countries, the development of IPM in South East Asia, horticulture, and the pesticide market. A list of abbreviations and acronyms, an extensive reference list, maps, data tables, bar graphs, and line graphs supplement this book, which should be of interest to agricultural scientists, policy makers, farmers and others interested in IPM.
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511. Oudejans, J. Hm (99). **Wageningen Agricultural University Papers, 99. 1. Studies on IPM policy in SE Asia: Two centuries of plant protection in Indonesia, Malaysia and Thailand.** *Oudejans, J. H. M. Wageningen Agricultural University Papers, 99. 1. Studies on Ipm Policy in Se Asia: Two Centuries of Plant Protection in Indonesia, Malaysia and Thailand. Xviii+316p.+++Wageningen Agricultural University: Wageningen, Netherlands. Isbn 90-5782-020-X.* 99 : Xviii+316p.

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ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK IPM POLICY INTEGRATED PEST MANAGEMENT POLICY PLANT PROTECTION 200 YEAR HISTORY PEST MANAGEMENT

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512. Oudejans, J. Hm (99). **Wageningen Agricultural University Papers, 99. 1. Studies on IPM policy in SE Asia: Two centuries of plant protection in Indonesia, Malaysia and Thailand.** *Oudejans, J. H. M. Wageningen Agricultural University Papers, 99. 1. Studies on Ipm Policy in Se Asia: Two Centuries of Plant Protection in Indonesia, Malaysia and Thailand. Xviii+316p.+++Wageningen Agricultural University: Wageningen, Netherlands. Isbn 90-5782-020-X.* 99 : Xviii+316p.

Chem Codes: Chemical of Concern: MOM,MLT,ADC,CBF; Rejection Code: NO TOX DATA.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK IPM POLICY INTEGRATED PEST MANAGEMENT POLICY PLANT PROTECTION 200 YEAR HISTORY PEST MANAGEMENT PESTICIDES HORTICULTURE FARMING AGRICULTURE SOUTHEAST ASIA ASIA INDONESIA MALAYSIA THAILAND ORIENTAL REGIONBIOSIS COPYRIGHT: BIOL ABS. This book features a study of integrated pest management (IPM) policy and implementation in Indonesia, Malaysia and Thailand. The book contains 10 chapters, including an introduction, an epilogue, an English summary and a Dutch summary. The chapters also focus on the development of agriculture in the three countries, the development of IPM in South East Asia, horticulture, and the pesticide market. A list of abbreviations and acronyms, an extensive reference list, maps, data tables, bar graphs, and line graphs supplement this book, which should be of interest to agricultural scientists, policy makers, farmers and others interested in IPM.
KEYWORDS: General Biology-Conservation
KEYWORDS: General Biology-History and Archaeology
KEYWORDS: Social Biology
KEYWORDS: Agronomy-General
KEYWORDS: Horticulture-General
KEYWORDS: Pest Control

513. Page, M. J. and French, M. (92). **Determination of N-methylcarbamate insecticides in vegetables, fruits, and feeds using solid-phase extraction cleanup in the normal phase.** *J Aoac (Assoc Off Anal Chem) Int* 75 : 1073-1083.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. A liquid chromatographic (LC) method is described for the simultaneous determination of 8 carbamate pesticides in vegetable, fruit, and feed crops. Carbamates are extracted and then partitioned from vegetable, fruit, and feed crop samples using procedures previously developed. An aliquot is taken from the sample partitioning, evaporated by a nitrogen stream, and reconstituted in 5 mL 5% methylene chloride-hexane. Sample cleanup is accomplished by aspirating through an aminopropyl Bond Elut(NH2) solid-phase extraction column. Following aspiration, the sample is eluted with 10 mL 2% methanol-methylene chloride. The eluate is evaporated, again under nitrogen, and reconstituted in methanol for fluorometric LC analysis. The method provides an excellent cleanup for all matrixes studied. Initial recoveries of 98, 90, and 91% were obtained for fortifications of 0.05, 0.5, and 5.0 ppm, respectively. Linear range recovery studies demonstrated results that agreed with the initial r
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General

KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Food Technology-Fruits
KEYWORDS: Food Technology-Evaluations of Physical and Chemical Properties (1970-)
KEYWORDS: Toxicology-Foods
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515. Papadopoulou-Mourkidou, E. and Patsias, J. (96). **Development of a semi-automated high-performance liquid chromatographic-diode array detection system for screening pesticides at trace levels in aquatic systems of the Axios River basin.** *Journal of Chromatography a* 726 : 99-113.

Chem Codes: SZ,MTL,MOM,MLT,ADC; Rejection Code: NO SPECIES .
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. A semi-automated HPLC-diode array detection (HPLC-DAD) system associated with an on-line sample enrichment device was developed for the analysis of a wide range of pesticides in water samples of the Axios River basin. The system was optimized with respect to the analytical column, the on-line trace enrichment device, the mobile-phase composition and gradient duration, the sample volume and pH, and the chromatographic profile of the background dissolved organic material. The system developed was applied for the tentative identification and quantitation of 46 target analytes including parent pesticides and major conversion products in field water samples. The limit of detection (LOD) for the majority of the compounds was in the range 0.10-0.02 mug/l level; the LOD for three target analytes, the aliphatic carbamate esters aldicarb sulfone, oxamyl and methomyl, was in the range of 1.0-0.5 mug/l. In addition, stability studies of all analytes in field water samples stored ei
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518. Papathakis, M. L., Feng, H. M., and Lee, S. M. (90). **ENZYME INHIBITION ASSAY TO SCREEN N METHYLCARBAMATE PESTICIDE RESIDUES IN FRUITS AND VEGETABLES.** *200th American Chemical Society National Meeting, Washington, D.c., Usa, August 26-31, 1990. Abstr Pap Am Chem Soc* 200 : Agro 62.

Chem Codes: MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM ABSTRACT EEL CROP MATRIX PROPOXUR OXAMYL ALDICARB SULFOXIDE ALDICARB CARBOFURAN 3 HYDROXYCARBOFURAN METHOMYL METHIOCARB CARBARYL INSECTICIDE ACETONITRILE CHOLINESTERASE ASSAY KIT
KEYWORDS: General Biology-Symposia
KEYWORDS: Biochemical Studies-General
KEYWORDS: Enzymes-Methods
KEYWORDS: Horticulture-Vegetables
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KEYWORDS: Pest Control
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KEYWORDS: Economic Entomology-Chemical and Physical Control

521. Parrilla, P. and Martinez Vidal Jl (97). **Determination of pesticide residues in water using LLE or SPE and HPLC detection.** *Analytical Letters* 30 : 1719-1738.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: METHODS.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. A comparative study was carried out to determine 21 pesticides in environmental water samples by high performance liquid chromatography using both liquid-liquid (LLE) and solid-phase (SPE) extractions. The reproducibility of the SPE method is better than employing LLE with dichloromethane, but SPE was more efficient to recover metomyl, dimethoate, chlorpyrifos ethyl and carbophenothion.
KEYWORDS: Ecology
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523. Parron, T., Hernandez, A. F., Pla, A., and Villanueva, E. (96). **Clinical and biochemical changes in greenhouse sprayers chronically exposed to pesticides.** *Human & Experimental Toxicology* 15 : 957-963.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. 1 This study was conducted with the aim of evaluating the impact on health produced by the use of different types of pesticides in greenhouses. It is based on the need to practice and develop biological monitoring techniques to assess exposure and predict health risk in workers occupationally exposed to pesticides. 2 Two groups of greenhouse workers with either high or low exposure to a combination of pesticides was taken in Almeria, A Spanish province where cultures under plastic are very extended. 3 One hundred and five sprayers were interviewed to collect information about symptoms and signs related to past exposures. Each pesticide sprayer was examined by a physician, and a blood sample was drawn for plasma and red blood cell cholinesterases, complete blood count, and liver and renal function tests. 4 Exposure of workers to a combination of pesticides resulted in 37% of the workers showing toxic signs and symptoms. The main toxic effects observed were a high inciden
KEYWORDS: Pathology
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KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Occupational Health
KEYWORDS: Pest Control
KEYWORDS: Hominidae

525. Patnode, K. A. and White, D. H. (91). **Effects of Pesticides on Songbird Productivity in Conjunction with Pecan Cultivation in Southern Georgia: A Multiple-Exposure Experimental Design.** *Environ.Toxicol.Chem.* 10: 1479-1486.

Chem Codes: Chemical of Concern: MOM,DMT,ES,CPY; Rejection Code: NO DURATION/SURVEY.

526. Patsias, J. and Papadopoulou-Mourkidou, E. (1999Jul-Aug). **A fully automated system for analysis of**

pesticides in water: on-line extraction followed by liquid chromatography-tandem photodiode array/postcolumn derivatization/fluorescence detection. *J Aoac Int 1999 Jul-Aug;82(4):968-81.* 82: 968-81.

Chem Codes: Chemical of Concern: MOM,ADC; Rejection Code: NO SPECIES.
ABSTRACT: A fully automated system for on-line solid phase extraction (SPE) followed by high-performance liquid chromatography (HPLC) with tandem detection with a photodiode array detector and a fluorescence detector (after postcolumn derivatization) was developed for analysis of many chemical classes of pesticides and their major conversion products in aquatic systems. An automated on-line-SPE system (Prospekt) operated with reversed-phase cartridges (PRP-1) extracts analytes from 100 mL acidified (pH = 3) filtered water sample. On-line HPLC analysis is performed with a 15 cm C18 analytical column eluted with a mobile phase of phosphate (pH = 3)-acetonitrile in 25 min linear gradient mode. Solutes are detected by tandem diode array/derivatization/fluorescence detection. The system is controlled and monitored by a single computer operated with Millenium software. Recoveries of most analytes in samples fortified at 1 microgram/L are > 90%, with relative standard deviation values of < 5%. For a few very polar analytes, mostly N-methylcarbamoyloximes (i.e., aldicarb sulfone, methomyl, and oxamyl), recoveries are < 20%. However, for these compounds, as well as for the rest of the N-methylcarbamates except for aldicarb sulfoxide and butoxycarboxim, the limits of detection (LODs) are 0.005-0.05 microgram/L. LODs for aldicarb sulfoxide and butoxycarboxim are 0.2 and 0.1 microgram, respectively. LODs for the rest of the analytes except 4-nitrophenol, bentazone, captan, decamethrin, and MCPA are 0.05-0.1 microgram/L. LODs for the latter compounds are 0.2-1.0 microgram/L. The system can be operated unattended.

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528. Paulsen, E., Andersen, K. E., and Skoven, I. G. (97). **CONCOMITANT SENSITIZATION TO LANNATE AND GERBERA.** *Contact Dermatitis* 37 : 128-129.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM CASE STUDY NOTE GERBERA PRIMULA HUMAN PLANT FEMALE GREENHOUSE WORKERS MIDDLE AGE HUMAN ALLERGY DERMATOLOGY OCCUPATIONAL HEALTH LANNATE PESTICIDE PATCH TESTING
KEYWORDS: Biochemical Studies-General
KEYWORDS: Integumentary System-Pathology
KEYWORDS: Immunology and Immunochemistry-Immunopathology
KEYWORDS: Allergy

KEYWORDS: Public Health: Environmental Health-Occupational Health
KEYWORDS: Plant Physiology
KEYWORDS: Compositae
KEYWORDS: Primulaceae
KEYWORDS: Hominidae

529. Pedigo, L. P. and Higley, L. G. (92). **THE ECONOMIC INJURY LEVEL CONCEPT AND ENVIRONMENTAL QUALITY A NEW PERSPECTIVE.** *Am Entomol* 38 : 12-21.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO TOX DATA.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM INSECT CROP YIELD PEST CONTROL INTEGRATED PEST MANAGEMENT PESTICIDE ENVIRONMENTAL PROTECTION
KEYWORDS: General Biology-Conservation
KEYWORDS: Ecology
KEYWORDS: Ecology
KEYWORDS: Toxicology-General
KEYWORDS: Plant Physiology
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Integrated Control
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Invertebrata
KEYWORDS: Plantae-Unspecified
KEYWORDS: Insecta-Unspecified

530. Peluso, M., Merlo, F., Munnia, A., Bolognesi, C., Puntoni, R., and Parodi, S. (96). **32P-postlabeling detection of DNA adducts in peripheral white blood cells of greenhouse floriculturists from Western Liguria, Italy.** *Cancer Epidemiology Biomarkers & Prevention* 5 : 361-369.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Pesticides are widely used in agriculture to enhance crop yields and to control disease vectors. Floriculturists work frequently in greenhouses and may be exposed to high levels of pesticides, which may result in adverse health effects. To evaluate the relationship between exposure to pesticides and DNA adduct formation in peripheral WBCs of Italian floriculturists, the nuclease P1 modification of a 32P-postlabeling assay was used to analyze WBC DNA from floriculturists (n = 26) and matched controls (n = 22). DNA adduct-positive samples were more frequent in floriculturists (11/26; 42%) than in matched controls (2/22; 9%) (P < 0.01). Slightly higher frequencies of DNA adduct-positive samples were observed in noriculturists \ 44 years of age (53%) and in female floriculturists (57%). Floricultural practice was found to be associated with a significantly higher DNA adduct-positive rate in WBCs (rate ratio, 5.12; 95% confidence interval, 1.1-23.7) after allowing for the
KEYWORDS: Cytology and Cytochemistry-Human
KEYWORDS: Genetics and Cytogenetics-Human
KEYWORDS: Biochemical Studies-Nucleic Acids
KEYWORDS: Biochemical Studies-Minerals
KEYWORDS: Blood
KEYWORDS: Blood
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis
KEYWORDS: Public Health: Environmental Health-Occupational Health
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Hominidae

531. Pollard, A. D., Mayo, B. C., Haynes, L., Hawkins, D. R., Hanagan, M. A., Payne, W. G., Reiser, R. W., and Ryan, D. L. (95). **Metabolism of Methomyl in Rats.** *In: 209th Am.Chem.Soc.Natl.Meet., Apr.2-6, 1995, Anaheim, CA, Abstr.Pap.Am.Chem.Soc.* 209: Agro 59.

Chem Codes: Chemical of Concern: MOM; Rejection Code: ABSTRACT.

532. Pollard, G. V. (91). **Constraints to IPM development and a strategy for management of tomato and cabbage pests in Trinidad, West Indies.** *Trop Pest Manage* 37 : 59-62.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: NO TOX DATA.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Despite high social and economic costs resulting from pesticide use, farmers in many developing countries still persist in this method of pest control. One reason is the perception that the development and implementation of IPM strategies are beyond their capabilities. Using the example of cabbage and tomato production in Trinidad, insecticide use was calculated at above 40.0% and 100.0% respectively of recommended rates, despite the introduction of parasitoids for cabbage pest control and reports that fruit- and leaf-feeding tomato pests may not cause serious yield loss. An IPM strategy for these crops is suggested based on increased research, including alternatives to pesticides, improved application technology and pest monitoring, together with a strong extension capability.
KEYWORDS: Biochemical Studies-General
KEYWORDS: Horticulture-Vegetables
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Field
KEYWORDS: Economic Entomology-Biological Control
KEYWORDS: Economic Entomology-Integrated Control
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Cruciferae
KEYWORDS: Solanaceae

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534. Porter, W. P., Dahmer, L., Green, S., Debbink, N., and Carlson, I. (91). **LOW LEVEL MIXTURES OF HERBICIDE-INSECTICIDE-NITRATE EFFECTS ON HORMONE AND AGGRESSION LEVELS.** *Annual Meeting of the American Society of Zoologists, American Microscopical Society, Animal Behavior Society, the Crustacean Society and the International Association of Astacology, Atlanta, Georgia, Usa, December 27-30, 1991. Am Zool* 31 : 57a.

Chem Codes: Chemical of Concern: MOM,ADC; Rejection Code: ABSTRACT.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM ABSTRACT PEROMYSCUS-MANICULATUS RAT THYROXINE GROWTH HORMONE NEUROENDOCRINE IMMUNOLOGY CARBAMATE ALDICARB METHOMYL TRIAZINE METRIBUZIN DRINKING WATER BEHAVIOR
KEYWORDS: General Biology-Symposia
KEYWORDS: Behavioral Biology-Animal Behavior

KEYWORDS: Biochemical Studies-Proteins
KEYWORDS: Biochemical Studies-Minerals
KEYWORDS: Endocrine System-Pituitary
KEYWORDS: Endocrine System-Thyroid
KEYWORDS: Endocrine System-Neuroendocrinology (1972-)
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Immunology and Immunochemistry-General
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KEYWORDS: Muridae

535. Porter, W. P., Dahmer, L., Green, S., Debbink, N., and Carlson, I. (91). **LOW LEVEL MIXTURES OF HERBICIDE-INSECTICIDE-NITRATE EFFECTS ON HORMONE AND AGGRESSION LEVELS.** *Annual Meeting of the American Society of Zoologists, American Microscopical Society, Animal Behavior Society, the Crustacean Society and the International Association of Astacology, Atlanta, Georgia, Usa, December 27-30, 1991. Am Zool* 31 : 57a.

Chem Codes: Chemical of Concern: MOM,ADC; Rejection Code: ABSTRACT.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM ABSTRACT PEROMYSCUS-MANICULATUS RAT THYROXINE GROWTH HORMONE NEUROENDOCRINE IMMUNOLOGY CARBAMATE ALDICARB METHOMYL TRIAZINE METRIBUZIN DRINKING WATER BEHAVIOR
KEYWORDS: General Biology-Symposia
KEYWORDS: Behavioral Biology-Animal Behavior
KEYWORDS: Biochemical Studies-Proteins
KEYWORDS: Biochemical Studies-Minerals
KEYWORDS: Endocrine System-Pituitary
KEYWORDS: Endocrine System-Thyroid
KEYWORDS: Endocrine System-Neuroendocrinology (1972-)
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Immunology and Immunochemistry-General
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Cricetidae
KEYWORDS: Muridae

536. Pospisil, P. A., Marcus, M. F., and Kobus, M. A. (91). **THE APPLICATION OF SUPERCRITICAL FLUID CAPILLARY CHROMATOGRAPHY TO THE ANALYSIS OF APPENDIX-VIII AND XI COMPOUNDS.** *Friedman, D. (Ed.). Astm (American Society for Testing and Materials) Special Technical Publication, 1075. Waste Testing and Quality Assurance, Vol. 3. Xii+411p. Astm (American Society for Testing and Materials): Philadelphia, Pennsylvania, Usa. Illus. Isbn 0-8031-1294-7.* 0 : 154-169.

Chem Codes: Chemical of Concern: MOM,CST; Rejection Code: METHODS.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM POLYCHLORINATED BIPHENYLS DIOXINS CREOSOTE COAL TAR SOLID WASTE GROUNDWATER ENVIRONMENTAL POLLUTANTS
KEYWORDS: Ecology
KEYWORDS: Comparative Biochemistry
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Plant Physiology
KEYWORDS: Soil Science-Physics and Chemistry (1970-)

537. Pree, D. J. (90). **Resistance Management in Multiple-Pest Apple Orchard Ecosystems in Eastern North America.** *In: R.T.Roush and B.E.Tabashnik (Eds.), Pesticide Resistance in Arthropods, Chapter 10, Chapman and Hall, New York, NY* 261-276.

Chem Codes: EcoReference No.: 70807
Chemical of Concern: MOM; Rejection Code: REVIEW.

538. Pree, D. J. , Archibald, D. E., and Cole, K. J. (90). **Insecticide resistance in spotted tentiform leafminer (Lepidoptera: Gracillariidae): Mechanisms and management.** *Journal of economic entomology [j. Econ. Entomol.]* 83: 678-685.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO TOX DATA.
Abstract: Resistance to organophosphorous insecticides, pyrethroids, and methomyl occurred in populations of spotted tentiform leafminer, Phyllonorycter blancardella (F.), from southern Ontario. Resistance to organophosphorous insecticides occurred in all populations from commercial orchards. Resistance appeared to be due to an insensitive target acetylcholinesterase (AChE). Addition of several types of synergists to azinphosmethyl solutions did not affect toxicity. Resistance to methomyl appeared to be partially due to enhanced metabolism by aliesterases and partially to reduced inhibition of AChE. Selection for methomyl resistance was separate from resistance to organophosphorous insecticides. Increased activity of glutathione S-transferases was not implicated in resistance to either organophosphorous insecticides or methomyl. With current pest control practices, management of resistance to organophosphorous insecticides is not feasible in Ontario apple orchards.

539. Premazzi, G. and Ziglio, G. (95). **REGULATIONS AND MANAGEMENT.** *Vighi, M. And E. Funari (Ed.). Pesticide Risk in Groundwater. Xii+275p. Crc Press, Inc.: Boca Raton, Florida, Usa* London, England, Uk. Isbn 0-87371-439-3.; 0 : 203-258.

Chem Codes: Chemical of Concern: SZ,MTL,MOM,CBF,ADC; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER HUMAN PESTICIDES DRINKING WATER EPA POLICY ENVIRONMENTAL
KEYWORDS: General Biology-Institutions
KEYWORDS: General Biology-Conservation
KEYWORDS: Nutrition-Pathogenic Diets
KEYWORDS: Toxicology-Foods
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health-Public Health Administration and Statistics
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control
KEYWORDS: Hominidae

540. Premazzi, G. and Ziglio, G. (95). **REGULATIONS AND MANAGEMENT.** *Vighi, M. And E. Funari (Ed.). Pesticide Risk in Groundwater. Xii+275p. Crc Press, Inc.: Boca Raton, Florida, Usa* London, England, Uk. Isbn 0-87371-439-3.; 0 : 203-258.

Chem Codes: Chemical of Concern: SZ,MTL,MOM,CBF,ADC; Rejection Code: HUMAN HEALTH.
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KEYWORDS: Public Health-Public Health Administration and Statistics
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control
KEYWORDS: Hominidae

541. Price, N. R. (88). **Insecticide-Insensitive Acetylcholinesterase from a Laboratory Selected and a Field Strain of Housefly (Musca domestica) (L.).** *Comp.Biochem.Physiol.C* 90: 221-224.

Chem Codes: User Define 2: WASHT
Chemical of Concern: MOM,AZM,DDVP; Rejection Code: IN VITRO.

542. Prostak, D. J. (94). **CONTROL OF EAR-INFESTING INSECTS IN SWEET CORN WITH HIGH RATES OF BACILLUS THURINGIENSIS 1993.** *Burditt, A. K. Jr. (Ed.). Arthropod Management Tests, Vol. 19. Iii+403p. Entomological Society of America: Lanham, Maryland, Usa.* 0 : 94-95.

Chem Codes: Chemical of Concern: MOM; Rejection Code: BIOLOGICAL TOXICANT.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ZEA-MAYS HELICOVERPA-ZEA OSTRINIA-NUBILALIS SPODOPTERA-FRUGIPERDA ASANA XL LANNATE KINETIC DIPEL 2X AGREE ABG-6348 BIOBIT HOT SAUCE INSECTICIDE BIOLOGICAL CONTROL
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-General
KEYWORDS: Agronomy-Grain Crops
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Field
KEYWORDS: Economic Entomology-Biological Control
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Invertebrata
KEYWORDS: Endospore-Forming Gram-Positives (1992-)
KEYWORDS: Gramineae
KEYWORDS: Lepidoptera

543. Quarles, J. M., Sega, M. W., Schenley, C. K., and Tennant, R. W. (1979May). **Rapid screening for chemical carcinogens: transforming activity of selected nitroso compounds detected in a transplacental host-mediated culture system.** *Natl Cancer Inst Monogr 1979 May;(51):257-63.* 257-63.

Chem Codes: Chemical of Concern: MOM; Rejection Code: IN VITRO.
ABSTRACT: The transplacental host-mediated hamster cell culture system was used to test a variety of solvents and chemicals of unknown and known (positive and negative) activity for their ability to induce morphologic transformation of cells and growth in agar. Examination of approximately 13,000 colonies of cells from untreated animals yielded no transformants, thus demonstrating no spontaneous transformation in the system. Similar negative results were obtained after animals were treated with the solvents acetone, ethanol, dimethyl sulfoxide, dimethylformamide, and trioctanoin oil. Several known carcinogens, including benzo[a]pyrene, methylnitrosourethane, urethan, and diethylnitrosamine, were positive for transforming activity. Three pesticides, carbaryl, methomyl, and landrin, and their N-nitroso derivatives were tested. All the nitrosated forms had transforming activity, but only one of the pesticides, landrin, was positive. In all experiments conducted, results of the agar-growth test correlated well with tests for morphologic transformation. The transplacental hamster embryol cell culture system therefore detected transforming activity of N-nitroso compounds and some known carcinogens.

544. Rangaswamy, J. R., Prakash, S. R., and Vijayashankar, Y. N. (1977Sep). **Spectrophotometric determination of methomyl residues in selected vegetables, grains, and soil.** *J Assoc Off Anal Chem 1977 Sep;60(5):1093-6.* 60: 1093-6.

Chem Codes: Chemical of Concern: MOM; Rejection Code: CHEM METHOD.
ABSTRACT: Methomyl (S-methyl-N-[(methylcarbamoyl) oxy] thioacetimidate) is converted to oxime and hydroxylamine by alkali and acid treatment, respectively. Hydroxylamine is oxidized with iodine in the presence of sulfanilic acid to yield p-diazoniumbenzenesulfonic acid which is coupled with alpha-naphthylamine to form a crimson p-benzenesulfonic acid-azo-alpha-naphthylamine with an absorption maximum at 520 nm. The relationship between absorbance and concentration of methomyl is linear in the range 0.5-10 microgram. The method is sensitive and specific; 0.625 ppm methomyl can be determined in a 40 g sample of selected vegetables, grains, and soil.

545. Rao, B. V. (88). **INDUSTRY SORE OVER ONE TIME EXCEPTION.** *Pesticides (Bombay)* 22 : 7-10.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM WHITEFLY BOLLWORM COTTON PESTS FLUVALINATE TRIAZOPHOS METHOMYL FENPROPATHRIN INSECTICIDE INDIA
KEYWORDS: Agronomy-Fiber Crops
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Field
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Invertebrata
KEYWORDS: Malvaceae
KEYWORDS: Homoptera

546. Rauhut, D. (Xxiii+567p). **TRACE ANALYSIS OF SULFUROUS OFF-FLAVORS IN WINE CAUSED BY EXTREMELY VOLATILE S-CONTAINING METABOLITES OF PESTICIDES E.G. ORTHENE.** *Ribereau-Gayon, P. And A. Lonvaud. Actualites Oenologiques 89* Comptes Rendus Du 4e Symposium International D'oenologie Bordeaux, 15-17 Juin 1989; Dunod: Paris, France.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO TOX DATA.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM GRAPE CATERPILLAR INSECTICIDE ODORANT METHYLMERCAPTAN DIETHYL DISULFIDE ACEPHATE HYDROLYSIS STORAGE TEMPERATURE WESTERN EUROPE
KEYWORDS: General Biology-Symposia
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biochemical Studies-Minerals
KEYWORDS: External Effects-Temperature as a Primary Variable (1971-)
KEYWORDS: Food Technology-Malts
KEYWORDS: Food Technology-Evaluations of Physical and Chemical Properties (1970-)
KEYWORDS: Food Technology-Preparation
KEYWORDS: Toxicology-Foods
KEYWORDS: Horticulture-Small Fruits
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Fruits and Nuts
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Invertebrata
KEYWORDS: Vitaceae
KEYWORDS: Lepidoptera

547. Readman, J. W., Albanis, T. A., Barcelo, D., Galassi, S., Tronczynski, J., and Gabrielides, G. P. (93). **Herbicide contamination of Mediterranean estuarine waters: Results from a MED POL pilot survey.** *Marine Pollution Bulletin* 26: 613-619.

Chem Codes: SZ,MTL,MLT,MOM; Rejection Code: NO SPECIES.
The reported data offers the first extensive evidence that significant concentrations of some herbicides persist in marine systems. In the areas studied (the Ebro delta on the Eastern Coast of Spain, the Rhone delta in the South of France, the River Po, Italy/the Northern Adriatic Sea, the Thermaikos and Amvrakikos Gulfs in Greece and the Nile delta in Egypt) the most commonly encountered herbicides were atrazine, simazine, alachlor, metolachlor and molinate. In general, aqueous concentrations encountered in the riverine inputs were comparable to (or below) those reported for rivers in other regions of the World. Concentrations generally declined from freshwater locations through estuaries to marine waters. The distributions of some herbicides (e.g. the triazines) in sediments endorsed the environmental persistence of these compounds. In contrast to the other areas studied, no herbicides were detected in samples from a preliminary survey of the Nile delta.
http://www.sciencedirect.com/science/article/B6V6N-488G7GR-H9/2/ea425e683d3d9082721edd80fd7bb232

548. Readman, J. W., Albanis, T. A., Barcelo, D., Galassi, S., Tronczynski, J., and Gabrielides, G. P. (93). **Herbicide contamination of Mediterranean estuarine waters: Results from a MED POL pilot survey.**

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Chem Codes: Chemical of Concern: SZ,MTL,MLT,MOM; Rejection Code: NO SPECIES.
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http://www.sciencedirect.com/science/article/B6V6N-488G7GR-H9/2/ea425e683d3d9082721edd80fd7bb232

549. Reeve, M. W., O'Connell, L. P., Bissell, S., and Ross, J. (92). **Characterization of methomyl dissipation on grape foliage.** *Bulletin of environmental contamination and toxicology [bull. Environ. Contam. Toxicol.]* 49: 105-111.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
Abstract: Dislodgeable foliar residues (DFRs) of the carbamate insecticide methomyl (Lannate(R)) on grapes were monitored during a six month period to help define safe worker reentry intervals. The study was conducted in response to two suspected (one confirmed) episodes of methomyl related illness during the summer of 1988 (O'Malley, 1989). The confirmed incident occurred on May 25, 1988, and involved thirteen individuals in a grape girdling crew. Eleven of these workers displayed clinical symptoms typical of carbamate poisoning. Methomyl was implicated and later proven to be the causative agent. The data from a concurrent dislodgeable foliar residue study established 0.1 micrograms/cm super(2) as the safe level for reentry into the field. A second potential illness episode which occurred on September 23, 1988 was evaluated and later discounted due to a lack of statistical and symptomatic evidence. However, the DFR data compiled as part of this second illness investigation were pivotal in characterizing the time dependent dissipation of methomyl.

550. Reeves, R. G. and Woodham, D. W. (1974Jan-Feb). **Gas chromatographic analysis of methomyl residues in soil, sediment, water, and tobacco utilizing the flame photometric detector.** *J Agric Food Chem 1974 Jan-Feb;22(1):76-8.* 22: 76-8.

Chem Codes: Chemical of Concern: MOM; Rejection Code: METHODS.

551. Regupathy, A. and Jeyarajan, R. (85). **Management of Banana Bunchy Top Disease.** *In: S.Jeyarajan (Ed.), Integrated Pest and Disease Management, Natl.Seminar, Sept.1984, Tamil Nadu Agric.Univ., Coimbatore, India* 225-237.

Chem Codes: Chemical of Concern: MP,CPY,ES,PHSL,PPHD,DMT,CBF,MOM; Rejection Code: REVIEW.

552. Reiser, R. W., Dietrich, R. F., Djanegara, T. Ks, Fogiel, A. J., Payne, W. G., Ryan, D. L., and Zimmerman, W. T. (97). **Identification of a novel animal metabolite of methomyl insecticides.** *Journal of Agricultural and Food Chemistry* 45 : 2309-2313.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO TOX DATA.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. In studies conducted to determine the fate of methomyl in goat, chicken, and monkey, an unknown highly polar, acidic metabolite was found in the urine/excreta of all three animals. The metabolite was purified by HPLC and analyzed by microcolumn LC with electrospray ionization and by NMR. A Hypercarb porous graphitic carbon HPLC column was used for purification and LC/MS, since the unknown was unretained on conventional reversed phase HPLC columns. (14C)Methomyl was used as radiotracer, and (13C)methomyl was added at the 50% level to facilitate metabolite identification. The molecular weight of the metabolite was determined by LC/MS-electrospray, using positive and negative ionization, and structurally useful fragment ions were obtained in both modes by in-source collision-induced

dissociation (CID). High-resolution accurate mass measurements of the MH+ doublet allowed assignment of the elemental composition. NMR data showed the presence of methyl, methylene, and methine
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Studies
KEYWORDS: Metabolism-General Metabolism
KEYWORDS: Pest Control
KEYWORDS: Galliformes
KEYWORDS: Bovidae
KEYWORDS: Primates-Unspecified

553. Rhoads, D. M., Kaspi, C. I., Levings, C. S. III*, and Siedow, J. N. (94). **N,N'-dicyclohexylcarbodiimide cross-linking suggests a central core of helices II in oligomers of URF13, the pore-forming T-toxin receptor of cms-T maize mitochondria.** *Proceedings of the national academy of sciences* 91: 8253-8257.

Chem Codes: Chemical of Concern: MOM; Rejection Code: IN VITRO.
Abstract: URF13 is a mitochondrially encoded, integral membrane protein found only in maize carrying the cms-T cytoplasm. URF13 is associated with cytoplasmic male sterility, Texas type, and causes susceptibility to the fungal pathogens Bipolaris maydis race T and Phyllosticta maydis. URF13 is predicted to contain three transmembrane alpha -helices and is a receptor for the pathotoxins (T-toxins) produced by B. maydis race T and P. maydis. Binding of T-toxin to URF13 leads to membrane permeability. Cross-linking of URF13 oligomers with N,N'-dicyclohexylcarbodiimide (DCCD) protects Escherichia coli cells expressing URF13 and cms-T mitochondria from the permeability caused by T-toxin or methomyl. Using mutated forms of URF13 expressed in E. coli cells, we determined the molecular mechanism of DCCD protection. We separately changed Lys-37 in helix II to isoleucine (K37I-URF13) and Lys-32 in the helix I /helix II loop region to alanine (K32A-URF13). DCCD treatment of K37I-URF13-expressing cells did not protect the cells from permeability caused by T-toxin or methomyl. DCCD cross-linking was greatly reduced in K37I-URF13 and in D39V-URF13-expressing cells, but it was unaffected in K32A-URF13-expressing cells. Binding of methomyl or T-toxin decreases DCCD cross-linking of URF13 oligomers expressed in either E. coli or cms-T mitochondria. We conclude that Asp-39 in helix II is cross-linked by DCCD to Lys-37 in helix II of an adjacent URF13 molecule and that this cross-linking protects against toxin-mediated permeabilization. The results also indicate that helices II form a central core in URF13 oligomers.

554. Rhoads, D. M., Levings, C. S. 3rd, and Siedow, J. N. (1995Aug). **URF13, a ligand-gated, pore-forming receptor for T-toxin in the inner membrane of cms-T mitochondria.** *J Bioenerg Biomembr 1995 Aug;27(4):437-45.* 27: 437-45.

Chem Codes: Chemical of Concern: MOM; Rejection Code: IN VITRO.
ABSTRACT: URF13 is the product of a mitochondrial-encoded gene (T-urf13) found only in maize plants containing the Texas male-sterile cytoplasm (cms-T), and it is thought to be responsible for both cytoplasmic male sterility and the susceptibility of cms-T maize to the fungal pathogens Bipolaris maydis race T and Phyllosticata maydis. Mitochondria isolated from cms-T maize are uniquely sensitive to pathotoxins (T-toxin) produced by these fungi and to methomyl (a commercial insecticide). URF13 acts as a receptor that specifically binds T-toxin to produce hydrophilic pores in the inner mitochondrial membrane. When expressed in Escherichia coli cells, URF13 also forms hydrophilic pores in the plasma membrane if exposed to T-toxin or methomyl. Topological studies established that URF13 contains three membrane-spanning alpha-helices, two of which are amphipathic and can contribute to pore formation. Chemical cross-linking of URF13 was used to demonstrate the existence of URF13 oligomers in cms-T mitochondria and E. coli cells. The ability of the carboxylate-specific reagent, N,N'-dicyclohexycarbodiimide, to cross-link URF13 was used in conjunction with site-directed mutagenesis to establish that the URF13 tetramer has a central core consisting of a four-alpha-helical bundle which undergoes a conformational change after interaction with T-toxin or methomyl. Overall, the experimental evidence indicates that URF13 functions as a ligand-gated, pore-forming T-toxin receptor in cms-T mitochondria.

555. Rhoads, David M., Griffin, H. Carol, Neuenschwander, Barbara Brunner, Levings, III Charles S., and N.Siedow, James (96). **[47]Assays for characterizing URF 13, the pathotoxin and methomyl receptor of cms-T maize.** 566-581.

Chem Codes: Chemical of Concern: MOM; Rejection Code: METHODS, NO TOX DATA.
Number of Volumes: Giuseppe M. Attardi and Anne Chomyn

556. Richard, M. (98). **Pesticides-friend or foe?** *Water Science and Technology* 37 : 19-25.

Chem Codes: Chemical of Concern: MOM,CBF,ADC; Rejection Code: NO TOX DATA.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Pesticides, where used correctly, can save up to 40% in crop losses; however, when pesticides are mal-, mis- or over-used the environmental and public health consequences can be very considerable. The United Nations has issued a list of chemicals that are banned or severely restricted in use; many of the chemicals on this list are pesticides. Whilst the use of highly persistent pesticides such as DDT has proved very effective in the eradication of diseases such as malaria, the adverse effects to the natural environment have been devastating - whole populations of birds have been eliminated. Within the former Soviet Union, the use of highly persistent pesticides was widespread; this has resulted in contamination of both crops, with pesticide residues well in excess of internationally acceptable maximum residue limits, and water resources to such high level that remediation through natural processes will take decades, or by xenobiotic or physicochemical processes will be
KEYWORDS: General Biology-Institutions
KEYWORDS: Social Biology
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Agronomy-General
KEYWORDS: Pest Control

557. Richard, M. (98). **Pesticides-friend or foe?** *Water Science and Technology* 37 : 19-25.

Chem Codes: Chemical of Concern: MOM,CBF,ADC; Rejection Code: NO TOX DATA.
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KEYWORDS: Social Biology
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Agronomy-General
KEYWORDS: Pest Control

558. Richter, E. D., Gasteyer, S., Haj, S. E., Jaqhabir, M., and Safi, J. (**AGRICULTURAL SUSTAINABILITY PESTICIDE EXPOSURES AND HEALTH RISKS ISRAEL THE PALESTINIAN NATIONAL AUTHORITY AND JORDAN.** *Bingham, E. And D. P. Rall (Ed.). Annals of the New York Academy of Sciences, Vol. 837. Preventive Strategies for Living in a Chemical World: a Symposium in Honor of Irving J. Selikoff; International Symposium, Washington, D.c., Usa, November 2-5, 1995. Xv+588p. New York Academy of Sciences: New York, New York, Usa. Isbn 1-57331-074-3(Cloth); Isbn 1-57331-075-1(Paper).; 837 (0). 1997. 269-290.*

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER MEETING PAPER HUMAN

ORGANOCHLORINE PESTICIDES EXPOSURE TOXICOLOGY OCCUPATIONAL HEALTH OCCUPATIONAL EXPOSURE EPIDEMIOLOGY ISRAEL JORDAN PALESTINIAN NATIONAL AUTHORITY PALEARCTIC REGION
KEYWORDS: General Biology-Symposia
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Occupational Health
KEYWORDS: Public Health: Epidemiology-Organic Diseases and Neoplasms
KEYWORDS: Pest Control
KEYWORDS: Hominidae

559. Richter, E. D., Gasteyer, S., Haj, S. E., Jaqhabir, M., and Safi, J. (**AGRICULTURAL SUSTAINABILITY PESTICIDE EXPOSURES AND HEALTH RISKS ISRAEL THE PALESTINIAN NATIONAL AUTHORITY AND JORDAN.** *Bingham, E. And D. P. Rall (Ed.). Annals of the New York Academy of Sciences, Vol. 837. Preventive Strategies for Living in a Chemical World: a Symposium in Honor of Irving J. Selikoff; International Symposium, Washington, D.c., Usa, November 2-5, 1995. Xv+588p. New York Academy of Sciences: New York, New York, Usa. Isbn 1-57331-074-3(Cloth); Isbn 1-57331-075-1(Paper).; 837 (0). 1997. 269-290.*

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER MEETING PAPER HUMAN ORGANOCHLORINE PESTICIDES EXPOSURE TOXICOLOGY OCCUPATIONAL HEALTH OCCUPATIONAL EXPOSURE EPIDEMIOLOGY ISRAEL JORDAN PALESTINIAN NATIONAL AUTHORITY PALEARCTIC REGION
KEYWORDS: General Biology-Symposia
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Occupational Health
KEYWORDS: Public Health: Epidemiology-Organic Diseases and Neoplasms
KEYWORDS: Pest Control
KEYWORDS: Hominidae

560. Ritter, W F (90). **Pesticide contamination of ground water in the United States--a review.** *Journal Of Environmental Science And Health. Part. B, Pesticides, Food Contaminants, And Agricultural Wastes* 25: 1-29.

Chem Codes: Chemical of Concern: SZ,MTL,MOM,ADC; Rejection Code: NO SPECIES.
Over 70 pesticides have been detected in ground water. Aldicarb and atrazine along with the soil fumigants EDB and DCP and DBCP have been the pesticides most frequently detected in ground water. Atrazine concentrations have been correlated with high nitrate concentrations. The triazine herbicides, simazine and cyanazine, have also been detected in ground water. The annual amount of recharge, soil type, depth of aquifer from the surface, nitrate contamination and soil pH are important field parameters in determining ground-water contamination potential by pesticides. Pesticide leaching is reduced by proper choice of crop rotation, increasing pesticide application efficiency, and integrated pest management. [Journal Article, Review, Review, Tutorial; 49 Refs; In English; United States]
http://www.sciencedirect.com/science/article/B6WVB-45CMCBV-1PV/2/63b4d37fc4e7a1b63d3ae68b0aa9d9dd

561. Ritter, W F (90). **Pesticide contamination of ground water in the United States--a review.** *Journal Of Environmental Science And Health. Part. B, Pesticides, Food Contaminants, And Agricultural Wastes* 25: 1-29.

Chem Codes: Chemical of Concern: SZ,MTL,MOM,ADC; Rejection Code: NO SPECIES.
Over 70 pesticides have been detected in ground water. Aldicarb and atrazine along with the soil fumigants EDB and DCP and DBCP have been the pesticides most frequently detected in ground water. Atrazine concentrations have been correlated with high nitrate concentrations. The triazine herbicides, simazine and

cyanazine, have also been detected in ground water. The annual amount of recharge, soil type, depth of aquifer from the surface, nitrate contamination and soil pH are important field parameters in determining ground-water contamination potential by pesticides. Pesticide leaching is reduced by proper choice of crop rotation, increasing pesticide application efficiency, and integrated pest management. [Journal Article, Review, Review, Tutorial; 49 Refs; In English; United States]
http://www.sciencedirect.com/science/article/B6WVB-45CMCBV-1PV/2/63b4d37fc4e7a1b63d3ae68b0aa9d9dd

562. Roditakis, N. E. (86). **Effectiveness of Bacillus thuringiensis Berliner var. kurstaki on the grape berry moth Lobesia botrana Den. and Shiff. (Lepidoptera, Tortricidae) under field and laboratory conditions in Crete.** *Entomologica hellenica [entomol. Hellen.]* 4: 31-35.

Chem Codes: Chemical of Concern: MOM; Rejection Code: BIOLOGICAL TOXICANT.
Abstract: The effectiveness of Bacillus thuringiensis Berliner var. kurstaki (Dipel Abbot Lab.) against the grape berry moth (Lobesia botrana Den. & Shiff.) was evaluated under laboratory and field conditions. Under laboratory conditions (24 plus or minus 0.5 degree C, 55 plus or minus 5% r.h., 2,000 Lux, and 16 hours light daily) B. thuringiensis was compared to triflumuron and methomyl on egg hatching and shallow entries per grape berry. B. thuringiensis had no effect on egg hatching while methomyl and triflumuron had ovicidal action. Shallow entries per grape berry were 0.9-1, 0,0 and 4.55 for B. thuringiensis , triflumuron, methomyl and control, respectively.

563. Rogers, K. R., Cao, C. J., Valdes, J. J., Eldefrawi, A. T., and Eldefrawi, M. E. (91). **Acetylcholinesterase fiber-optic biosensor for detection of anticholinesterases.** *Fundam Appl Toxicol* 16 : 810-820.

Chem Codes: Chemical of Concern: MOM; Rejection Code: METHODS.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. An optical sensor for anticholinesterases (AntiChEs) was constructed by immobilizing fluorescein isothiocyanate (FITC)-tagged eel electric organ acetylcholinesterase (AChE) on quartz fibers and monitoring enzyme activity. The pH-dependent fluorescent signal generated by FITC-AChE, present in the evanescent zone on the fiber surface, was quenched by the protons produced during acetylcholine (ACh) hydrolysis. Analysis of the fluorescence response showed Michaelis-Menten kinetics with a Kapp value of 420 muM for ACh hydrolysis. The reversible inhibitor edrophonium (0.1 mM) inhibited AChE and consequently reduced fluorescence quenching. The biosensor response immediately recovered upon its removal. The carbamate neostigmine (0.1 mM) also inhibited the biosensor response but recovery was much slower. In the presence of ACh, the organophosphate (OP) diisopropylfluorophosphate (DFP) at 0.1 mM did not interfere with the ACh-dependent fluorescent signal quenching, but preexposur
KEYWORDS: Biochemical Methods-Proteins
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biochemical Studies-Proteins
KEYWORDS: Enzymes-Methods
KEYWORDS: Enzymes-Chemical and Physical
KEYWORDS: Toxicology-General
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control

564. Rogers, Kim R. and Mishra, Nirankar N. (2000). **Highly sensitive assay for anticholinesterase compounds using 96 well plate format.** 40: 782-784 .

Chem Codes: CHLOR; Rejection Code: IN VITRO.
Rapid and sensitive detection of organophosphate insecticides using a 96 well plate format is reported. Several features of this assay make it attractive for development as a lab.-based or field screening assay. Acetylcholinesterase (AChE) from eel has been stabilized in a dry gel form for at least 120 days at room temp. The absorbance assay used to measure enzyme activity was evaluated using several solvent systems including water, phosphate buffer, hexane, methanol and ethanol. The AChE activity in hexane was similar to that in the aq. systems, however, the more polar org. solvents significantly decreased the enzyme activity. The microwell assay includes a procedure to oxidize insecticide parent compds. to their more inhibitory oxon forms. Inhibition profiles were detd. for each of the following compds.: aldicarb, carbaryl, carbofuran, chlorpyrifos,

chlorpyrifos-oxidized, chlorpyrifos-oxon, dichlorvos, eserine, methomyl, malathion, malaoxon, naled, neostigmine bromide, nicotine, paraoxon and pyridostigmine bromide. Log-logit or four parameter equations were applied to the data and IC50 (molar concn. yielding 50% inhibition) values were detd.

565. Rogers, Kim R. and Mishra, Nirankar N. (2000). **Highly sensitive assay for anticholinesterase compounds using 96 well plate format.** 40: 782-784 .

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566. Rogers, Kim R. and Mishra, Nirankar N. (2000). **Highly sensitive assay for anticholinesterase compounds using 96 well plate format.** 40: 782-784 .

Chem Codes: Chemical of Concern: CHLOR,MOM,CBF,ADC; Rejection Code: IN VITRO.
Rapid and sensitive detection of organophosphate insecticides using a 96 well plate format is reported. Several features of this assay make it attractive for development as a lab.-based or field screening assay. Acetylcholinesterase (AChE) from eel has been stabilized in a dry gel form for at least 120 days at room temp. The absorbance assay used to measure enzyme activity was evaluated using several solvent systems including water, phosphate buffer, hexane, methanol and ethanol. The AChE activity in hexane was similar to that in the aq. systems, however, the more polar org. solvents significantly decreased the enzyme activity. The microwell assay includes a procedure to oxidize insecticide parent compds. to their more inhibitory oxon forms. Inhibition profiles were detd. for each of the following compds.: aldicarb, carbaryl, carbofuran, chlorpyrifos, chlorpyrifos-oxidized, chlorpyrifos-oxon, dichlorvos, eserine, methomyl, malathion, malaoxon, naled, neostigmine bromide, nicotine, paraoxon and pyridostigmine bromide. Log-logit or four parameter equations were applied to the data and IC50 (molar concn. yielding 50% inhibition) values were detd.

567. Romero, P., Barnett, P. G., and Midtling, J. E. (89). **Congenital anomalies associated with maternal exposure to oxydemeton-methyl.** *Environ Res* 50 : 256-261.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Thirty-five workers became ill after they entered a cauliflower field contaminated with residues of three different insecticides, the organophosphates oxydemeton-methyl (Metasystox-R) and mevinphos (Phosdrin), and a carbamate, methomyl (Lannate). One crew member was pregnant with a 4-week-old fetus. At birth, the 3200-g female infant had multiple cardiac defects, bilateral optic nerve colobomas, microphthalmia of the left eye, cerebral and cerebellar atrophy, and facial anomalies. The cardiac defects included ventricular and atrial septal defects, stenosis of the pulmonary artery, and a patent ductus arteriosus. The child died at 14 days of age. There was no family history of birth defects, nor any maternal risk factor present, except that doxylamine (Bendectin) had been prescribed at 9 weeks fetal age. It is unlikely that doxylamine was responsible for the observed anomalies. Of the three chemicals involved, reproductive effects in test organisms have been observed onl
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Developmental Biology-Embryology-Pathological
KEYWORDS: Public Health: Environmental Health-Occupational Health
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control

KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Hominidae

568. Ross, J. H., Krieger, R. I., Dong, M. H., Thongsinthusak, T., and O'malley, M. (92). **Reentry: Establishing Safe Levels of Foliar Residues.** *In: 203rd ACS (Am.Chem.Soc.) Natl.Meet., Apr.5-10, 1992, San Francisco, CA, Abstr.Pap.Am.Chem.Soc.* 203: Agro 17.

Chem Codes: Chemical of Concern: MOM; Rejection Code: ABSTRACT/HUMAN HEALTH.

569. Ross, L. (94). **MASS LOADING OF PESTICIDES IN THE SAN JOAQUIN RIVER CALIFORNIA.** *207th National Meeting of the American Chemical Society, San Diego, California, Usa, March 13-17, 1994. Abstracts of Papers American Chemical Society* 207 : Agro 117.

Chem Codes: Chemical of Concern: MOM,CBF,ADC; Rejection Code: EFFLUENT.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM MEETING ABSTRACT SOIL SEASONS AGROCHEMISTRY USA
KEYWORDS: General Biology-Symposia
KEYWORDS: Ecology
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Soil Science-Physics and Chemistry (1970-)
KEYWORDS: Phytopathology-Disease Control
KEYWORDS: Pest Control

570. Ross, L. (94). **MASS LOADING OF PESTICIDES IN THE SAN JOAQUIN RIVER CALIFORNIA.** *207th National Meeting of the American Chemical Society, San Diego, California, Usa, March 13-17, 1994. Abstracts of Papers American Chemical Society* 207 : Agro 117.

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KEYWORDS: Soil Science-Physics and Chemistry (1970-)
KEYWORDS: Phytopathology-Disease Control
KEYWORDS: Pest Control

571. Rossi, M. and Rotilio, D. (97). **Analysis of carbamate pesticides by micellar electrokinetic chromatography.** *Hrc Journal of High Resolution Chromatography* 20 : 265-269.

Chem Codes: MOM,MLT,ADC,CBF; Rejection Code: METHODS.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Capillary electrophoresis (CE) was used for the qualitative and quantitative analysis of eleven compounds of the carbamate, thiocarbamate, and dithiocarbamate classes of pesticides. Micellar electrokinetic chromatography (MEKC) was employed for the separation of these substances. The analysis was performed using an uncoated fused silica column, in borate buffer containing SDS and 10% methanol at basic pH, and UV detection at 230 nm. The addition of methanol to the buffer increased the separation and affected intrinsic migration of analytes. The working standard solutions were prepared in acetonitrile/water 50:50. Although these compounds are structurally different, with a large spectrum of chemical properties, such as polarity and solubility, good separation and sensitivity were obtained. Moreover, good recovery of carbamates was obtained from tap-water using a styrene-divinylbenzene polymer column with the solid phase extraction (SPE) technique.
KEYWORDS: Biochemical Methods-General

KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Pest Control

572. Rossi, M. and Rotilio, D. (97). **Analysis of carbamate pesticides by micellar electrokinetic chromatography.** *Hrc Journal of High Resolution Chromatography* 20 : 265-269.

Chem Codes: Chemical of Concern: MOM,MLT,ADC,CBF; Rejection Code: METHODS.
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KEYWORDS: Biochemical Methods-General
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KEYWORDS: Pest Control

574. Rotenberg, M., Shefi, M., Dany, S., Dore, I., Tirosh, M., and Almog, S. (95). **Differentiation between organophosphate and carbamate poisoning.** *Clinica Chimica Acta* 234 : 11-21.

Chem Codes: Chemical of Concern: MOM,CBF,ADC; Rejection Code: IN VITRO.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. We propose a novel and simple assay for the real-time differentiation between carbamate and organophosphate inhibition of cholinesterase, based on our observations of the kinetic behavior of inhibited enzyme. The assay of carbamylated cholinesterase activity over time follows a non-linear kinetic pattern, whereas that of phosphorylated enzyme activity is linear. This feature can be exploited to differentiate between carbamate and organophosphate cholinesterase inhibition. The non-linear pattern characteristic of carbamates is easily discernible at degrees of inhibition of 40% or more. In this setting, cholinesterase activity ought to be measured continuously for about 1 h to obtain the kinetic pattern of enzyme activity. The initial activity, measured during the first 5 min of assay, represents the activity of enzyme in vivo. In vitro reactivation of inhibited cholinesterase allows the estimation of full potential activity of enzyme prior to poisoning, so that percentag

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KEYWORDS: Enzymes-Methods
KEYWORDS: Enzymes-Physiological Studies
KEYWORDS: Pathology
KEYWORDS: Pathology
KEYWORDS: Toxicology-General
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KEYWORDS: Enzymes-Methods
KEYWORDS: Enzymes-Physiological Studies
KEYWORDS: Pathology
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KEYWORDS: Toxicology-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control
KEYWORDS: Hominidae

576. Roush, R. T. and Wolfenbarger, D. A. (85). **Inheritance of methomyl resistance in the tobacco budworm (Lepidoptera: Noctuidae).** *Journal of economic entomology [j. Econ. Entomol.]* 78: 1020-1022.

Chem Codes: Chemical of Concern: MOM; Rejection Code: SURVEY.
Abstract: A methomyl-resistant strain of Heliothis virescens (F.) was collected from cotton in Mexico during 1981. After one generation of laboratory selection, this strain showed about 41,000- to 65,000-fold resistance, depending on the weight of the third instars tested. Larvae that weighed 12-21 mg were harder to kill than those weighing 22-29 mg at the doses tested. Resistance appears to be due to a single autosomal incompletely dominant gene.

577. Ruangyuttikarn, W., Phakdeewut, T., Sainumtan, W., and Sribanditmongkol, P. (2001Sep). **Children's plasma cholinesterase activity and fatal methomyl poisoning.** *J Med Assoc Thai 2001 Sep;84(9):1344-50.* 84: 1344-50.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: There is a case of a couple who intentionally killed their children with methomyl insecticide.

This was presented as our initial investigation of plasma cholinesterase (ChE) activity in Thai children. A hundred and five healthy Thai children 5-6 years of age, participated in the project. Their plasma was drawn to measure ChE activity. Mean +/- standard deviation of the children ChE was 7,417 +/- 1,620 U/L. The enzyme activity of the children was not significantly different between gender and parents' occupations. However, the mean of female ChE activity appeared to be lower than male ChE. Children whose parents were farmers appeared to have lower ChE activity than those whose parents were employees, merchants, government officers, unemployed parents, or private business owners. Two victims of child homicide were presented with ChE activity approximately 6 and 9 per cent of the average, considering healthy children. It was concluded that children's plasma ChE activity lower than 10 per cent of normal, could be a lethal indicator of anti-ChE insecticide poisoning.

578. Saad, M., Mrlina, G., and Calmon, J. P. (92). **Synthesis and in vitro anticholinesterase activity of a series of oxime methylcarbamates. Structure-activity relationships.** *Journal of agricultural and food chemistry [j. Agric. Food chem.]* 40: 1249-1256.

Chem Codes: Chemical of Concern: MOM; Rejection Code: IN VITRO.
Abstract: A series of 33 oxime N-methylcarbamates R sub(1)R sub(2)C=NOCONHCH sub(3) [R sub(1) and R sub(2) = H, alkyl, cycloalkyl, haloalkyl, substituted aryl, or groups like (CH sub(3)) sub(2)C=CH, CF sub(3)COCH sub(2)] was synthesized and tested for potential anticholinesterase activity. Some of those compounds such as the alpha , alpha , alpha -trifluoroacetophenoxime derivatives were studied for their in vitro and in vivo activity; other structures are novel ones. The configuration of those compounds was assigned by spectroscopic methods (NMR, IR, UV). The measure of the residual activity of the acetylcholinesterase (bovine erythrocyte) after the inhibition by those molecules allowed the determination of the dissociation constant K sub(d) and the bimolecular carbamoylation rate constant k sub(i). To take isomerism into account, the group R sub(2) is always cis to the carbamic moiety. The structure-activity relationship studies were performed with the usual structural parameters and included commercial compounds such as aldicarb, methomyl, and oxamyl.

579. Saad, M., Mrlina, G., and Calmon, J. P. (92). **Synthesis and in vitro anticholinesterase activity of a series of oxime methylcarbamates. Structure-activity relationships.** *Journal of agricultural and food chemistry [j. Agric. Food chem.]* 40: 1249-1256.

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580. Saadeh, A. M., Farsakh, N. A., and Al-Ali, M. K. (97). **Cardiac manifestations of acute carbamate and organophosphate poisoning.** *Heart (London)* 77 : 461-464.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Objective-To study the frequency, extent, and pathogenesis of the cardiac complications accompanying organophosphate and carbamate poisoning. Design-Retrospective study. Setting: A medical intensive care unit (NUCU) of a general hospital. Subjects: 46 adult patients admitted over a five year period with a diagnosis of organophosphate or carbamate poisoning. Results: Cardiac complications developed in 31 patients (67%). These were: non-cardiogenic pulmonary oedema, 20 (43%); cardiac arrhythmias, 11 (24%); electrocardiographic abnormalities including prolonged Q-Tc interval, 31 (67%); ST-T changes, 19 (41%); and conduction defects, 4 (9%). Sinus tachycardia occurred in 16 patients (35%) and sinus bradycardia in 13 (25%). Hypertension developed in 10 patients (22%) and hypotension in eight (17%). Eight patients (17%) needed respiratory support because of respiratory depression.

Although more than two thirds of the patients (67%) had a prolonged QTc interval, none had polym
KEYWORDS: Cardiovascular System-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Hominidae

581. Sabala, A., Portillo, J. L., Broto-Puig, F., and Comellas, L. (97). **Development of a new high-performance liquid chromatography method to analyse N-methylcarbamate insecticides by a simple post-column derivatization system and fluorescence detection.** *Journal of Chromatography a* 778 : 103-110.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: NO SPECIES, METHOD.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. A simple chromatographic method is proposed to analyse N-methylcarbamate insecticides by post-column derivatization and fluorescence detection. The new method performs the post-column reaction without the necessity of using any delivery pumps to introduce the reagents after the analytical column in the chromatographic system. The simplification is possible since the hydrolysis (at basic pH) and derivatization (with o-phthaldialdehyde and 2-mercaptoethanol) reagents are present in the mobile phase. Analytical columns (which tolerate basic conditions) and pH of the mobile phase were studied. Kromasil-100-C18 column and borate buffer were chosen. The length and the temperature of the tubular reactor were also optimized. Results of the validation study with the proposed chromatographic method are shown. The values demonstrated good performance of the complete system, including the post-column derivatization reaction. The column showed constant efficacy for more than 200 inj
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Pest Control

582. Sabala, A., Portillo, J. L., Broto-Puig, F., and Comellas, L. (97). **Development of a new high-performance liquid chromatography method to analyse N-methylcarbamate insecticides by a simple post-column derivatization system and fluorescence detection.** *Journal of Chromatography a* 778 : 103-110.

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KEYWORDS: Biochemical Methods-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Pest Control

583. Sabljic, A. (87). **ON THE PREDICTION OF SOIL SORPTION COEFFICIENTS OF ORGANIC POLLUTANTS FROM MOLECULAR STRUCTURE APPLICATION OF MOLECULAR TOPOLOGY MODEL.** *Environ Sci Technol* 21 : 358-366.

Chem Codes: Chemical of Concern: SZ,MOM; Rejection Code: FATE .
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM POLYCYCLIC AROMATIC HYDROCARBONS SOIL POLLUTION MODEL
KEYWORDS: Mathematical Biology and Statistical Methods
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-Molecular Properties and Macromolecules
KEYWORDS: Biophysics-Biocybernetics (1972-)
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air

KEYWORDS: Soil Science-Physics and Chemistry (1970-)

584. Sabourin, P. J. and Ryan, D. L. (97). **Metabolism of Methomyl by Lactating Goats and Laying Hens. 1. Material Balance Tissue Distribution and Metabolite Profiling.** *In: 213th Natl.Meet.of the Am.Chem.Soc., Apr.13-17, 1997, San Francisco, CA, Abstr.Pap.Am.Chem.Soc.* 213: Agro 87.

Chem Codes: Chemical of Concern: MOM; Rejection Code: ABSTRACT.

585. Sabourin, P. J. and Ryan, D. L. (97). **METABOLISM OF METHOMYL BY LACTATING GOATS AND LAYING HENS 1. MATERIAL BALANCE TISSUE DISTRIBUTION AND METABOLITE PROFILING.** *213th National Meeting of the American Chemical Society, San Francisco, California, Usa, April 13-17, 1997. Abstracts of Papers American Chemical Society* 213 : Agro 87.

Chem Codes: Chemical of Concern: MOM; Rejection Code: ABSTRACT.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM MEETING ABSTRACT GOAT CHICKEN LACTATING LAYING HEN METHOMYL HERBICIDE METABOLISM PESTICIDES METABOLIC PATHWAY CARBON-14 LABEL EXCRETA NMR TISSUES MILK EGGS MATERIAL BALANCE TISSUE DISTRIBUTION METABOLITE PROFILING RADIONUCLIDE METHOD EXCRETORY SYSTEM REPRODUCTIVE SYSTEM
KEYWORDS: General Biology-Symposia
KEYWORDS: Metabolism-General Metabolism
KEYWORDS: Toxicology-General
KEYWORDS: Pest Control
KEYWORDS: Galliformes
KEYWORDS: Bovidae

586. Salama, H. S., Matter, M., Zaki, F., and Salem, S. (91). **Field evaluation of Bacillus thuringiensis (L.) for control of Pieris rapae on two varieties of cabbage in Egypt.** *Discovery Innovation* 3 : 71-76.

Chem Codes: Chemical of Concern: MOM; Rejection Code: BIOLOGICAL TOXICANT.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. The potential effect of the microbial control agent Bacillus thuringiensis in suppressing the population of Pieris rapae on different varieties of cabbage at three governorates in Egypt has been evaluated. The commercial product Dipel 2X (B. thuringiensis var. kurstaki HD-1) when used as a dust, scored the best results in controlling P. rapae attacking the winter cabbage, Brassica oleracea var. brunswick. One or two spray applications of Dipel 2X at the rate of 200g/feddan, or 3 spray applications at one week intervals, at the rate of 100g/feddan provided satisfactory protection for the cabbage when infested with P. rapae. The yield of marketable heads from Dipel 2X-treated plots was equal to that harvested from plots treated with the chemical insecticides Lannate or Gardona.
KEYWORDS: Methods
KEYWORDS: Ecology
KEYWORDS: Ecology
KEYWORDS: Toxicology-General
KEYWORDS: Medical and Clinical Microbiology-Bacteriology
KEYWORDS: Plant Physiology
KEYWORDS: Horticulture-Vegetables
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Field
KEYWORDS: Economic Entomology-Biological Control
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Invertebrata
KEYWORDS: Bacillaceae (1979-)
KEYWORDS: Cruciferae
KEYWORDS: Lepidoptera

587. Salama, H. S., Zaki, F. N., Salem, S. A., and Foda, M. S. (99). **Utilization of Bacillus thuringiensis to control Spodoptera littoralis in Egyptian clover fields.** *Anzeiger Fuer Schaedlingskunde* 72 : 21-23.

Chem Codes: Chemical of Concern: MOM; Rejection Code: BIOLOGICAL TOXICANT.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. The efficacy of the commercial product Dipel 2X (Bacillus thuringiensis var. kurstaki), was assessed as a biological control means of the cotton leaf worm Spodoptera littoralis attacking clover cultivations (Trifolium alexandrinum) in Egypt. Field experiments using the biological agent were carried out in two localities as compared with the conventional chemical insecticide lannate. The percentage of reduction in the larval population increased at higher doses of B. t. and the infestation levels at 500 g/f. In Giza Governorate, the yield was slightly higher after a single treatment with B. t. at 500 g/f as compared with lannate.
KEYWORDS: Agronomy-General
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-General
KEYWORDS: Endospore-Forming Gram-Positives (1992-)
KEYWORDS: Leguminosae
KEYWORDS: Lepidoptera

588. Sample, B. E. and Arenal, C. A. (99). **Allometric Models for Interspecies Extrapolation of Wildlife Toxicity data.** *Bull.Environ.Contam.Toxicol.* 62: 653-663.

Chem Codes: EcoReference No.: 53836
Chemical of Concern: MOM; Rejection Code: METHODS.

589. Sances, F. V., Toscano, N. C., and Gaston, L. K. (92). **Minimization of pesticide residues on head lettuce: Within-head residue distribution of selected insecticides.** *J Econ Entomol* 85 : 202-207.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO TOX DATA.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Pesticide use was simulated to determine the amount and location of pesticide residues within lettuce heads at harvest and to determine whether wrapper leaf removal reduced head residues. Excessive application of insecticides adversely affected head weight and total yield, independent of the direct effects of pests. Highest residues resulted from excessively high field use and minimum preharvest intervals. Wrapper leaf removal resulted in a low or residue-free head across all materials studied.
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-Foods
KEYWORDS: Plant Physiology
KEYWORDS: Horticulture-Vegetables
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Compositae

590. Sanchez-Brunete, C., Rodriguez, A., and Tadeo, J. L. (2003Jul25). **Multiresidue analysis of carbamate pesticides in soil by sonication-assisted extraction in small columns and liquid chromatography.** *J Chromatogr a 2003 Jul 25;1007(1-2):85-91.* 1007: 85-91.

Chem Codes: MOM,ADC,CBF; Rejection Code: NO SPECIES.
ABSTRACT: A rapid multiresidue method has been developed for the analysis of carbamate insecticides (oxamyl, methomyl, propoxur, carbofuran, carbaryl and methiocarb) in soil. The method is based on the sonication-assisted extraction of soil samples placed in small columns using a low volume of methanol. Residue levels in soil were determined by reversed-phase high-performance liquid chromatography with fluorescence detection after post-column derivatisation. The separation of carbamates is performed on a C8 column with water-methanol as mobile phase. Recovery studies were carried out at 0.5, 0.1 and 0.01 microg/g fortification levels and average recoveries obtained for carbamates ranged from 82 to 99% with relative standard deviations between 0.4 and 10%. The effect of residue residence time and soil moisture content on the insecticide recovery was also studied. The method is linear over the range assayed, from 0.1 to 1 microg/ml. The detection limit for the carbamates varied from 1.6 to 3.7 microg/kg and the quantification limit obtained was 10 microg/kg. The emission and excitation allowed the confirmation of residues at levels around 0.1

microg/g.

591. Sanchez-Brunete, C., Rodriguez, A., and Tadeo, J. L. (2003Jul25). **Multiresidue analysis of carbamate pesticides in soil by sonication-assisted extraction in small columns and liquid chromatography.** *J Chromatogr a 2003 Jul 25;1007(1-2):85-91.* 1007: 85-91.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: NO SPECIES.
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592. Sanchez-Brunete, C., Rodriguez, A., and Tadeo, J. L. (2003Jul25). **Multiresidue analysis of carbamate pesticides in soil by sonication-assisted extraction in small columns and liquid chromatography.** *J Chromatogr a 2003 Jul 25;1007(1-2):85-91.* 1007: 85-91.

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593. Sasikumar, N., Clare, A. S., Gerhart, D. J., Stover, D., and Rittschof, D. (95). **Comparative Toxicities Of Selected Compounds To Nauplii Of Balanus Amphitrite Amphitrite Darwin And Artemia Sp.** 54: 289-296.

Chem Codes: Chemical of Concern: Cu; Rejection Code: MIXTURE.
ecology/ environmental biology-animal/ biochemical studies-general/ biochemical studies-minerals/ toxicology-environmental and industrial toxicology/ public health: environmental health-air, water and soil pollution/ pest control, general/ pesticides/ herbicides/ invertebrata, comparative and experimental morphology, physiology and pathology-arthropo/ branchiopoda/ cirripedia biosis copyright: biol abs. rrm research article balanus-amphitrite-amphitrite artemia-sp tri-n-butyl tin chloride copper chloride triton x 100 kathon 893t methomyl rhodium 5849 water pollution environmental contamination

594. Sasikumar, N., Clare, A. S., Gerhart, D. J., Stover, D., and Rittschof, D. (95). **Correction Of Previews 98147306. Comparative Toxicities Of Selected Compounds To Nauplii Of Balanus Amphitrite Amphitrite Darwin And Artemia Sp. Correction Of Keyword From Rhodium.** 54: 289-296.

Chem Codes: Chemical of Concern: Cu; Rejection Code: MIXTURE.
ecology/ environmental biology-animal/ biochemical studies-general/ biochemical studies-minerals/

toxicology-environmental and industrial toxicology/ public health: environmental health-air, water and soil pollution/ pest control, general/ pesticides/ herbicides/ invertebrata, comparative and experimental morphology, physiology and pathology-arthropo/ branchiopoda/ cirripedia biosis copyright: biol abs. rrm corrected record research article balanus-amphitrite-amphitrite artemia-sp tri-n-butyl tin chloride copper chloride triton x 100 kathon 893t methomyl rh 5849 water pollution environmental contamination

595. Sato, T., Taguchi, M., Nagase, H., Kito, H., and Niikawa, M. (98). **Augmentation of allergic reactions by several pesticides.** *Toxicology* 126 : 41-53.

Chem Codes: Chemical of Concern: SZ,PNB,MOM; Rejection Code: IN VITRO.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. The augmentative effects of several pesticides on histamine release from mast cells of rats that had been sensitized passively by anti-dinitrophenol (DNP) monoclonal IgE antibodies were investigated in vitro. Various pesticides, especially phenthoate (PAP), chlornitrofen (CNP) and paraquat (PQ), increased histamine release. This increase was not observed in histamine release with non-antigen or induction by calcium ionophore A23187 or compound 48/80. Passive cutaneous anaphylaxis (PCA) was examined, and an increase of PCA was observed with PAP and PQ, but not with CNP, while an increase of tumor necrosis factor-alpha (TNF-alpha) production was observed with CNP and PQ, but not PAP. These results suggest that various pesticides as environmental pollutants exacerbate allergic diseases.
KEYWORDS: Cytology and Cytochemistry-Animal
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biochemical Studies-Proteins
KEYWORDS: Biochemical Studies-Carbohydrates
KEYWORDS: Pathology
KEYWORDS: Blood
KEYWORDS: Blood
KEYWORDS: Endocrine System-General
KEYWORDS: Integumentary System-Pathology
KEYWORDS: Toxicology-General
KEYWORDS: Immunology and Immunochemistry-Immunopathology
KEYWORDS: Allergy
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Biological Control
KEYWORDS: Muridae

596. Savarie, P. J. and Bruggers, R. L. (99). **Candidate Repellents, Oral and Dermal Toxicants, and Fumigants for Brown Treesnake Control.** *In: G.H.Rodda, Y.Sawai, D.Chiszar, and H.Tanaka (Eds.), Problem Snake Management: The Habu and the Brown Treesnake, Cornell Univ.Press, Ithaca, NY* 417-422.

Chem Codes: EcoReference No.: 74375
Chemical of Concern: MOM,DZ; Rejection Code: REVIEW.

597. Sawyer, T. W., Weiss, M. T., and Dickinson, T. (96). **Effect of Metabolism on the Anticholinesterase Activity of Carbamate and Organophosphate Insecticides in Neuron Culture.** *In Vitro Toxicol.* 9: 343-352.

Chem Codes: Chemical of Concern:
ADC,TBC,CBL,MOM,ABT,PRN,ACP,PRT,PPHD,FNF,DZ,ETN,FNTH,TCF,AZ,PHSL,MLN,MP,Naled,DMT,DS,CPY; Rejection Code: IN VITRO.

598. Sawyer, T. W., Weiss, M. T., and Dickinson, T. (96). **Effect of Metabolism on the Anticholinesterase Activity of Carbamate and Organophosphate Insecticides in Neuron Culture.** *In Vitro Toxicol.* 9: 343-352.

Chem Codes: Chemical of Concern:
ADC,TBC,CBL,MOM,ABT,PRN,ACP,PRT,PPHD,FNF,DZ,ETN,FNTH,TCF,AZ,PHSL,MLN,MP,Naled,D

MT,DS,CPY; Rejection Code: IN VITRO.

599. Schattenberg, H. J Iii, Geno, P. W., Hsu, J. P., Fry, W. G., and Parker, R. P. (96). **Effect of household preparation on levels of pesticide residues in produce.** *Journal of Aoac International* 79 : 1447-1453.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. In 1993, the National Academy of Sciences released a report on the effects of pesticides in the diets of infants and children, indicating that current tolerances do not take into account the eating habits and metabolism of young children. In response to that report, a study was undertaken to determine pesticide residues in raw agricultural commodities at levels below the tolerances established by the Environmental Protection Agency. The objective of the study was to determine whether normal household washing, peeling, and cooking procedures had any effect on pesticide residue levels. Low levels of pesticide residues were detected in 97 (40%) of the 243 samples analyzed. The number of samples containing detectable residues dropped to 47 (19%) after household preparation. Results indicate that residue levels in most commodities are substantially reduced after household preparation.
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Food Technology-General
KEYWORDS: Food Technology-Fruits
KEYWORDS: Food Technology-Evaluations of Physical and Chemical Properties (1970-)
KEYWORDS: Toxicology-Foods

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KEYWORDS: Biochemical Studies-General
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KEYWORDS: Food Technology-General
KEYWORDS: Food Technology-Fruits
KEYWORDS: Food Technology-Evaluations of Physical and Chemical Properties (1970-)
KEYWORDS: Toxicology-Foods

601. Schattenberg, H. J Iii and Hsu, J. P. (92). **Pesticide residue survey of produce from 1989 to 1991.** *J Aoac (Assoc Off Anal Chem) Int* 75 : 925-933.

Chem Codes: Chemical of Concern: PNB,MTL,MOM,CBF,ADC; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. A pesticide residue screening program for 111 pesticides was performed on 6970 produce samples. Of the 81 varieties of samples, 2.4% contained illegal levels of pesticide residues (that is, higher than U.S. Environmental Protection Agency (EPA) tolerance or no tolerance specified), and 13.3% contained levels within tolerable limits established by EPA. Pesticide results are presented both by commodity and category type. The nature of violative residues is discussed.
KEYWORDS: General Biology-Institutions
KEYWORDS: Food Technology-Fruits
KEYWORDS: Food Technology-Evaluations of Physical and Chemical Properties (1970-)
KEYWORDS: Toxicology-Foods
KEYWORDS: Pest Control

602. Schattenberg, H. J Iii and Hsu, J. P. (92). **Pesticide residue survey of produce from 1989 to 1991.** *J Aoac (Assoc Off Anal Chem) Int* 75 : 925-933.

Chem Codes: Chemical of Concern: PNB,MTL,MOM,CBF,ADC; Rejection Code: HUMAN HEALTH.
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KEYWORDS: General Biology-Institutions
KEYWORDS: Food Technology-Fruits
KEYWORDS: Food Technology-Evaluations of Physical and Chemical Properties (1970-)
KEYWORDS: Toxicology-Foods
KEYWORDS: Pest Control

603. Seiber, J. N. and Woodrow, J. E. (95). **ORIGIN AND FATE OF PESTICIDES IN AIR.** *Ragsdale, N. N., P. C. Kearney and J. R. Plimmer (Ed.). Acs Conference Proceedings Series: Eighth International Congress of Pesticide Options 2000* Conference, Washington, D.c., Usa, July 4-9, 1994. American Chemical Society: Washington, Dc, Usa. Isbn 0-8412-2995-3.; 0 : 157-172.

Chem Codes: Chemical of Concern: PNB,MOM,CBF,ADC; Rejection Code: FATE.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER MEETING PAPER METHYL BROMIDE VOLATILIZATION REGULATIONS
KEYWORDS: General Biology-Institutions
KEYWORDS: Ecology
KEYWORDS: Biochemistry-Gases (1970-)
KEYWORDS: Biochemical Studies-General
KEYWORDS: Metabolism-General Metabolism
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health-Public Health Administration and Statistics
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control
KEYWORDS: Plantae-Unspecified
KEYWORDS: Hominidae

604. Seiber, J. N. and Woodrow, J. E. (95). **ORIGIN AND FATE OF PESTICIDES IN AIR.** *Ragsdale, N. N., P. C. Kearney and J. R. Plimmer (Ed.). Acs Conference Proceedings Series: Eighth International Congress of Pesticide Options 2000* Conference, Washington, D.c., Usa, July 4-9, 1994. American Chemical Society: Washington, Dc, Usa. Isbn 0-8412-2995-3.; 0 : 157-172.

Chem Codes: Chemical of Concern: PNB,MOM,CBF,ADC; Rejection Code: FATE.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER MEETING PAPER METHYL BROMIDE VOLATILIZATION REGULATIONS
KEYWORDS: General Biology-Institutions
KEYWORDS: Ecology
KEYWORDS: Biochemistry-Gases (1970-)
KEYWORDS: Biochemical Studies-General
KEYWORDS: Metabolism-General Metabolism
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health-Public Health Administration and Statistics
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control
KEYWORDS: Plantae-Unspecified
KEYWORDS: Hominidae

605. Semtner, P. J. and Wilkinson, W. B Iii (94). **TOBACCO HORNWORM AND TOBACCO BUDWORM**

CONTROL ON TOBACCO WITH BACILLUS THURINGIENSIS 1993. *Burditt, A. K. Jr. (Ed.). Arthropod Management Tests, Vol. 19. Iii+403p. Entomological Society of America: Lanham, Maryland, Usa.* 0 : 284.

Chem Codes: Chemical of Concern: MOM; Rejection Code: BIOLOGICAL TOXICANT.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER BACILLUS-THURINGIENSIS NICOTIANA-TABACUM HELIOTHIS-VIRESCENS MANDUCA-SEXTA LARVA INSECTICIDE AGREE 50WP DIPEL 2X DIPEL 10G ORTHENE 75SP M-PERIL LANNATE 1.8L PRECIPITATION VIRGINIA USA
KEYWORDS: Ecology
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-General
KEYWORDS: Developmental Biology-Embryology-Morphogenesis
KEYWORDS: Physiology and Biochemistry of Bacteria
KEYWORDS: Agronomy-Tobacco Crops
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Field
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Invertebrata
KEYWORDS: Endospore-Forming Gram-Positives (1992-)
KEYWORDS: Solanaceae
KEYWORDS: Lepidoptera

606. Sengonca, C. and Liu, B. (2003). **Effect of GCSC-BtA Biocide on Abundance and Diversity of Some Cabbage Pests as well as Their Natural Enemies in Southeastern China.** *Z.Pflanzenkr.Planzenschutz* 110: 484-491.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO CONC.

607. Sever, L. E. (94). **CONGENITAL MALFORMATIONS RELATED TO OCCUPATIONAL REPRODUCTIVE HAZARDS.** *Occupational Medicine (Philadelphia)* 9 : 471-494.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM LITERATURE REVIEW HUMAN MATERNAL EXPOSURE CONCEPTUS EXPOSURE PATERNAL EXPOSURE
KEYWORDS: Biochemical Studies-General
KEYWORDS: Pathology
KEYWORDS: Reproductive System-Pathology
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Developmental Biology-Embryology-Descriptive Teratology and Teratogenesis
KEYWORDS: Public Health: Environmental Health-Occupational Health
KEYWORDS: Hominidae

608. Sever, L. E., Arbuckle, T. E., and Sweeney, A. (97). **REPRODUCTIVE AND DEVELOPMENTAL EFFECTS OF OCCUPATIONAL PESTICIDE EXPOSURE THE EPIDEMIOLOGIC EVIDENCE.** *Occupational Medicine (Philadelphia)* 12 : 305-325.

Chem Codes: Chemical of Concern: MOM,CBF,ADC; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM LITERATURE REVIEW HUMAN FETUS FATHER EMBRYO MOTHER OCCUPATIONAL HEALTH PESTICIDES TOXICOLOGY EPIDEMIOLOGY PESTICIDE EXPOSURE EPA REPRODUCTIVE DISEASE SPONTANEOUS ABORTION FETAL DEATH AGENT ORANGE TOXIN CARCINOGEN PESTICIDE TERATOGEN DEVELOPMENT REPRODUCTION PATERNAL OCCUPATIONAL ECOLOGICAL MATERNAL EXPOSURE ASSESSMENT ENVIRONMENTAL EMBYRONIC TOXICITY REPRODUCTIVE SYSTEM DISEASE-MALE REPRODUCTIVE SYSTEM DISEASE-FEMALE
KEYWORDS: Toxicology-Environmental and Industrial Toxicology

KEYWORDS: Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis
KEYWORDS: Developmental Biology-Embryology-Descriptive Teratology and Teratogenesis
KEYWORDS: Public Health: Environmental Health-Occupational Health
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Public Health: Epidemiology-Miscellaneous
KEYWORDS: Pest Control
KEYWORDS: Hominidae

609. Sever, L. E., Arbuckle, T. E., and Sweeney, A. (97). **REPRODUCTIVE AND DEVELOPMENTAL EFFECTS OF OCCUPATIONAL PESTICIDE EXPOSURE THE EPIDEMIOLOGIC EVIDENCE.** *Occupational Medicine (Philadelphia)* 12 : 305-325.

Chem Codes: Chemical of Concern: MOM,CBF,ADC; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM LITERATURE REVIEW HUMAN FETUS FATHER EMBRYO MOTHER OCCUPATIONAL HEALTH PESTICIDES TOXICOLOGY EPIDEMIOLOGY PESTICIDE EXPOSURE EPA REPRODUCTIVE DISEASE SPONTANEOUS ABORTION FETAL DEATH AGENT ORANGE TOXIN CARCINOGEN PESTICIDE TERATOGEN DEVELOPMENT REPRODUCTION PATERNAL OCCUPATIONAL ECOLOGICAL MATERNAL EXPOSURE ASSESSMENT ENVIRONMENTAL EMBYRONIC TOXICITY REPRODUCTIVE SYSTEM DISEASE-MALE REPRODUCTIVE SYSTEM DISEASE-FEMALE
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis
KEYWORDS: Developmental Biology-Embryology-Descriptive Teratology and Teratogenesis
KEYWORDS: Public Health: Environmental Health-Occupational Health
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Public Health: Epidemiology-Miscellaneous
KEYWORDS: Pest Control
KEYWORDS: Hominidae

610. Shaker, Nader, Abdel-Ghany, M., and El-Shoura, M. (**Interaction of pesticides with three biochemical targets [enzymes] of earthworm.** 7: 483-500 CODEN: ALSEEF.

Chem Codes: CHLOR; Rejection Code: IN VITRO.
Acetylcholinesterase of earthworm (Lumbricus terrestris) homogenates was inhibited by aldicarb, thiodicarb, methomyl, oxamyl, mexacarbate, carbofuran (I), chlorpyrifos, 2,4-DFP, and endosulfan. ATPase and alk. phosphatase of the homogenates were not affected by the pesticides. The degree of acetylcholinesterase inhibition was pos. correlated with the pesticide toxicity to earthworms.

611. Shaker, Nader, Abdel-Ghany, M., and El-Shoura, M. (**Interaction of pesticides with three biochemical targets [enzymes] of earthworm.** 7: 483-500 CODEN: ALSEEF.

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613. Sharma, R. P. and Reddy, R. V. (87). **TOXIC EFFECTS OF CHEMICALS ON THE IMMUNE SYSTEM.** *Haley, T. J. And W. O. Berndt (Ed.). Handbook of Toxicology. Hemisphere Publishing Corp.: New York, New York, Usa* Cambridge, Uk. Illus. Isbn 0-89116-403-0.; 0 : 555-591.

Chem Codes: Chemical of Concern: PNB,MOM,CBF,ADC; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM PESTICIDE METAL TOXICITY DRUG IMMUNOTOXICITY
KEYWORDS: Cytology and Cytochemistry-Human
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biochemical Studies-Minerals
KEYWORDS: Metabolism-Minerals
KEYWORDS: Blood
KEYWORDS: Blood
KEYWORDS: Pharmacology-Drug Metabolism
KEYWORDS: Toxicology-General
KEYWORDS: Toxicology-Pharmacological Toxicology (1972-)
KEYWORDS: Immunology and Immunochemistry-Immunopathology
KEYWORDS: Pest Control

614. Sharma, R. P. and Reddy, R. V. (87). **TOXIC EFFECTS OF CHEMICALS ON THE IMMUNE SYSTEM.** *Haley, T. J. And W. O. Berndt (Ed.). Handbook of Toxicology. Hemisphere Publishing Corp.: New York, New York, Usa* Cambridge, Uk. Illus. Isbn 0-89116-403-0.; 0 : 555-591.

Chem Codes: Chemical of Concern: PNB,MOM,CBF,ADC; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM PESTICIDE METAL TOXICITY DRUG IMMUNOTOXICITY
KEYWORDS: Cytology and Cytochemistry-Human
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biochemical Studies-Minerals
KEYWORDS: Metabolism-Minerals
KEYWORDS: Blood
KEYWORDS: Blood
KEYWORDS: Pharmacology-Drug Metabolism
KEYWORDS: Toxicology-General
KEYWORDS: Toxicology-Pharmacological Toxicology (1972-)
KEYWORDS: Immunology and Immunochemistry-Immunopathology
KEYWORDS: Pest Control

615. Shelton, A. M., Wyman, J. A., Cushing, N. L., Apfelbeck, K., Dennehy, T. J., Mahr, S. E. R., and Eigenbrode, S. D. (93). **Insecticide resistance of diamondback moth (Lepidoptera: Plutellidae) in North America.** *Journal of economic entomology [j. Econ. Entomol.]* 86: 11-19.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO TOX DATA.
Abstract: Following widespread reports of control failures of the diamondback moth, Plutella xylostella (L.), in North America during 1987, a cooperative project was established in 1988-1989 in which 41 populations from 19 states within the United States, Mexico, Canada, and Belize were evaluated for resistance to three commonly used insecticides representing three major classes of insecticides (pyrethroids, carbamates, and organophosphates). The extent and geographic distribution of resistance to methomyl, permethrin, and methamidophos in North American populations was determined as a first step in developing resistance management strategies. Widespread resistance was confirmed to all three insecticides. Resistance was generally highest in populations that originated from the southern states (Texas, Florida, Georgia, and North Carolina), but scattered populations with high levels of resistance also were detected in northern states (New York, New Hampshire, New Jersey, Ohio, Indiana, Michigan, and Wisconsin).

616. Sherma, J. (91). **PESTICIDES.** *Anal Chem* 63 : 118r-130r.

Chem Codes: Chemical of Concern: SZ,PNB,MTL,MOM,ADC,CBF; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM REVIEW INSECTICIDE HERBICIDE FUNGICIDE SUPERCRITICAL FLUID CHROMATOGRAPHY MASS SPECTROSCOPY GAS CHROMATOGRAPHY HIGH PERFORMANCE LIQUID CHROMATOGRAPHY THIN LAYER CHROMATOGRAPHY
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Agronomy-Weed Control
KEYWORDS: Phytopathology-General and Miscellaneous
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control

617. Sherma, J. (91). **PESTICIDES.** *Anal Chem* 63 : 118r-130r.

Chem Codes: Chemical of Concern: SZ,PNB,MTL,MOM,ADC,CBF; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM REVIEW INSECTICIDE HERBICIDE FUNGICIDE SUPERCRITICAL FLUID CHROMATOGRAPHY MASS SPECTROSCOPY GAS CHROMATOGRAPHY HIGH PERFORMANCE LIQUID CHROMATOGRAPHY THIN LAYER CHROMATOGRAPHY
KEYWORDS: Biochemical Methods-General
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KEYWORDS: Agronomy-Weed Control
KEYWORDS: Phytopathology-General and Miscellaneous
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control

618. Sherma, J. (92). **PESTICIDES.** *Heftmann, E. (Ed.). Journal of Chromatography Library, Vol. 51b. Chromatography, 5th Edition: Fundamentals and Applications of Chromatography and Related Differential Migration Methods, Part B. Applications. Xxxii+630p. Elsevier Science Publishers B.v.: Amsterdam, Netherlands* New York, New York, Usa. Isbn 0-444-88237-5.; 0 : B513-B553.

Chem Codes: Chemical of Concern: SZ,MTL,MOM,ADC,CBF; Rejection Code: CHEM METHOD.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM HERBICIDE FUNGICIDE INSECTICIDE FUMIGANT RODENTICIDE GAS CHROMATOGRAPHY HIGH PERFORMANCE LIQUID CHROMATOGRAPHY ANALYTICAL METHOD
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Phytopathology-Disease Control
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control

619. Sherma, J. (92). **PESTICIDES.** *Heftmann, E. (Ed.). Journal of Chromatography Library, Vol. 51b. Chromatography, 5th Edition: Fundamentals and Applications of Chromatography and Related Differential Migration Methods, Part B. Applications. Xxxii+630p. Elsevier Science Publishers B.v.: Amsterdam, Netherlands* New York, New York, Usa. Isbn 0-444-88237-5.; 0 : B513-B553.

Chem Codes: Chemical of Concern: SZ,MTL,MOM,ADC,CBF; Rejection Code: CHEM METHOD.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM HERBICIDE FUNGICIDE INSECTICIDE FUMIGANT RODENTICIDE GAS CHROMATOGRAPHY HIGH PERFORMANCE LIQUID CHROMATOGRAPHY ANALYTICAL METHOD
KEYWORDS: Biochemical Methods-General
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KEYWORDS: Biophysics-General Biophysical Techniques

KEYWORDS: Phytopathology-Disease Control
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control

620. Shi Ming-an, Yuan Jian-zhong, Wu, J. u. n., Zhuang Pei-jun, and Tang Zhen-hua (2001). **Studies on the kinetics of acetylcholinesterase in the resistant and susceptible strains of housefly (Musca domestica).** *Entomologica sinica [entomol. Sinica]. Vol. 8, no. 1, pp. 30-38. Mar 2001.*

Chem Codes: Chemical of Concern: MOM; Rejection Code: MODEL.
Abstract: Acetylcholinesterase (AChE) in the susceptible (S) and the resistant (R) strains of housefly (Musca domestica) was investigated using kinetic analysis. The V sub(max) values of AChE for hydrolyzing acetylthiocholine (ATCh) and butyrylthiocholine (BTCh) were 4578.50 and 1716.08nmol/min/mg times protein in the R strain, and were 1884.75 and 864.72 nmol/min/mg times protein in the S strain, respectively. The V sub(max) ratios of R to S enzyme were 2.43 for ATCh and 1.98 for BTCh. The K sub(m) values of AChE for ATCh and BTCh were 0.069 and 0.034 mmol/L in the S strain, and 0.156, 0.059 mmol/L in the R strain, respectively. The K sub(m) ratios of R to S enzyme were 2.26 for ATCh and 1.74 for BTCh. The k sub(i) ratios of S to R enzyme for three insecticides propoxur, methomyl and paraoxon were 46.04, 4.17 and 2.86, respectively. In addition, k sub(cat) and k sub(cat)/K sub(m) for measuring turnover and catalytic efficiency of AChE were determined using eserine as titrant. The k sub(cat) values of AChE from the R strain for both ATCh and BTCh were higher than those values from the S strain. But the values of k sub(cat)/K sub(m) were in contrary to the k sub(cat) values with R enzyme compared to S enzyme. The AChE catalytic properties and sensitivity to the inhibition by three insecticides in the R and S strains of housefly were discussed based on contribution of V sub(max), K sub(m), k sub(i), k sub(cat) and k sub(cat)/K sub(m). All these data implied that AChE from the R strain might be qualitatively altered. We also observed an intriguing phenomenon that inhibitors could enhance the activity of AChE from the resistant strain. This "flight reaction" of the powerful enzyme might be correlated with the developing resistance of housefly to organophosphate or carbamate insecticides.

621. Shuit Hung Ho and Sudderruddin, K. I. (76). **An in vitro study of the non-specific esterases of the melon fly, Dacus cucurbitae Coq. and their reactions with organophosphate and carbamate compounds.** *Comparative Biochemistry and Physiology Part C: Comparative Pharmacology* 54: 95-97.

Chem Codes: Chemical of Concern: MOM; Rejection Code: IN VITRO.
1. The non-specific head and body esterases of the melon fly, Dacus cucurbitae Coq. were studied using 1-napthyl acetate as the substrate and eserine, malathion and methomyl as the inhibitors.2. The esterases were very susceptible to in vitro inhibition by eserine and particularly by methomyl.3. Differences in esterase inhibition patterns between D. cucurbitae, D. dorsalis and houseflies are outlined and discussed.

622. Siedow, James N., Rhoads, David M., Ward, Gerty C., and Levings, III Charles S. (95). **The relationship between the mitochondrial gene T-urf 13 and fungal pathotoxin sensitivity in maize.** *Biochimica et Biophysica Acta (BBA) - Molecular Basis of Disease* 1271: 235-240.

Chem Codes: Chemical of Concern: MOM; Rejection Code: IN VITRO.
Mitochondria isolated from maize containing cms-T cytoplasm are specifically sensitive to pathotoxins (T-toxins) produced by the fungi Bipolaris maydis race T and Phyllosticta maydis. T-toxins interact with a 13 kDa membrane-bound toxin receptor protein, URF13, to produce hydrophillic pores in the membrane. Expression of URF13 in Escherichia coli produces bacterial cells that form hydrophillic pores in the plasma membrane when exposed to T-toxin or methomyl. Topological studies have established that URF13 contains three membrane-spanning [alpha]-helices, two of which are amphipathic and may contribute to pore formation. URF13 specifically binds T-toxin in a cooperative manner. Oligonucleotide-directed mutagenesis of URF13 led to the isolation of methomyl/T-toxin-resistant mutations at 39 separate positions throughout the URF13 primary sequence. Chemical cross-linking of URF13 demonstrated the presence of URF13 oligomers and established that the pore-forming species is oligomeric. The ability of the carboxylate-specific reagent, dicyclohexycarbodiimide to cross-link URF13 has been used in conjunction with site-directed mutagenesis to establish that the URF13 tetramer has a central core consisting of a four-[alpha]-helical bundle that may undergo a conformational change after T-toxin or methomyl binding. Experimental evidence indicates that

URF13 acts as a ligand-gated, pore-forming T-toxin receptor.

623. Simmon, V. F., Poole, D. C., and Newell, G. W. (**In vitro mutagenic studies of twenty pesticides.**

Chem Codes: Chemical of Concern: CHLOR; Rejection Code: IN VITRO, BACTERIA.
PESTAB. As part of the Environmental Protection Agency's substiute pesticide program, extensive mutagenic studies are being conducted on many pesticides. In the current study, 20 pesticides were evaluated for their mutagenic potential in four microbial assay systems. The 20 pesticides, tested are folpet, captan, methyl parathion, parathion, malathion, bromacil, guthion, azodrin, pentachloronitrobenzene (PCNB), phorate, dinoseb, dursban (chlorpyrifos), monuron, monosodium methanearsonate (MSMA), disodium methane arsonate (DMSA), cacodylic acid, fenthion, trifluralin, methomyl, and simazine. The microbial assay systems used are the histidine reverse mutation system in five strains of Salmonella typhimurium, an assay of mitotic recombination in a diploid strain of Saccharomyces cerevisiae, and relative toxicity assays in Escherichia coli and Bacillus subtilis. A mammalian metabolic activation system using the liver of rats which had been treated with Arochlor 1254 was used in all of the assays except the B. subtilis assay. Folpet, captan, and bromacil were mutagenic in all of the assays. Azodrin, cacodylic acid, and guthion increased mitotic recombination in S. cerevisiae. Dursban and dinoseb were more toxic in repair deficient strains of B. subtilis and B. coli than in repair proficient strains of these organisms. (Author abstract by permission, abstract no. 42)

624. Simon, V. A., Pearson, K. S., and Taylor, A. (93). **Determination of N-methylcarbamates and N-methylcarbamoyloximes in water by high performance liquid chromatography with the use of fluorescence detection and a single O-phthalaldehyde post-column reaction.** *J Chromatogr* 643 : 317-320.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: METHODS.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. A single-stage post-column fluorescence HPLC method for the analysis of N-methylcarbamates and N-methylcarbamoyloximes is presented as an alternative to the traditional two-stage method. The two-stage technique involves post-column hydrolysis with sodium hydroxide followed by derivatization with o-phthalaldehyde and beta-mercaptoethanol in a borate buffer. In the proposed method only one reagent, consisting of sodium hydroxide, o-phthalaldehyde, and N,N-dimethyl-2-mercaptoethylamine hydrochlorid (Thiofluor), is used. The stability of the reagent is compared to single-stage alternatives involving beta-mercaptoethanol or 3-mercaptopropionic acid, which have been previously reported. It is reported that Thiofluor provides the best stability and is satisfactory for overnight chromatographic runs. The sensitivity of the method is reported to be equal to that of the two-stage method. This innovation simplifies reagent preparation and equipment maintenance, while shortening sta
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
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KEYWORDS: Public Health: Environmental Health-Air

625. Simon, V. A., Pearson, K. S., and Taylor, A. (93). **Determination of N-methylcarbamates and N-methylcarbamoyloximes in water by high performance liquid chromatography with the use of fluorescence detection and a single O-phthalaldehyde post-column reaction.** *J Chromatogr* 643 : 317-320.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: METHODS.
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KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air

626. Simonsen, L. and Lund, S. P. (92). **A strategy for delineating risks due to exposure to neurotoxic chemicals.** *Am J Ind Med* 21 : 773-792.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. A method for delineating the risks due to exposure to neurotoxic chemicals based upon the linkage of four national computer-based registers is described. The four registers are: the Danish Product Register database, PROBAS: Register of air pollution measurements in Danish workplaces, ATABAS; Register of notified occupational diseases; and Register of work force. Based on the information from the four registers, risk profiles for neurotoxic chemicals in 69 industrial groups were generated. The ri profiles describe the number of neurotoxic chemicals, their potency, the number of exposure measurements exceeding the occupational exposure limit (OEL), and the total and relative number of diseases caused by the chemicals in each group. Based on this linkage, twelve industries are noted to be potentially at high risk due to exposure to neurotoxic chemicals; therein, 18 chemicals are identified as "risk chemicals," primarily used in 8 main groups of products. The goal of the eva
KEYWORDS: General Biology-Institutions
KEYWORDS: General Biology-Information
KEYWORDS: Biochemical Studies-General
KEYWORDS: Nervous System-Pathology
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Occupational Health
KEYWORDS: Hominidae

627. Simpson, G. R. (**Blood Cholinesterase Survey. Blood Cholinesterase Levels Of Persons Exposed To Organic Phosphate Pesticides In The Agricultural Field.** Rejection Code: HUMAN HEALTH.
pestab. a widespread blood cholinesterase survey was conducted during the 1974 spraying season to assess the overall exposure situation among agricultural workers in the field. the primary areas surveyed were wee waa and trangie. of 952 persons studied, 5 were seriously affected with blood cholinesterase levels below 40% of normal. a further 16 persons had blood cholinesterase levels below 60% of normal. in general, these persons were associated with aerial spraying operations in cotton fields. it was noted that the people were not using proper protective clothing during the handling of the toxic chemicals. market gardeners also showed some group evidence of lowered cholinesterase levels. the pesticides used in cotton spraying included chlorcam-ddt, endrin-ddt, monocrotophos, and parathion. the most popular pesticide used in orcharding was azinphos plus some light applications of methidothion, vamidothion, and leptophos. tobacco growers used parathion, azinphos, methomyl, and aminocarb, plus some methyl demeton. terracur and nemacur were used in soil treatment. diazinon was the main chemical used for fly control in grazing. fenthion-ethyl was also used. tomato growers used terracur and nemacur, methyl demeton, parathion, methomyl and mevinphos. this data indicates that in the areas of market gardening and aerial field spraying, adequate protective measures are not being observed. ai: yes db: tox sf: pestab

628. Simpson, G. R. and Bermingham, S. (1977Jul30). **Poisoning by carbamate pesticides.** *Med J Aust 1977 Jul 30;2(5):148-9.* 2: 148-9.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: In recent years the number of carbamate pesticides registered for use in New South Wales has increased. Some of the newer carbamates are very toxic and have cholinergic properties similar to those of the organic phosphates, though the effect is of much shorter duration. Because of this, separate tests for plasma and red blood cell levels of cholinesterase should be conducted as soon as possible after exposure in order to obtain meaningful results. A typical case of carbamate poisoning is described in which both plasma and red blood cell cholinesterase values were lowered. The substitution of a liquid pesticide formulation for the original powder

formulation has reduced the operator inhalation hazard in the case of methomyl.

629. Singh, P. Da and West, M. E. (85). **ACUTE PESTICIDE POISONING IN THE CARIBBEAN.** *West Indian Med J* 34 : 75-83.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM HUMAN TOXICOLOGY
KEYWORDS: Toxicology-General
KEYWORDS: Public Health: Epidemiology-Organic Diseases and Neoplasms
KEYWORDS: Pest Control
KEYWORDS: Hominidae

630. Singh, P. Da and West, M. E. (85). **ACUTE PESTICIDE POISONING IN THE CARIBBEAN.** *West Indian Med J* 34 : 75-83.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM HUMAN TOXICOLOGY
KEYWORDS: Toxicology-General
KEYWORDS: Public Health: Epidemiology-Organic Diseases and Neoplasms
KEYWORDS: Pest Control
KEYWORDS: Hominidae

631. Sinhaseni, P., Foongvidya, S., and Tayaputch, N. (95). **Exposure evaluation is a crucial step for quantitative risk assessment of methomyl.** *Arhiv za higijenu rada i toksikologiju/archives of industrial hygiene and toxicology [arh. Hig. Rada toksikol./Arch. Ind. Hyg. Toxicol.]* 46: 301-306.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
Abstract: Methomyl, methyl N-[[(methylamino) carbonyl]oxy]ethanimidothioate is a carbamate insecticide with anticholinesterase activity. As a broad spectrum insecticide, it is one of the most frequently used pesticides in tangerine orchards in Thailand. Although methomyl is said to be rapidly eliminated from experimental animals high incidence of acute poisonings was reported among patients occupationally exposed to a powder formulation of methomyl. In this passive dosimetry study of tangerine growers, during mixing and overhead spraying of a 90% powder formulation of methomyl, ocular and nasal exposure was measured. Exposure data are discussed in terms of the "potentially absorbed" or "internal dose".

632. Skladal, P. , Nunes, G. S., Yamanaka, H., and Ribeiro, M. L. (97). **Detection of carbamate pesticides in vegetable samples using cholinesterase-based biosensors.** *Electroanalysis* 9 : 1083-1087.

Chem Codes: MOM,CBF,ADC; Rejection Code: METHODS, NO TOX DATA.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Biosensors for determination of carbamates in vegetables based on five different cholinesterases as biorecognition elements and a screen-printed electrode system as an amperometric transducer were developed. Measurements were simply performed by dropping solutions (either sample or substrate) directly on the biosensor. The response of biosensors to selected carbamates (aldicarb, carbaryl, carbofuran, methomyl and propoxur) was characterized. The performance was evaluated on extracts of potatoes and carrots, the results from the AChE biosensor and a standard HPLC procedure were compared. Finally, the biosensor was used for the direct analysis of vegetable juices without any pretreatment steps. In this case, 10 mug levels of added carbofuran and propoxur were reliably identified. The whole procedure takes less than 20 min including 10 min incubation with samples. The concentrations of carbamates determined with biosensor agreed well for carbofuran. Lower response was obse
KEYWORDS: Biochemical Methods-General
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633. Skladal, P. , Nunes, G. S., Yamanaka, H., and Ribeiro, M. L. (97). **Detection of carbamate pesticides in vegetable samples using cholinesterase-based biosensors.** *Electroanalysis* 9 : 1083-1087.

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635. Slobodnik, J., Oztezkizan, O., Lingeman, H., and Brinkman, U. At (96). **Solid-phase extraction of polar pesticides from environmental water samples on graphitized carbon and Empore-activated carbon disks and on-line coupling to octadecyl-bonded silica analytical columns.** *Journal of Chromatography a* 750 : 227-238.

Chem Codes: Chemical of Concern: MOM,ADC; Rejection Code: CHEM METHOD.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. The suitability of Empore-activated carbon disks (EACD), Envi-Carb graphitized carbon black (GCB) and CPP-50 graphitized carbon for the trace enrichment of polar pesticides from water samples was studied by means of off-line and on-line solid-phase extraction (SPE). In the off-line procedure, 0.5-2 1 samples spiked with a test mixture of oxamyl, methomyl and aldicarb sulfoxide were enriched on EnviCarb SPE cartridges or 47 mm diameter EACD and eluted with dichloromethane-methanol. After evaporation, a sample was injected onto a C18-bonded silica column and analysed by liquid chromatography with ultraviolet (LC-UV) detection. EACD performed better than EnviCarb cartridges in terms of breakthrough volumes (> 21 for all test analytes), reproducibility (R.S.D. of recoveries,

4-8%, n=3) and sampling speed (100 ml/min); detection limits in drinking water were 0.05-0.16 mug/l. In the on-line experiments, 4.6 mm diameter pieces cut from original EACD and stacked onto each oth
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KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air

637. Smith, J. S. (95). **PESTICIDES.** *Jeon, I. J. And W. G. Ikins (Ed.). Food Science and Technology (New York), 65. Analyzing Food for Nutrition Labeling and Hazardous Contaminants. Ix+496p. Marcel Dekker, Inc.: New York, New York, Usa* Basel, Switzerland. Isbn 0-8247-9349-8.; 65 : 333-361.

Chem Codes: Chemical of Concern: SZ,MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER FOOD CONTAMINATION ANALYTICAL METHOD
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
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638. Smith, J. S. (95). **PESTICIDES.** *Jeon, I. J. And W. G. Ikins (Ed.). Food Science and Technology (New York), 65. Analyzing Food for Nutrition Labeling and Hazardous Contaminants. Ix+496p. Marcel Dekker, Inc.: New York, New York, Usa* Basel, Switzerland. Isbn 0-8247-9349-8.; 65 : 333-361.

Chem Codes: Chemical of Concern: SZ,MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER FOOD CONTAMINATION ANALYTICAL METHOD
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KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Food Technology-General
KEYWORDS: Toxicology-General
KEYWORDS: Toxicology-Foods
KEYWORDS: Pest Control

639. Soderholm, J., Bevis, B. J., and Glick, B. S. *. (2001). **Vector for Pop-In/Pop-Out Gene Replacement in Pichia pastoris.** *Biotechniques [biotechniques]. Vol. 31, no. 2, pp. 306-312. Aug 2001.*

Chem Codes: Chemical of Concern: MOM; Rejection Code: YEAST.
Abstract: Gene replacement in yeast is often accomplished by using a counterselectable marker such as URA3. Although ura3 strains of Pichia pastoris have been generated, these strains are inconvenient to work with because they grow slowly, even in the presence of uracil. To overcome this limitation, we have developed an alternative counterselectable marker that can be used in any P. pastoris strain. This marker is the T-urf13 gene from the mitochondrial genome of male-sterile maize. Previous work showed that expression of a mitochondrially targeted form of T-urf13 in Saccharomyces cerevisiae rendered the cells sensitive to the insecticide methomyl, and similar results have now been obtained with P. pastoris. We have incorporated T-urf13 into a vector that also contains an ARG4 marker for positive selection. The resulting plasmid allows for pop-in/pop-out gene replacement in P. pastoris.

640. Sojo, L. E. (97). **Study of the feasibility of the use of activated carbon membranes for the on-line cleanup of vegetable extracts in the determination of N-methylcarbamate pesticides by liquid chromatography.** *Journal of Chromatography a* 788 : 87-94.

Chem Codes: Chemical of Concern: MOM,CBF,ADC; Rejection Code: METHODS.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Series of tests were carried out to assess the feasibility of using activated carbon membranes in the off-line and on-line cleanup of vegetable (green peppers) extracts for the analysis of N-methylcarbamate pesticides by HPLC with post-column derivatization and fluorescence detection. The approach was based on retaining the vegetable matrix co-extracted compounds on the carbon membranes, while allowing the pesticides to pass through. In the off-line method 10 ml of toluene-modified acetonitrile extracts were passed through a 22 cm activated carbon membrane, the eluent was collected, concentrated and solvent exchanged to chloroacetic acid buffer at pH 1 to a final volume of 5 ml, prior to injecting 20 mul into the HPLC system. For the on-line method, a 20 mul volume of toluene-modified acetonitrile extract was injected directly into the HPLC system. It was found that the membranes were effective in retaining sample interferences and providing off-line and on-line clean e
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Studies
KEYWORDS: Food Technology-General
KEYWORDS: Toxicology-Foods
KEYWORDS: Pest Control

641. Sojo, L. E. (97). **Study of the feasibility of the use of activated carbon membranes for the on-line cleanup of vegetable extracts in the determination of N-methylcarbamate pesticides by liquid chromatography.** *Journal of Chromatography a* 788 : 87-94.

Chem Codes: Chemical of Concern: MOM,CBF,ADC; Rejection Code: METHODS.
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KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Studies
KEYWORDS: Food Technology-General
KEYWORDS: Toxicology-Foods
KEYWORDS: Pest Control

642. Speth, T. F. and Miltner, R. J. (98). **Technical note: Adsorption capacity of GAC for synthetic organics.** *American Water Works Association Journal* 90 : 171-174.

Chem Codes: Chemical of Concern: EDT,MOM; Rejection Code: FATE.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Isotherms are presented for 15 compounds organic-free water. The compounds - ranging from pesticides to disinfection by-products - are all of regulatory interest.
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-Molecular Properties and Macromolecules
KEYWORDS: Public Health-Disinfection and Vector Control
KEYWORDS: Public Health: Environmental Health-Sewage Disposal and Sanitary
KEYWORDS: Disinfection
KEYWORDS: Pest Control

643. Spooner, J. , Wyatt, L., Brichford, S. L., Lanier, A. L., Coffey, S. W., and Smolen, M. D. (90). **NONPOINT SOURCES.** *Res J Water Pollut Control Fed* 62 : 537-546.

Chem Codes: Chemical of Concern: SZ,MOM,CBF,ADC; Rejection Code: SURVEY.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM REVIEW WASTE MANAGEMENT INDUSTRY WATER POLLUTION CONTROL WATER QUALITY BEST MANAGEMENT PRACTICES MODELING METHODS MONITORING METHODS ECONOMIC IMPLICATIONS
KEYWORDS: General Biology-Information
KEYWORDS: Methods
KEYWORDS: Ecology
KEYWORDS: Public Health: Environmental Health-Sewage Disposal and Sanitary Measures
KEYWORDS: Public Health: Environmental Health-Air

644. Spooner, J. , Wyatt, L., Brichford, S. L., Lanier, A. L., Coffey, S. W., and Smolen, M. D. (90). **NONPOINT SOURCES.** *Res J Water Pollut Control Fed* 62 : 537-546.

Chem Codes: Chemical of Concern: SZ,MOM,CBF,ADC; Rejection Code: SURVEY.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM REVIEW WASTE MANAGEMENT INDUSTRY WATER POLLUTION CONTROL WATER QUALITY BEST MANAGEMENT PRACTICES MODELING METHODS MONITORING METHODS ECONOMIC IMPLICATIONS
KEYWORDS: General Biology-Information
KEYWORDS: Methods
KEYWORDS: Ecology
KEYWORDS: Public Health: Environmental Health-Sewage Disposal and Sanitary Measures
KEYWORDS: Public Health: Environmental Health-Air

645. Sridharan, S. and Janarthanan, R. (1986(Recd). **HIGH PRESSURE LIQUID CHROMATOGRAPHIC METHOD FOR ESTIMATION OF DISLODGEABLE RESIDUES OF METHOMYL.** *Curr Sci (Bangalore)* 55 : 1987).

Chem Codes: Chemical of Concern: MOM; Rejection Code: CHEM METHODS.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BHENDI BRINJAL INSECTICIDE FOOD RESIDUE REVERSE PHASE HIGH PRESSURE LIQUID CHROMATOGRAPHY
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General

KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Food Technology-Fruits
KEYWORDS: Food Technology-Evaluations of Physical and Chemical Properties (1970-)
KEYWORDS: Toxicology-Foods
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control

646. Stafford, S. C. and Lin, W. *. (92). **Determination of oxamyl and methomyl by high-performance liquid chromatography using a single-stage postcolumn derivatization reaction and fluorescence detection.** *Journal of agricultural and food chemistry [j. Agric. Food chem.]* 40: 1026-1029.

Chem Codes: Chemical of Concern: MOM; Rejection Code: METHODS.
Abstract: A method is described for the determination of oxamyl and methomyl residues in apples, oranges, soybean leaves, insects, and river water by high-performance liquid chromatography. This method uses matrix solid-phase dispersion isolation, a single-stage postcolumn derivatization reaction, and fluorescence determination. Recovery data for both oxamyl and methomyl were obtained by fortifying the raw agricultural commodities (RACs) at levels ranging from 20 to 1000 ng/mg and the water at levels ranging from 5 to 50 ng/mL. The recoveries ranged from 72 to 129%. The limits of detection, calculated as 4 times the baseline noise, were 5 mg/mL for water and 20 ng/g for the RACs tested.

647. Stamp, J. J., Siegmund, E. G., Cairns, T., and Chan, K. K. (86). **Chemical ionization mass spectrometry of carbamate pesticides: A major dissociation pathway.** *Anal Chem* 58 : 873-881.

Chem Codes: Chemical of Concern: MOM,CBF,ADC; Rejection Code: METHODS, NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. The ammonia and methane hemical ionization mass spectra of 20 carbamate pesticides have been examined to determine the analytical usefulness of selected ions in pesticide residue analysis. Transfer of the amide hydrogen to the alcohol portion of the carbamate to form a protonated alcohol is supported by deuterated reagent gas studies and the blocking effect of methylation at the amide hydrogen site. A major dissociation mechanism of even electron ions involving the concept of a proton bound bimolecular complex has been postulated to occur where the participating neutral molecules in the complex can rotate about the bound proton in the selection process of a suitable basic site for cation formation. This mechanism now permits valuable structural information via observance of both protonated alcohols and protonated isocyanates. Fragmentation of protonated molecular ions increased upon changing from methane to ammonia reagent gas and it was concluded that the judicious choi

648. Stamp, J. J., Siegmund, E. G., Cairns, T., and Chan, K. K. (86). **Chemical ionization mass spectrometry of carbamate pesticides: A major dissociation pathway.** *Anal Chem* 58 : 873-881.

Chem Codes: Chemical of Concern: MOM,CBF,ADC; Rejection Code: METHODS, NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. The ammonia and methane hemical ionization mass spectra of 20 carbamate pesticides have been examined to determine the analytical usefulness of selected ions in pesticide residue analysis. Transfer of the amide hydrogen to the alcohol portion of the carbamate to form a protonated alcohol is supported by deuterated reagent gas studies and the blocking effect of methylation at the amide hydrogen site. A major dissociation mechanism of even electron ions involving the concept of a proton bound bimolecular complex has been postulated to occur where the participating neutral molecules in the complex can rotate about the bound proton in the selection process of a suitable basic site for cation formation. This mechanism now permits valuable structural information via observance of both protonated alcohols and protonated isocyanates. Fragmentation of protonated molecular ions increased upon changing from methane to ammonia reagent gas and it was concluded that the judicious choi

649. Stansly, P. A. and Conner, J. M. (99). **Control of lepidopteran pests on cabbage with Bacillus thuringiensis (Bt), 1998.** *Saxena, K. N. (Ed.). Arthropod Management Tests, Vol. 24. V+478p. Entomological Society of America: Lanham, Maryland, Usa. Isbn 0-938522-86-8* 24 : 113-114.

Chem Codes: Chemical of Concern: MOM; Rejection Code: BIOLOGICAL TOXICANT.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER BRASSICA OLERACEA

PLUTELLA XYLOSTELLA TRICHOPLUSIA NI BACILLUS THURINGIENSIS CABBAGE DIAMONDBACK MOTH CABBAGE LOOPER CULTIVAR-SOLID BLUE VEGETABLE CROP HOST PEST CONTROL BIOLOGICAL CONTROL AGENT HORTICULTURE ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES MATTCH EFFICACY INSECTICIDE PEST MANAGEMENT LANNATE XENTARI MYX-833 MPVII FLORIDA USA
KEYWORDS: Horticulture-Vegetables
KEYWORDS: Phytopathology-Diseases Caused by Animal Parasites
KEYWORDS: Phytopathology-Disease Control
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Field
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Endospore-Forming Gram-Positives (1992-)
KEYWORDS: Cruciferae
KEYWORDS: Lepidoptera

650. Stefani, R., Buzzi, M., and Grazzi, R. (97). **Supercritical fluid extraction of pesticide residues in fortified apple matrices.** *Journal of Chromatography a* 782 : 123-132.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. In the present work, by means of the supercritical fluid extraction (SFE) technique, we developed a method for pesticide residue extraction which proved fast and effective in extracting the largest possible number of plant protection products in a short time and with acceptable recoveries and reproducibility. We observed the recoveries in fortified apple matrices while the instrument conditions varied, and obtained eventually parameters which allowed us to extract - by one and the same method - 92 pesticides, with good levels of recovery and reproducibility. Then, the pesticides were assessed by means of multiresidue methods, gas chromatography and high-performance liquid chromatography.
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Food Technology-General
KEYWORDS: Food Technology-Fruits
KEYWORDS: Food Technology-Evaluations of Physical and Chemical Properties (1970-)
KEYWORDS: Toxicology-Foods

651. Steurbaut, W., Dejonckheere, W., and Drieghe, S. (**Pesticide residues after aerial application in greenhouses.** 60: 599-609 CODEN: MFLBER; Rejection Code: NO TOX DATA.
Residues of some frequently used pesticides are monitored in greenhouses after several modes of application and under varying conditions: dichlorvos, methamidophos, azinphos-Me, diazinon, chlorpyriphos, endosulfan, methomyl, bifenthrin, benomyl. The distribution of the residues was detd. in the air and on different surfaces (plants, soils, walls, clothes and exposed body parts of the applicator). The physicochem. properties of the pesticides affect the presence in the air (vapor pressure) and the surface deposits (adsorption, persistence). The mode of application is very important. High-vol. hydraulic spraying results in high deposits on the lower surfaces and on the applicator, while low-vol. misting ("cold fogging") gives rise to relative higher aerial concns. and also more deposites on higher construction surfaces. Climatic factors, such as increased temp., results in higher initial residues in the air but also in an accelerated breakdown in the air and on surfaces. Also the orientation, structure, isolation and construction materials of the greenhouses and the size and shape of the plant canopy can influence the importance and the homogeneous distribution of the residues. Certain materials can have a slow release effect and stationary layers with higher levels can be formed in the canopy due to the formation of stationary air layers. Construction and isolation can be the cause of local accumulation sites. Aerial treatment of greenhouses is very dependent on a multitude of interfering factors. A general approach for risk assessment is open to many questions, making modeling very debatable.

652. Steurbaut, W., Dejonckheere, W., and Drieghe, S. (95). **Pesticide residues after aerial application in greenhouses.** *Mededelingen Faculteit Landbouwkundige En Toegepaste Biologische Wetenschappen Universiteit Gent* 60 : 599-609.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO TOX DATA.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Pesticide residues of some frequently used pesticides are monitored in greenhouses after several modes of application and under varying conditions and circumstances: dichlorvos, methamidophos, azinphos-methyl, diazinon, chlorpyriphos, endosulfan, methomyl, bifenthrin, benomyl. The distribution of the residues was determined in the air and on different surfaces (plants, soil, walls, clothes and exposed body parts of the applicator). The physicochemical properties of the pesticides play an important role on the presence in the air (vapor pressure) and the surface deposits (adsorption, persistence). Also the mode of application is very important: high volume hydraulic spraying results in high deposits on the lower surfaces and the applicator while low volume misting ("cold fogging") gives rise to relative higher aerial concentrations and also more deposits on higher construction surfaces. Climatic factors such as increased temperature results in higher initial residues in
KEYWORDS: Toxicology-General
KEYWORDS: Public Health: Environmental Health-Occupational Health
KEYWORDS: Pest Control

653. Stimmann, M. W. and Ferguson, M. P. (90). **PROGRESS REPORT VICE PRESIDENT'S TASK FORCE ON PEST CONTROL ALTERNATIVES POTENTIAL PESTICIDE USE CANCELLATIONS IN CALIFORNIA USA.** *Calif Agric* 44 : 12-16.

Chem Codes: Chemical of Concern: SZ,RSM,PNB,MTL,MOM,ADC,CBF; Rejection Code: NO TOX DATA.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM FARMING INDUSTRY CROP INDUSTRY AGRICHEMICAL BAN LEGISLATION GOVERNMENT REGULATION SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986 FEDERAL INSECTICIDE FUNGICIDE AND RODENTICIDE ACT ENVIRONMENTAL PROTECTION ACT OF
KEYWORDS: General Biology-Institutions
KEYWORDS: Biochemical Studies-General
KEYWORDS: Agronomy-General
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-General

654. Stimmann, M. W. and Ferguson, M. P. (90). **PROGRESS REPORT VICE PRESIDENT'S TASK FORCE ON PEST CONTROL ALTERNATIVES POTENTIAL PESTICIDE USE CANCELLATIONS IN CALIFORNIA USA.** *Calif Agric* 44 : 12-16.

Chem Codes: Chemical of Concern: SZ,RSM,PNB,MTL,MOM,ADC,CBF; Rejection Code: NO TOX DATA.
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KEYWORDS: General Biology-Institutions
KEYWORDS: Biochemical Studies-General
KEYWORDS: Agronomy-General
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-General

655. Strathmann, T. J. and Stone, A. T. (2002). **Reduction of Oxamyl and Related Pesticides by Fe super(II): Influence of Organic Ligands and Natural Organic Matter.** *Environmental science & technology [environ. Sci. Technol.]. Vol. 36, no. 23, pp. 5172-5183. 1 dec 2002.*

Chem Codes: Chemical of Concern: MOM,ADC; Rejection Code: CHEM METHODS.
Abstract: The reduction of oxamyl and related oxime carbamate pesticides (OCPs; methomyl and aldicarb) by Fe super(II) is an important pathway for the degradation of these compounds in soil and groundwater. A series of batch kinetic experiments was carried out to assess the effects that selected carboxylate and aminocarboxylate ligands have on these reactions. In the absence of Fe super(II), no OCP reduction by the

ligands is observed. In the presence of Fe super(II), the rate of OCP reduction varies by several orders of magnitude and can be described by the expression k sub(red) = [Fe super(II)] capital sigma sub(i)k sub(i) alpha sub(i), where k sub(red) is the observed pseudo-first-order rate constant for OCP reduction, [Fe super(II)] is the total Fe super(II) concentration, alpha sub(i) is the fraction of each Fe super(II) species in solution, and k sub(i) is the second-order rate constant for OCP reduction by each Fe super(II) species. The reactivity of individual Fe super(II) species is dependent upon the standard one-electron reduction potential of the corresponding Fe super(III)/Fe super(II) redox couple (E sub(H) degree) and the availability of inner-sphere Fe super(II) coordination sites for bonding with Lewis base donor groups within the OCP structure. A linear free energy relationship is proposed. Kinetic measurements demonstrate that natural organic matter from the Great Dismal Swamp facilitates OCP reduction by Fe super(II) in the same manner as the individual organic ligands. Results from this study improve our understanding of the pathways and rates of pesticide degradation in reducing subsurface environments, especially those rich in organic matter.

656. Strathmann, T. J. and Stone, A. T. (2002). **Reduction of Oxamyl and Related Pesticides by Fe super(II): Influence of Organic Ligands and Natural Organic Matter.** *Environmental science & technology [environ. Sci. Technol.]. Vol. 36, no. 23, pp. 5172-5183. 1 dec 2002.*

Chem Codes: Chemical of Concern: MOM,ADC; Rejection Code: CHEM METHODS.
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657. Strathmann, T. J. and Stone, A. T. (2001Jun15). **Reduction of the carbamate pesticides oxamyl and methomyl by dissolved FeII and CuI.** *Environ Sci Technol 2001 Jun 15;35(12):2461-9.* 35: 2461-9.

Chem Codes: Chemical of Concern: MOM; Rejection Code: METHODS.
ABSTRACT: The degradation of two oxime carbamate pesticides, oxamyl and methomyl, was investigated in anoxic solutions containing various metal ions and reducing agents. In reagent-free solutions, these carbamates degrade slowly via base-catalyzed elimination. Rates of carbamate degradation are accelerated by Fe(II), Cu(I), and Cu(II), but not by several other metal ions and reducing agents. In the presence of Fe(II), carbamates undergo a net two-electron reduction that is coupled to the sequential one-electron oxidation of two Fe(II) ions. The observed products are a substituted nitrile, methanethiol, and methylamine. A radical intermediate is inferred by polymerization of the radical scavenger acrylonitrile. Redox kinetics (i) vary with carbamate identity, (ii) exhibit first-order dependence on both Fe(II) and carbamate concentration, (iii) are relatively independent of pH, (iv) follow Arrhenius temperature dependence, and (v) are only indirectly influenced by the presence of O2. Coordinatively saturated Fe(II) complexes (Fe(II)EDTA2- and Fe(II)(CN)6(4-)) react with oxamyl at rates equal to and greater than hexaquo Fe(II), respectively, indicating that an inner-sphere Fe(II)-carbamate coordination complex is not required for electron transfer. Experimental results indicate that Cu(I) reduces the carbamates by the same mechanism as Fe(II) but at much higher rates. In contrast, Cu(II) acts as a catalyst for both elimination and reduction reactions.

658. Strathmann, T. J. and Stone, A. T. (2002Feb15). **Reduction of the pesticides oxamyl and methomyl by FeII: effect of pH and inorganic ligands.** *Environ Sci Technol 2002 Feb 15;36(4):653-61.* 36: 653-61.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO TOX DATA.
ABSTRACT: This work examines the effect that pH and selected inorganic ligands have on the kinetics of reactions between FeII and two structurally related oxime carbamate pesticides, oxamyl and methomyl. In anoxic solutions containing FeII, these compounds degrade by parallel elimination and reduction pathways. Rates of FeII-independent carbamate elimination (EIcb mechanism) are proportional to [OH-], increasing 10-fold for each unit increase in pH. In homogeneous solution, rates of carbamate reduction by 0.5 mM FeII are relatively constant at pH <7, but increase dramatically between pH 7 and pH 8.3. At pH >8.3, Fe(OH)2(s) precipitation occurs, and carbamates react with both solution-phase and solid-phase FeII. Carbamate reduction by FeII is not significantly affected by the presence of chloride, bromide, nitrate, perchlorate, and sulfate. In contrast, increased rates of carbamate reduction are observed in solutions containing fluoride, carbonate, and phosphate. Kinetic measurements are interpreted in terms of changing FeII speciation according to the expression kred = [FeII]sigmaikialphai, where k(red) is the pseudo-first-order rate constant for carbamate reduction, [FeII] is the total FeII concentration, and ki and alphai are the second-order rate constant and fractional concentration of each FeII species, respectively. It follows that the overall kinetics of carbamate reduction is a function of the identity and concentration of individual FeII species present in solution as well as the inherent reactivity of each species with carbamates. The magnitude of ki is related to the standard one-electron reduction potential (E(H) degrees) of the corresponding FeIII/FeII redox couple.

659. Sundaram, K. M., Szeto, S. Y., and Hindle, R. (1979Sep14). **Evaluation of Amberlite XAD-2 as the extractant for carbamate insecticides from natural water.** *J Chromatogr 1979 Sep 14;177(1):29-34.* 177: 29-34.

Chem Codes: MOM; Rejection Code: NO SPECIES.
ABSTRACT: A rapid and sensitive analytical technique to quantify carbamate insecticides at nanogram levels is reported using resin column and sorption, and desorption followed by N-P gas-liquid chromatography (GLC) analysis. The carbamates were extracted from natural water by percolation through a column of Amberlite XAD-2, followed by elution with ethyl acetate. The carbamate residues were directly analyzed by GLC with a Tracor Model 702 N-P detector. The recoveries for several carbamates including aminocarb, mexacarbate, carbaryl, propoxur, carbofuran, pirimicarb and methiocarb were from 86 to 108% at 1.0 and 0.01 ppm levels. Only 41 to 58% was recovered for methomyl. The extraction efficiency of Amberlite XAD-2 was pH-dependent as indicated in the extraction of aminocarb. More than 90% of the added aminocarb was recovered from phosphate buffer by the described method at pH 5.0 to 7.5 at 5.0 and 0.5 ppm levels.

660. Sundaram, K. M., Szeto, S. Y., and Hindle, R. (1979Sep14). **Evaluation of Amberlite XAD-2 as the extractant for carbamate insecticides from natural water.** *J Chromatogr 1979 Sep 14;177(1):29-34.* 177: 29-34.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO SPECIES.
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661. Swaddiwudhipong, W., Kunasol, P., Sangwanloy, O., and Srisomporn, D. (1989Mar). **Foodborne disease outbreaks of chemical etiology in Thailand, 1981-1987.** *Southeast Asian J Trop Med Public Health* 20: 125-32.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: A study was conducted to determine the current situation of chemical foodborne outbreaks in Thailand for the period 1981-1987. Seventy-three outbreaks of chemical poisoning involving 1236 persons of

whom 54 died were reported. Twenty outbreaks affecting 722 cases were caused by insecticide poisoning and methomyl was the most commonly recognized insecticide involved. Poisonous plants were responsible for 43 outbreaks with 420 cases. Mushroom poisoning was the most common entity (21 outbreaks, 211 cases), with plant seed poisoning next (9 outbreaks, 179 cases). There were 8 outbreaks following consumption of poisonous seafoods. Mussels were identified to be the vector in the outbreak of PSP. Horseshoe crabs which served as the vehicles for 4 outbreaks were also suspected to be associated with PSP. Puffer fish accounted for the remaining 3 outbreaks involving 6 cases of tetradotoxin poisoning. More complete reporting and more effort in outbreak investigations are needed for appropriate preventive and control measures.

662. Swaddiwuthipong, W., Ittiravivongs, A., Kunasol, P., and Rerk-Ngam, S. (88). **SURVEILLANCE OF FOOD POISONING OUTBREAKS IN THAILAND 1981-1986.** *Southeast Asian J Trop Med Public Health* 19 : 327-332.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM HUMAN METHOMYL PROPOXUR COUMAPHOS DDT INSECTICIDE DESSERT BEVERAGE HOME PREPARED FATALITY RATE
KEYWORDS: Biochemical Studies-General
KEYWORDS: Pathology
KEYWORDS: Food Technology-General
KEYWORDS: Food Technology-Evaluations of Physical and Chemical Properties (1970-)
KEYWORDS: Food Technology-Preparation
KEYWORDS: Toxicology-Foods
KEYWORDS: Public Health-Public Health Administration and Statistics
KEYWORDS: Public Health: Epidemiology-Communicable Diseases
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Hominidae

663. Szeto, S. Y. and Sundaram, K. M. (1980Nov21). **Simplified method for the analysis of some carbamate insecticides in foliage, forest soil and fish tissue by direct gas-liquid chromatography.** *J Chromatogr 1980 Nov 21;200:179-84* 200: 179-84.

Chem Codes: MOM,ADC,CBF; Rejection Code: CHEM METHODS.
ABSTRACT: A simplified and sensitive method for the analysis of eight carbamate insecticide residues in foliage, forest soil and fish tissue by direct gas-liquid chromatography (GLC) is described. After fortification, the carbamate residues were extracted from the natural substrates by homogenization in ethyl acetate. The interfering co-extratives present in the crude extracts were removed by filtration through Whatman GF/A glass microfibre after coagulation. The carbamate residues were re-extracted into dichloromethane and directly analyzed intact by GLC with a Tracor Model 702 nitrogen-phosphorus detector. The rate of recovery for aminocarb, carbofuran, carbaryl, methomyl, mexacarbate, pirimicarb and propoxur was better than 80% at 5.0-ppm and 0.50-ppm levels. Slightly less than 60% was recovered for methiocarb.

664. Szeto, S. Y. and Sundaram, K. M. (1980Nov21). **Simplified method for the analysis of some carbamate insecticides in foliage, forest soil and fish tissue by direct gas-liquid chromatography.** *J Chromatogr 1980 Nov 21;200:179-84* 200: 179-84.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: CHEM METHODS.
ABSTRACT: A simplified and sensitive method for the analysis of eight carbamate insecticide residues in foliage, forest soil and fish tissue by direct gas-liquid chromatography (GLC) is described. After fortification, the carbamate residues were extracted from the natural substrates by homogenization in ethyl acetate. The interfering co-extratives present in the crude extracts were removed by filtration through Whatman GF/A glass microfibre after coagulation. The carbamate residues were re-extracted into dichloromethane and directly analyzed intact by GLC with a Tracor Model 702 nitrogen-phosphorus detector. The rate of recovery for aminocarb, carbofuran, carbaryl, methomyl, mexacarbate, pirimicarb and propoxur was better than 80% at 5.0-ppm and 0.50-ppm levels. Slightly less than 60% was recovered for methiocarb.

665. Szeto, S. Y. and Sundaram, K. M. (1980Nov21). **Simplified method for the analysis of some carbamate insecticides in foliage, forest soil and fish tissue by direct gas-liquid chromatography.** *J Chromatogr 1980 Nov 21;200:179-84* 200: 179-84.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: CHEM METHODS.
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666. Ta'naka, I. , Igisu, H., Haratake, J., Cho, S., Mori, K., Fujishiro, K., Inoue, N., Horie, A., and Akiyama, T. (87). **CUMULATIVE TOXICITY POTENTIAL OF METHOMYL AEROSOL BY REPEATED INHALATION.** *Am Ind Hyg Assoc J* 48 : 330-334.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM HUMAN WORKERS RAT PLASMA LUNG LIPID CHOLINESTERASE INSECTICIDE HAZARDOUS MATERIALS
KEYWORDS: Cytology and Cytochemistry-Animal
KEYWORDS: Biochemistry-Gases (1970-)
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biochemical Studies-Proteins
KEYWORDS: Biochemical Studies-Lipids
KEYWORDS: Enzymes-Physiological Studies
KEYWORDS: Metabolism-General Metabolism
KEYWORDS: Metabolism-Lipids
KEYWORDS: Metabolism-Proteins
KEYWORDS: Blood
KEYWORDS: Blood
KEYWORDS: Respiratory System-General
KEYWORDS: Respiratory System-Pathology
KEYWORDS: Routes of Immunization
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Occupational Health
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Hominidae
KEYWORDS: Muridae

667. Takusagawa, F. and Jacobson, R. A. (1977May-Jun). **Crystal and molecular structure of carbamate insecticides. 3. Methomyl.** *J Agric Food Chem 1977 May-Jun;25(3):577-81.* 25: 577-81.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO TOX DATA.

668. Tappan, W. B., Wheeler, W. B., and Lundy, H. W. (1973Feb). **Methomyl residues on cigar-wrapper and flue-cured tobaccos in Florida.** *J Econ Entomol 1973 Feb;66(1):197-8.* 66: 197-8.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.

669. Tayaputch, N. (96). **Present aspects and environmental impacts of pesticide use in Thailand.** *Journal of Pesticide Science* 21 : 132-135.

Chem Codes: Chemical of Concern: MOM,CBF,ADC; Rejection Code: SURVEY.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. The extensive use of pesticide in Thailand has created some severe problems related to pesticide residues, pest resistance to pesticide and health hazards. In order to clarify the nature and behaviour of pesticide in the tropical environment of Thailand, the surveys of pesticide residues in soil, water, sediment, fish and shellfish to quantify the existence levels of pesticide residues were carried out during 1987-1989. The results revealed that several organochlorine pesticides some of which are no more in use now and also some organophosphorus were found remained at trace amounts in the environmental samples. The study on impact of pesticide residues on rice paddy environment had been carried out and there was no implication for short term effects from pesticide residues detected. The occupational health hazard of pesticide had also been identified and characterized by interview and field visits to formulating and repackaging plants. There was indication that hazards
KEYWORDS: Social Biology
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-General
KEYWORDS: Agronomy-General
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Invertebrata
KEYWORDS: Plantae-Unspecified
KEYWORDS: Hominidae

670. Tayaputch, N. (96). **Present aspects and environmental impacts of pesticide use in Thailand.** *Journal of Pesticide Science* 21 : 132-135.

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KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Invertebrata
KEYWORDS: Plantae-Unspecified
KEYWORDS: Hominidae

671. Teague, T. G. (93). **CONTROL OF FALL ARMYWORM IN SWEET CORN WITH BACILLUS-THURINGIENSIS 1991.** *Burditt, A. K. Jr. (Ed.). Insecticide & Acaricide Tests, Vol. 18. Ii+405p. Entomological Society of America: Lanham, Maryland, Usa.* 0 : 127-128.

Chem Codes: Chemical of Concern: MOM; Rejection Code: BIOLOGICAL TOXICANT.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM ZEA-MAYS SPODOPTERA-FRUGIPERDA MVP BIOBIT CUTLASS LANNATE JAVELIN DIPEL PESTICIDE INSECTICIDE
KEYWORDS: Biochemical Studies-General
KEYWORDS: Horticulture-Vegetables
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Field

KEYWORDS: Economic Entomology-Biological Control
KEYWORDS: Economic Entomology-Integrated Control
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Endospore-Forming Gram-Positives (1992-)
KEYWORDS: Gramineae
KEYWORDS: Lepidoptera

672. Thean, J. E., Fong, W. G., Lorenz, D. R., and Stephens, T. L. (1978Jan). **High pressure liquid chromatographic determination of methomyl and oxamyl on vegetable crops.** *J Assoc Off Anal Chem 1978 Jan;61(1):15-7.* 61: 15-7.

Chem Codes: Chemical of Concern: MOM; Rejection Code: METHOD.
ABSTRACT: A reverse phase high pressure liquid chromatographic method is presented for the separation and determination of residues of the carbamates oxamyl and methomyl on vegetables. A liquid-liquid extraction and cleanup procedure is applied to the vegetable extract. Samples are eluted from a muBondapak C18 column and quantitated by ultraviolet absorbance at 240 nm. Recovery data for vegetable samples spiked at 2 ppm are presented.

673. Theiling, K. M. and Croft, B. A. (88). **Pesticide Side-Effects on Arthropod Natural Enemies - A Database Summary.** *Agric.Ecosyst.Environ.* 21: 191-218.

Chem Codes: EcoReference No.: 54800
Chemical of Concern: MOM,CBF,ADC; Rejection Code: REVIEW.

674. Theiling, K. M. and Croft, B. A. (88). **Pesticide Side-Effects on Arthropod Natural Enemies - A Database Summary.** *Agric.Ecosyst.Environ.* 21: 191-218.

Chem Codes: EcoReference No.: 54800
Chemical of Concern: MOM,CBF,ADC; Rejection Code: REVIEW.

675. Thier, H. P. and Zeumer, H. (87). **MANUAL OF PESTICIDE RESIDUE ANALYSIS VOL. 1.** *Thier, H.-P. And H. Zeumer (Ed.). Manual of Pesticide Residue Analysis, Vol. 1. Xvi+432p. Vch Publishers, Inc.: New York, New York, Usa* Weinheim, West Germany. Illus. Isbn 0-89573-592-X; Isbn 3-527-27010-8.; 0 : Xvi+432p.

Chem Codes: Chemical of Concern: SZ,PNB,MOM,CBF,ADC; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK SOIL WATER FOOD CROPS PROCESSED FOOD STORED PRODUCTS FEEDSTUFFS FORAGE CROPS FODDER
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Nutrition-General Studies
KEYWORDS: Toxicology-General
KEYWORDS: Toxicology-Foods
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Animal Production-Feeds and Feeding
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Agronomy-General
KEYWORDS: Agronomy-Forage Crops and Fodder
KEYWORDS: Soil Science-Physics and Chemistry (1970-)
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Field
KEYWORDS: Economic Entomology-Stored Products
KEYWORDS: Economic Entomology-Animal Pests
KEYWORDS: Economic Entomology-Chemical and Physical Control

676. Thier, H. P. and Zeumer, H. (87). **MANUAL OF PESTICIDE RESIDUE ANALYSIS VOL. 1.** *Thier,*

H.-P. And H. Zeumer (Ed.). Manual of Pesticide Residue Analysis, Vol. 1. Xvi+432p. Vch Publishers, Inc.: New York, New York, Usa Weinheim, West Germany. Illus. Isbn 0-89573-592-X; Isbn 3-527-27010-8.; 0 : Xvi+432p.

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KEYWORDS: Toxicology-General
KEYWORDS: Toxicology-Foods
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Animal Production-Feeds and Feeding
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Agronomy-General
KEYWORDS: Agronomy-Forage Crops and Fodder
KEYWORDS: Soil Science-Physics and Chemistry (1970-)
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Field
KEYWORDS: Economic Entomology-Stored Products
KEYWORDS: Economic Entomology-Animal Pests
KEYWORDS: Economic Entomology-Chemical and Physical Control

677. Thistlewood, H. M. A. (91). **A survey of predatory mites in Ontario apple orchards with diverse pesticide programs.** *Canadian entomologist [can. Entomol.]* 123: 1163-1174.

Chem Codes: Chemical of Concern: MOM; Rejection Code: SURVEY.
Abstract: Leaves were collected between 2 July and 10 September from 36 (1986) and 85 (1987) apple orchards, and examined for mites. Twelve species of Phytoseiidae were found. Predatory mites were present each season in all abandoned orchards and in 43-74% of the commercial orchards. Their abundance in commercial orchards was compared with the use of insecticides applied only for control of the spotted tentiform leafminer, Phyllonorycter blancardella (Fabr.). Fewer ($P < 0.05$) phytoseiids occurred where pyrethroids were employed than in sites without pyrethroids, but differences were not found for similar use of the carbamoyl oxime, methyomyl. Fewer ($P < 0.05$) stigmaeids occurred in sites treated with methyomyl than in sites without methomyl, whereas such differences were not found for pyrethroid use.

678. Thomas, M. B. and Sturrock, P. E. (86). **DETERMINATION OF CARBAMATES BY HIGH-PERFORMANCE LIQUID CHROMATOGRAPHY WITH ELECTROCHEMICAL DETECTION USING PULSED-POTENTIAL CLEANING.** *J Chromatogr* 357 : 318-324.

Chem Codes: MTL,MOM,ADC; Rejection Code: CHEM METHODS.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM PESTICIDES ALDICARB ALDICARB SULFOXIDE ALDICARB SULFONE AMINOCARB BENDIOCARB CARBARYL CHLOROPROPHAM DESMEDIPHAM DIMETHOATE METHIOCARB METHOMYL METOLACHLOR
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control

679. Thomas, M. B. and Sturrock, P. E. (86). **DETERMINATION OF CARBAMATES BY HIGH-PERFORMANCE LIQUID CHROMATOGRAPHY WITH ELECTROCHEMICAL DETECTION USING PULSED-POTENTIAL CLEANING.** *J Chromatogr* 357 : 318-324.

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KEYWORDS: Biochemical Methods-General
KEYWORDS: Biophysics-General Biophysical Techniques
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680. Thomas, M. B. and Sturrock, P. E. (86). **DETERMINATION OF CARBAMATES BY HIGH-PERFORMANCE LIQUID CHROMATOGRAPHY WITH ELECTROCHEMICAL DETECTION USING PULSED-POTENTIAL CLEANING.** *J Chromatogr* 357 : 318-324.

Chem Codes: Chemical of Concern: MTL,MOM,ADC; Rejection Code: CHEM METHODS.
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KEYWORDS: Biochemical Methods-General
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KEYWORDS: Toxicology-Environmental and Industrial Toxicology
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681. Tinoco-Ojanguren, R. and Halperin, D. C. (98). **Poverty, production, and health: Inhibition of erythrocyte cholinesterase via occupational exposure to organophosphate insecticides in Chiapas, Mexico.** *Archives of Environmental Health* 53 : 29-35.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Occupational exposure to organophosphate pesticides and its effects on the concentration of erythrocyte cholinesterase in the rural population of Chiapas, Mexico, are described. The authors surveyed agricultural production and pesticide use was surveyed among 199 campesinos (peasants) in three communities that used various agricultural production systems. The authors measured the concentration of the cholinesterase enzyme in blood samples obtained from 65 campesinos before and after exposure to the insecticide. The authors established a comparison value for the population that was not exposed occupationally. The exposure values of the enzyme concentration were significantly lower than preexposure values (p = .00001) and reference group values (p = .0008). Individuals in the community characterized by subsistence production had significantly lower levels of the enzyme than individuals in the other two communities (p = .01). This result suggested that a greater risk of ad
KEYWORDS: Social Biology
KEYWORDS: Biochemical Studies-Proteins
KEYWORDS: Enzymes-Physiological Studies
KEYWORDS: Blood
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health-Public Health Administration and Statistics
KEYWORDS: Public Health: Environmental Health-Occupational Health
KEYWORDS: Public Health: Epidemiology-Miscellaneous
KEYWORDS: Pest Control
KEYWORDS: Hominidae

682. Tinoco-Ojanguren, R. and Halperin, D. C. (98). **Poverty, production, and health: Inhibition of erythrocyte cholinesterase via occupational exposure to organophosphate insecticides in Chiapas, Mexico.** *Archives of Environmental Health* 53 : 29-35.

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KEYWORDS: Public Health-Public Health Administration and Statistics
KEYWORDS: Public Health: Environmental Health-Occupational Health
KEYWORDS: Public Health: Epidemiology-Miscellaneous
KEYWORDS: Pest Control
KEYWORDS: Hominidae

683. Tocker, S. (80). **Microencapsulated Methomyl Insecticide.** *United patent official gazette [u. S. Pat. Off. Gaz.], Vol. 1000, no. 4, p. 1571, 1980.*

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO TOX DATA.
Abstract: An insecticide microcapsule consisting essentially of a core of methomyl surrounded by a cover of non-crosslinked, all aromatic polyurea formed by dispersing a solution of methylene chloride, methomyl and toluene-2,4-diisocyanate of at least 95% purity in aqueous medium creating a dispersion of liquid microspheres wherein the ratio of toluene-2,4-diisocyanate to methomyl is 1:4 to 3:1 by weight and the ratio of methylene chloride to methomyl is about 2:1 to 3:1 by weight, hardening the liquid microspheres by adding an aqueous alkali to the dispersion, the ratio of aqueous alkali to toluene-2,4-diisocyanate being about 0.25:2 to 2:1 on a molar basis, and removing the methylene chloride.

684. Topp, E. (93). **Effects of selected agrochemicals on methane oxidation by an organic agricultural soil.** *Can J Soil Sci* 73 : 287-291.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Methane oxidation by soils is an important sink for this greenhouse gas. When tested at 50 mg L-1, the herbicide bromoxynil, the insecticide methomyl, and the nitrification inhibitor nitrapyrin inhibited methane oxidation by soil slurries. The results suggest that these chemicals might decrease methane oxidation by agricultural soils.
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biochemical Studies-Minerals
KEYWORDS: Soil Microbiology
KEYWORDS: Soil Science-Fertility and Applied Studies (1970-)
KEYWORDS: Pest Control
KEYWORDS: Microorganisms-Unspecified

685. Topp, E., Hanson, R. S., Ringleberg, D. B., White, D. C., and Wheatcroft, R. (93). **Isolation and characterization of an N-methylcarbamate insecticide-degrading methylotrophic bacterium.** *Appl Environ Microbiol* 59 : 3339-3349.

Chem Codes: MOM,CBF; Rejection Code: BACTERIA.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. A gram-negative bacterium which hydrolyzed aryl N-methylcarbamate insecticides was isolated from an agricultural soil which quickly degraded these pesticides. This organism, designated strain ER2, grew on carbofuran as a sole source of carbon and nitrogen with a doubling time of 3 h in a mineral salts medium. The aromatic nucleus of the molecule was not metabolized, and carbofuran 7-phenol accumulated as the end product of metabolism. The insecticides carbaryl, bendiocarb, and

propoxur were similarly hydrolyzed, with each yielding the corresponding phenol. Strain ER2 contained two plasmids (120 and 130 kb). A probe cloned from the pDL11 plasmid of Achromobacter sp. strain WM111, which encodes the carbofuran hydrolase (mcd) gene (P. H. Tomasek and J. S. Karns, J. Bacteriol. 171:4038-4044, 1989), hybridized to the 120-kb plasmid. Restriction fragment profiles of pDL11 and strain ER2 plasmid DNAs suggested that the 120-kb plasmid of strain ER2 is very similar to pDL11. On
KEYWORDS: General Biology-Taxonomy
KEYWORDS: Evolution
KEYWORDS: Comparative Biochemistry
KEYWORDS: Biochemical Studies-Nucleic Acids
KEYWORDS: Biochemical Studies-Lipids
KEYWORDS: Biophysics-Molecular Properties and Macromolecules
KEYWORDS: Biophysics-Membrane Phenomena
KEYWORDS: Enzymes-Physiological Studies
KEYWORDS: Metabolism-General Metabolism
KEYWORDS: Metabolism-Energy and Respiratory Metabolism
KEYWORDS: Metabolism-Proteins
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Bacteriology
KEYWORDS: Morphology and Cytology of Bacteria
KEYWORDS: Physiology and Biochemistry of Bacteria
KEYWORDS: Genetics of Bacteria and Viruses
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Food and Industrial Microbiology-Biodegradation and Biodeterioration
KEYWORDS: Soil Microbiology
KEYWORDS: Soil Science-Physics and Chemistry (1970-)
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Bacteria-General Unspecified (1992-)
KEYWORDS: Gram-Negative Aerobic Rods and Cocci (1992-)

686. Topp, E., Hanson, R. S., Ringleberg, D. B., White, D. C., and Wheatcroft, R. (93). **Isolation and characterization of an N-methylcarbamate insecticide-degrading methylotrophic bacterium.** *Appl Environ Microbiol* 59 : 3339-3349.

Chem Codes: Chemical of Concern: MOM,CBF; Rejection Code: BACTERIA.
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KEYWORDS: Biophysics-Molecular Properties and Macromolecules
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KEYWORDS: Metabolism-Proteins

KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Bacteriology
KEYWORDS: Morphology and Cytology of Bacteria
KEYWORDS: Physiology and Biochemistry of Bacteria
KEYWORDS: Genetics of Bacteria and Viruses
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Food and Industrial Microbiology-Biodegradation and Biodeterioration
KEYWORDS: Soil Microbiology
KEYWORDS: Soil Science-Physics and Chemistry (1970-)
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Bacteria-General Unspecified (1992-)
KEYWORDS: Gram-Negative Aerobic Rods and Cocci (1992-)

687. Trimble, R. M., Pree, D. J., and Vickers, P. M. (90). **Survey for insecticide resistance in some Ontario (Canada) populations of the apple leafminer parasite, Pholetesor ornigis (Weed) (Hymenoptera: Braconidae).** *Can Entomol* 122 : 969-974.

Chem Codes: Chemical of Concern: MOM; Rejection Code: SURVEY.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Pholetesor ornigis (Weed) from 16 orchards in seven Ontario apple production areas were tested from 1987 to 1989 to determine if their levels of resistance to permethrin and methomyl were higher than those measured earlier in two Ontario populations and if they had developed resistance to azinphosmethyl. Higher levels of resistance were not detected and there was no evidence of resistance to azinphosmethyl. Some possible reasons for the lack of higher levels of insecticide resistance and some alternatives to insecticide resistance for parasite conservation are discussed.
KEYWORDS: General Biology-Conservation
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-General
KEYWORDS: Horticulture-Temperate Zone Fruits and Nuts
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Fruits and Nuts
KEYWORDS: Economic Entomology-Biological Control
KEYWORDS: Economic Entomology-Integrated Control
KEYWORDS: Parasitology-General
KEYWORDS: Invertebrata
KEYWORDS: Rosaceae
KEYWORDS: Hymenoptera

688. Tsai, M. J. , Wu, S. N., Cheng, H. A., Wang, S. H., and Chiang, H. T. (2003). **An outbreak of food-borne illness due to methomyl contamination.** *J Toxicol Clin Toxicol 2003;41(7):969-73.* 41: 969-73.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: BACKGROUND: On December 26, 2002, 124 dinners took ill while eating lunch at a seafood restaurant in the town of Chiching in Kaohsiung municipality of Taiwan. Sixty-nine people were sent to the emergency departments of the Municipal Chiching Hospital and Yuan's General Hospital. METHODS: We analyzed the clinical symptoms, detailed food history, and ingested amount of each food from 59 hospitalized adult patients and identified the source of the outbreak. RESULTS: The median latency period from beginning eating to first symptoms was 5 min. Twenty-six symptoms and signs were recorded. The most commonly reported clinical effects were general weakness (84%), ataxia (82%), dizziness (82%), vomiting (80%), sweating (75%), floating sensation (71%), headache (69%), dyspnea (69%), and blurred vision (67%). Thirty-one patients had residual symptoms 7 days after ingestion. Of the six residual symptoms reported, the most frequent ones were dizziness (40%), poor appetite and dry mouth (11%), and gastrointestinal disturbance (11%). The presence of residual symptoms correlated with the severity of the initial complaints ($p < 0.01$). Almost all patients ate cooked rice (93%) and leaf vegetable stir-fried with crab claw (93%). The amount of each food eaten by the patients was not associated with the severity of symptoms ($p > 0.05$). High levels of methomyl in leaf vegetables of "leaf vegetables stir-fried with crab claws" (380 ppm) and fried mussels (1113

ppm) were found by the Food Inspection Center at the Department of Health. The food history and chemical analysis of the poison indicated methomyl was the cause of this outbreak. Twenty-four patients recovered completely within 7 days. CONCLUSION: Food-related methomyl intoxication produced a rapid onset of significant clinical toxicity in 124 individuals. Based on the analysis of 55 adult patients, the most common effects were gait ataxia, dizziness, generalized weakness, and vomiting.

689. Tsatsakis, A. M. (1998Oct-Dec). **More fatal methomyl poisonings in Crete.** *Sci Justice 1998 Oct-Dec;38(4):282-3.* 38: 282-3.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.

690. Tsatsakis, A. M., Bertsias, G. K., Mammas, I. N., Stiakakis, I., and Georgopoulos, D. B. (2001). **Acute Fatal Poisoning by Methomyl Caused by Inhalation and Transdermal Absorption.** *Bulletin of environmental contamination and toxicology [Bull. Environ. Contam. Toxicol.]* 66: 415-420.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
Abstract: In Crete, various pesticides are increasingly used in land cultivation to increase production and raise crop quality. Methomyl, S-methyl-N-[(methylcarbomoyl)-oxy]thioacetimidate, is a carbamate insecticide marketed as an aqueous solution but also in solid form, under the trade names Lannate registered and Nudrin registered . The main characteristics of the carbamate pesticides are the broad spectrum of activity, mainly attributed to the suppression of cholinesterase activity, and the high effectiveness. Case reports of methomyl poisoning caused by inhalation or transdermal absorption are rare. This report presents the clinical and laboratory data of one case of acute poisoning by methomyl caused by inhalation and transdermal absorption, with no signs of ingestion of the agent. The development of poisoning and the fatal outcome are discussed in relation to the use of Lexotanil registered (bromazepam), a mild anxiolytic drug.

691. Tsatsakis, A. M., Tsakalof, A. K., and Michalodimitrakis, E. N. (1996Jan-Mar). **The analysis of methomyl, a carbamate pesticide, in post-mortem samples.** *Sci Justice 1996 Jan-Mar;36(1):41-5.* 36: 41-5.

Chem Codes: Chemical of Concern: MOM; Rejection Code: METHODS, HUMAN HEALTH.
ABSTRACT: Extraction procedures and analytical methods are described for the quantitation of methomyl, a carbamate insecticide, in autopsy tissue and fluid samples. The analytical results from case work demonstrate the rapid metabolism of methomyl in the body.

692. Tsatsakis, A. M., Tsakalof, A. K., Siatitsas, Y., and Michalodimitrakis, E. N. (1996Jan-Mar). **Acute poisoning with carbamate pesticides: the Cretan experience.** *Sci Justice 1996 Jan-Mar;36(1):35-9.* 36: 35-9.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: In Crete, in southern Greece, a number of fatal carbamate poisonings were investigated over a period of 2 years, from 1991 to 1993. Five cases are reported, involving the fatal ingestion of methomyl (Lannate), a cholinesterase-inhibiting carbamate insecticide. Analysis of samples of blood plasma and serum showed more than 90% inhibition of cholinesterase. The blood methomyl concentrations had a mean value of 26.7 mg/l, and a range of 5.6-57.0 mg/l. These values are much higher than those previously reporter in similar cases (0.57-1.4 mg/l). Methomyl concentrations in organs and tissues were found to be significantly lower than those in blood and vitreous humour.

693. Tseng Dyi-Hwa, Lee Jiunn-Fwu, and Wang Su-Liang (99). **Removal of pesticides from water using powder activated carbon in chemical coagulation process.** *Water Supply [Water Supply]. Vol. 17, no. 3-4, pp. 135-142. 1999.*

Chem Codes: CBF; Rejection Code: METHODS/NO TOX DATA.
This study aimed to investigate the characteristics and effects of powder activated carbon on carbamate insecticide removal in the presence of turbidity and humic acid during chemical coagulation operation. The adsorption isotherm tests indicated that SIGMA C-5260 PAC had the greatest adsorption capacity compared to others. The tendency of adsorption for four kinds of carbamates was in the order of BPMC > carbofuran > MIPC > methomyl. The addition of PAC during coagulation not only enhanced coagulation efficiency but also

reduced the coagulant demand. The removal ratios of carbamate insecticides were usually less than 20% in the conventional coagulation process, but when adding 40 mg/l PAC, the average removal could be greater than 80%. Carbamate Pesticides. Activated Carbon. Coagulation. Turbidity. Humic Acids. Adsorption. Isotherms. Testing Procedures. Water treatment. Pesticides. Chemical treatment. Insecticides. Carbamate compounds. Pollutant removal. Pesticides (Organonitrogen). Humic matter. Adsorption (see also Sorption) Conference: 11. IWSA-ASPAC Regional Conference on Integrating the Urban Water Cycle, Sydney (Australia), 1-5 Nov 1998
ISSN: 0735-1917
Publisher: Blackwell Science Ltd., Osney Mead Oxford OX2 0EL UK, [URL:http://www.blacksci.co.uk]
Language: English
Identifiers: PAC
Subfile: Water Resources Abstracts; Pollution Abstracts; Aqualine Abstracts

694. Tseng Dyi-Hwa, Lee Jiunn-Fwu, and Wang Su-Liang (99). **Removal of pesticides from water using powder activated carbon in chemical coagulation process.** *Water Supply [Water Supply]. Vol. 17, no. 3-4, pp. 135-142. 1999.*

Chem Codes: Chemical of Concern: CBF; Rejection Code: METHODS /NO TOX DATA.
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Language: English
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695. Ueda, A., Aoyama, K., Manda, F., Ueda, T., and Kawahara, Y. (94). **Delayed-type allergenicity of triforine (Saprol).** *Contact Dermatitis* 31 : 140-145.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. The delayed-type allergenicity of triforine (Saprol), 1,4-bis (2,2,2-trichloro-1-formamidoethyl) piperazine, was studied. In a mass examination of chrysanthemum growers among whom triforine was commonly used, the highest rate of positive patch test reaction was seen to triforine (17%) among the 7 pesticides and chrysanthemum extracts tested. A higher prevalence rate of work-related skin symptoms was seen in subjects with a positive patch test reaction to triforine (44%) than in those with negative reactions to all allergens tested (15%) ($p < 0.05$). 12 subjects (67%) with positive patch test reactions to triforine were also positive to dichlorvos (DDVP), with a high kappa coefficient (0.65). The grading of guinea pig maximization test to triforine was grade IV (66%), defined as "strong". Cross-sensitization between triforine and dichlorvos was also shown. The present results confirm that triforine is capable of including delayed-type allergy among chrysanthemum grower
KEYWORDS: Biochemical Studies-General
KEYWORDS: Pathology
KEYWORDS: Integumentary System-Pathology
KEYWORDS: Immunology and Immunochemistry-Immunopathology
KEYWORDS: Allergy
KEYWORDS: Public Health: Environmental Health-Occupational Health
KEYWORDS: Plant Physiology
KEYWORDS: Horticulture-Flowers and Ornamentals

KEYWORDS: Pest Control
KEYWORDS: Compositae
KEYWORDS: Hominidae

696. Vaal, M., Van, D. E. R. Wal Jt, Hoekstra, J., and Hermens, J. (97). **Variation in the sensitivity of aquatic species in relation to the classification of environmental pollutants.** *Chemosphere* 35 : 1311-1327.

Chem Codes: Chemical of Concern: MOM; Rejection Code: REVIEW.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Differences in species sensitivity to toxicants can be substantial. In this study this among-species variation in sensitivity was analyzed in relation to chemical's mode of action. Chemicals were classified as: non-polar narcotics, polar narcotics, reactive compounds and specifically acting compounds. Acute toxicity data of aquatic species were derived from the literature. Levels of enhanced toxicity, averaged over all species, and interspecies variation in sensitivity were analyzed for 35 chemicals, with data ranging from 12 to 62 aquatic species per compound. Non-polar and polar narcotic chemicals demonstrate the smallest variation in sensitivity and have levels of toxicity, which are highly predictable on the basis of their hydrophobicity. Reactive and specifically acting compounds can be much more toxic than predicted and variation in species sensitivity can be as large as 105 to 106. In general, the larger this interspecies variation the more asymmetric is the toxi
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-Molecular Properties and Macromolecules
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air

697. Vainio, H. (99). **Fruits, vegetables and pesticidesng?** *Scandinavian Journal of Work Environment & Health* 25 : 161-162.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM EDITORIAL HUMAN FRUIT VEGETABLES PESTICIDES RISK FACTORS EPITHELIAL CANCERS GASTRIC CANCER PRODUCE SAFETY HEALTH HAZARDS DEPARTMENT OF AGRICULTURE TOXICITY INDEX METHYL PARATHION PESTICIDE EPA AGE DIELDRIN INSECTICIDE AGRICULTURAL SOIL DIMETHOATE ORGANOPHOSPHATE OMETHOATE METHOMYL CARBAMATE RISK MANAGEMENT TOXICOLOGY PUBLIC HEALTH NUTRITION NEOPLASTIC DISEASE DIGESTIVE SYSTEM DISEASE GOVERNMENT AGENCY NORTH AMERICA NEARCTIC REGION
KEYWORDS: Social Biology
KEYWORDS: Nutrition-General Studies
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health-General and Miscellaneous
KEYWORDS: Public Health: Environmental Health-Miscellaneous
KEYWORDS: Pest Control
KEYWORDS: Hominidae

698. Valdes, J. J., Eldefrawi, M. E., and Army Edgwood Research, Development and Engineering Cent., Aberdeen Proving Ground, MD (USA) (93). **Rapid detection of anticholinesterase pesticides.**

Chem Codes: Chemical of Concern: ADC; Rejection Code: IN VITRO.
A light addressable potentiometric sector (LAPS) was used to detect organophosphate and carbamate anticholinesterase (antiChEs), using eel acetylcholinesterase (AChE) as the biological sensing element. The biotinylated AChE was first pre-incubated with either an inhibitor or buffer alone, then captured on the biotinylated nitrocellulase membrane via streptavidin cross-linking, or the AChE was pre-immobilized on the capture membrane, then a sample containing the antiChE was filtered through the capture membrane. Hydrolysis of acetylcholine (ACh) by the captured AChE resulted in a strong potentiometric signal and the immobilized AChE retained its affinity for ACh and antiChEs. IC (sub 50) values for inhibition of captured AChE obtained by the LAPS agreed with those obtained by either a spectrophotometric method or a fiber-optic evanescent fluorosensor. Paraoxon and bendiocarb were detected at 10 nM, whereas higher concentrations required for monocrotophos, dicrotophos, dichlorvos, phosdrin, diazinon, tetraethylpyrophosphate, aldicarb,

and methomyl. Important features of the LAPS for detection of antiChEs are speed (eight samples assayed simultaneously in minutes), precision, and reusability. pollutant identification. pesticides. membranes. pollutants Language: English
Identifiers: biosensors
Subfile: Water Resources Abstracts

699. Valdes, J. J., Eldefrawi, M. E., and Army Edgwood Research, Development and Engineering Cent., Aberdeen Proving Ground, MD (USA) (93). **Rapid detection of anticholinesterase pesticides.**

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700. Valiulis, D. (85). **WHAT CAN YOU DO WITH RINSE WATER.** *Agrichem Age* 29 : 13c, 16.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM HAZARDOUS WASTE RESOURCE CONSERVATION AND RECOVERY ACT AERIAL APPLICATOR PESTICIDE AGRICULTURE LAW AGRICHEMICAL SERVICE INDUSTRY AGRIBUSINESS REGULATORY AGENCY EPA USA
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Sewage Disposal and Sanitary Measures
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Agronomy-Weed Control
KEYWORDS: Phytopathology-Disease Control
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control

701. Valiulis, D. (85). **WHAT CAN YOU DO WITH RINSE WATER.** *Agrichem Age* 29 : 13c, 16.

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KEYWORDS: Economic Entomology-Chemical and Physical Control

702. Van Emon Jm and Mumma, R. O. (90). **ACS AMERICAN CHEMICAL SOCIETY SYMPOSIUM SERIES NO. 442 IMMUNOCHEMICAL METHODS FOR ENVIRONMENTAL ANALYSIS 198TH NATIONAL MEETING MIAMI BEACH FLORIDA USA SEPTEMBER 10-15 1989.** *Van Emon, J. M. And R. O. Mumma (Ed.). Acs (American Chemical Society) Symposium Series, No. 442. Immunochemical Methods for Environmental Analysis* 198th National Meeting, Miami Beach, Florida, Usa, September 10-15, 1989. X+229p. American Chemical Society: Washington, D.c., Usa. Illus. Isbn 0-8412-1875-7.; 0 : X+229p.

Chem Codes: SZ,MTL,MOM,MLT,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK HUMAN FOOD CONTAMINANTS ENVIRONMENTAL CONTAMINANTS ENVIRONMENTAL TOXINS
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biochemical Studies-Proteins
KEYWORDS: Biophysics-Molecular Properties and Macromolecules
KEYWORDS: Food Technology-General
KEYWORDS: Toxicology-Foods
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KEYWORDS: Immunology and Immunochemistry-General
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KEYWORDS: Hominidae

703. Van Emon Jm and Mumma, R. O. (90). **ACS AMERICAN CHEMICAL SOCIETY SYMPOSIUM SERIES NO. 442 IMMUNOCHEMICAL METHODS FOR ENVIRONMENTAL ANALYSIS 198TH NATIONAL MEETING MIAMI BEACH FLORIDA USA SEPTEMBER 10-15 1989.** *Van Emon, J. M. And R. O. Mumma (Ed.). Acs (American Chemical Society) Symposium Series, No. 442. Immunochemical Methods for Environmental Analysis* 198th National Meeting, Miami Beach, Florida, Usa, September 10-15, 1989. X+229p. American Chemical Society: Washington, D.c., Usa. Illus. Isbn 0-8412-1875-7.; 0 : X+229p.

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KEYWORDS: Immunology and Immunochemistry-General
KEYWORDS: Public Health: Environmental Health-Air
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704. Van Emon Jm and Mumma, R. O. (90). **ACS AMERICAN CHEMICAL SOCIETY SYMPOSIUM SERIES NO. 442 IMMUNOCHEMICAL METHODS FOR ENVIRONMENTAL ANALYSIS 198TH NATIONAL MEETING MIAMI BEACH FLORIDA USA SEPTEMBER 10-15 1989.** *Van Emon, J. M. And R. O. Mumma (Ed.). Acs (American Chemical Society) Symposium Series, No. 442. Immunochemical Methods for Environmental Analysis* 198th National Meeting, Miami Beach, Florida, Usa, September 10-15, 1989. X+229p. American Chemical Society: Washington, D.c., Usa. Illus. Isbn 0-8412-1875-7.; 0 : X+229p.

Chem Codes: Chemical of Concern: SZ,MTL,MOM,MLT,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK HUMAN FOOD CONTAMINANTS ENVIRONMENTAL CONTAMINANTS ENVIRONMENTAL TOXINS
KEYWORDS: Biochemical Methods-General
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KEYWORDS: Food Technology-General
KEYWORDS: Toxicology-Foods
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Immunology and Immunochemistry-General
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Hominidae

705. Van Hemmen Jj and Brouwer, D. H. (97). **Exposure assessment for pesticides: Operators and harvesters risk evaluation and risk management.** *Mededelingen Faculteit Landbouwkundige En Toegepaste Biologische Wetenschappen Universiteit Gent* 62 : 113-131.

Chem Codes: Chemical of Concern: MOM; Rejection Code: MODEL.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Exposure assessment is an integral part of risk assessment processes which are required under the European Directive 91/414 (on the putting on the market of plant protection products). Crop protection is done in various ways by applying the plant protection products (pesticide formulations) to the crop or in enclosed spaces. Harvesting of a crop may lead to transfer of the pesticide residue from the foliage to the skin of the workers. To account for the possible harmful aspects, the exposure during these activities can either be assessed by experimental field studies for specific crops and tasks, or by using predictive exposure models. Within the European framework of the Directive these models are developed and harmonized. The present status of EUROPOEM (European Predictive Operator Exposure Model) and other models is discussed, together with its implications for risk assessment and risk management./ECONOMICS
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Occupational Health
KEYWORDS: Economic Botany
KEYWORDS: Pest Control
KEYWORDS: Hominidae

706. Van Laecke K and Degheele, D. (**Carboxylamidases in Spodoptera exigua: Properties and distribution in the larval body.**

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO TOX DATA.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Resistance to many insecticides demonstrated by the beet armyworm, Spodoptera exigua (Hubner), can be caused by the action of carboxylamidases. A colorimetric method, based on the hydrolysis of 4-nitroacetanilide to 4-nitroaniline by carboxylamidases, was used for evaluating biochemical properties of these detoxifying enzymes in beet armyworm. The optimum pH and temperature were 7.5 and 38êC, respectively. Km (Michaelis constant) and Vmax (maximal velocity) at 28êC were 2.3 X 10-4 M and 2.06 nmol min-1 mg protein-1, respectively. The enzyme activity was evaluated in sevral body parts and located mostly (66.2%) in the midgut. The soluble fraction (supernatant of 105,000g) contained the highest enzyme activity relative to the total (69.3%), and exhibited the highest specific activity. Carboxylamidase activity was totally inhibited in vitro at a concentration of 10-6 M methomyl. The analysis of the in vitro inhibition kinetics indicated the ability of methomyl and diflubenz
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biochemical Studies-Proteins
KEYWORDS: Enzymes-Chemical and Physical
KEYWORDS: Enzymes-Physiological Studies
KEYWORDS: Metabolism-General Metabolism
KEYWORDS: Toxicology-General
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Invertebrata
KEYWORDS: Euphorbiaceae
KEYWORDS: Lepidoptera

707. Vassilakis, I., Tsipi, D., and Scoullos, M. (98). **Determination of a variety of chemical classes of pesticides in surface and ground waters by off-line solid-phase extraction, gas chromatogrpahy with electron-capture and nitrogen-phosphorus detection, and high-performance liquid chromatography with post-column derivatization and fluorescence detection.** *Journal of Chromatography a* 823 : 49-58.

Chem Codes: Chemical of Concern: SZ,MOM,ADC,CBF; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Octadecyl (C18)-bonded porous silica was evaluated for the extraction of triazines, organochlorine, carbamates and acidic pesticides from surface and ground water. Gas chromatography with selected detection methods (electron-capture detection, nitrogen-phosphorus detection, mass spectrometry) and liquid chromatography-post-column derivatization fluorescence detection was employed for the determination of 32 pesticides. Recoveries varied from 52 to 102%. The recoveries of triazines obtained using C18 extraction cartridges and conventional liquid-liquid extraction (LLE) are compared. The limit of detection for seventeen organochlorine compounds was better than 0.003 mug/l and the limit of detection for other 15 analytes was better than 0.06 mug/l. The proposed analytical methodology was applied to analyze pesticides in surface and ground-water samples of the Lassithi Plateau, Crete, Greece.
KEYWORDS: General Biology-Conservation
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control

708. Vassilakis, I., Tsipi, D., and Scoullos, M. (98). **Determination of a variety of chemical classes of pesticides in surface and ground waters by off-line solid-phase extraction, gas chromatogrpahy with electron-capture and nitrogen-phosphorus detection, and high-performance liquid chromatography with post-column derivatization and fluorescence detection.** *Journal of Chromatography a* 823 : 49-58.

Chem Codes: Chemical of Concern: SZ,MOM,ADC,CBF; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Octadecyl (C18)-bonded porous silica was evaluated for the extraction of triazines, organochlorine, carbamates and acidic pesticides from surface and ground water. Gas chromatography with selected detection methods (electron-capture detection, nitrogen-phosphorus detection, mass spectrometry) and liquid chromatography-post-column derivatization fluorescence detection was employed for the determination of 32 pesticides. Recoveries varied from 52 to 102%. The recoveries of triazines obtained using C18 extraction cartridges and conventional liquid-liquid extraction (LLE) are compared. The limit of detection for seventeen organochlorine compounds was better than 0.003 mug/l and the limit of detection for other 15 analytes was better than 0.06 mug/l. The proposed analytical methodology was applied to analyze pesticides in surface and ground-water samples of the Lassithi Plateau, Crete, Greece.
KEYWORDS: General Biology-Conservation
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KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control

709. Venegas, W., Zapata, I., Carbonell, E., and Marcos, R. (98). **Micronuclei analysis in lymphocytes of pesticide sprayers from Concepcion, Chile.** *Teratogenesis Carcinogenesis and Mutagenesis* 18 : 123-129.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. To estimate the genetic risk associated with pesticide exposure in a defined population, the frequency of micronuclei (MN) in peripheral blood lymphocytes from a group of 22 pesticide sprayers from Concepcion, Chile, occupationally exposed to pesticide mixtures was evaluated. After scoring 1,000 binucleated cells for each donor, no significant increases were observed either for the total number of MN or for binucleated cells with MN, when compared with a concurrent control population. In addition, when the effects of different confounding factors such as age, smoking, and drinking habits were considered, no significant effect was observed. Our conclusion is that, in this specific group of workers and under the particular conditions of exposure to pesticides, when evaluated by the micronucleus

assay, no genetic risk was detected.
KEYWORDS: Cytology and Cytochemistry-Human
KEYWORDS: Genetics and Cytogenetics-Human
KEYWORDS: Blood
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Miscellaneous
KEYWORDS: Pest Control
KEYWORDS: Hominidae

710. Venkat, J. A., Shami, S., Davis, K., Nayak, M., Plimmer, J. R., Pfeil, R., and Nair, P. P. (95). **Relative Genotoxic Activities of Pesticides Evaluated by a Modified SOS Microplate Assay.** *Environmental and Molecular Mutagenesis* 25 : 67-76.

Chem Codes: Chemical of Concern: SZ,MTL,MOM,ADC,CBF; Rejection Code: BACTERIA.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. The genotoxic activities of 47 pesticides were determined using a modified SOS microplate assay in which the induction of beta-galactosidase in E. coli PQ37 was used as a quantitative measure of genotoxic activity. The results were compared with those obtained with anethole, curcumin, and capsaicin, a few examples of naturally occurring compounds present in foods. The assays were conducted with pesticides dissolved either in a suitable solvent, such as 10% DMSO in physiological saline or dispersed in sodium taurocholate micelles, to simulate conditions in the small intestine from where these substances are normally absorbed from the diet. 4-Nitroquinoline oxide (4-NQO) served as the reference standard of a direct acting mutagen. In micellar form, 4-NQO and 25 of the 47 pesticides tested showed significantly higher genotoxic activities than when they were tested in an organic solvent. In micellar form the SOS inducing potency of 4-NQO was almost twice as high as in 10% D
KEYWORDS: Biochemical Studies-General
KEYWORDS: Enzymes-Physiological Studies
KEYWORDS: Metabolism-Proteins
KEYWORDS: Digestive System-General
KEYWORDS: Toxicology-General
KEYWORDS: Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis
KEYWORDS: Genetics of Bacteria and Viruses
KEYWORDS: In Vitro Studies
KEYWORDS: Virology-Animal Host Viruses
KEYWORDS: Pest Control
KEYWORDS: Enterobacteriaceae (1992-)

711. Venkat, J. A., Shami, S., Davis, K., Nayak, M., Plimmer, J. R., Pfeil, R., and Nair, P. P. (95). **Relative Genotoxic Activities of Pesticides Evaluated by a Modified SOS Microplate Assay.** *Environmental and Molecular Mutagenesis* 25 : 67-76.

Chem Codes: Chemical of Concern: SZ,MTL,MOM,ADC,CBF; Rejection Code: BACTERIA.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. The genotoxic activities of 47 pesticides were determined using a modified SOS microplate assay in which the induction of beta-galactosidase in E. coli PQ37 was used as a quantitative measure of genotoxic activity. The results were compared with those obtained with anethole, curcumin, and capsaicin, a few examples of naturally occurring compounds present in foods. The assays were conducted with pesticides dissolved either in a suitable solvent, such as 10% DMSO in physiological saline or dispersed in sodium taurocholate micelles, to simulate conditions in the small intestine from where these substances are normally absorbed from the diet. 4-Nitroquinoline oxide (4-NQO) served as the reference standard of a direct acting mutagen. In micellar form, 4-NQO and 25 of the 47 pesticides tested showed significantly higher genotoxic activities than when they were tested in an organic solvent. In micellar form the SOS inducing potency of 4-NQO was almost twice as high as in 10% D
KEYWORDS: Biochemical Studies-General
KEYWORDS: Enzymes-Physiological Studies
KEYWORDS: Metabolism-Proteins
KEYWORDS: Digestive System-General
KEYWORDS: Toxicology-General

KEYWORDS: Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis
KEYWORDS: Genetics of Bacteria and Viruses
KEYWORDS: In Vitro Studies
KEYWORDS: Virology-Animal Host Viruses
KEYWORDS: Pest Control
KEYWORDS: Enterobacteriaceae (1992-)

712. Villatte, F., Marcel, V., Estrada-Mondaca, S., and Fournier, D. (98). **Engineering sensitive acetylcholinesterase for detection of organophosphate and carbamate insecticides.** *Biosensors & Bioelectronics* 13 : 157-164.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: IN VITRO.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. High quantities of various acetylcholinesterases can now be produced following in vitro expression and it is possible to use them as biosensors to detect organophosphates and carbamates insecticides. In order to check the potentialities of acetylcholinesterase from various sources, we have studied enzyme from bovine erythrocyte, Electrophorus electricus, Drosophila melanogaster, Torpedo californica and Caenorhabditis elegans. It appears that insect acetylcholinesterase is more susceptible to a broad range of organophosphates and carbamates insecticides than the other tested enzymes. D. melanogaster is 8-fold more sensitive than E. electricus enzyme and this sensitivity has been increased to 12-fold by introducing a mutation at position 408.
KEYWORDS: Comparative Biochemistry
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-Bioengineering
KEYWORDS: Enzymes-General and Comparative Studies
KEYWORDS: Enzymes-Methods
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Nematoda
KEYWORDS: Diptera
KEYWORDS: Chondrichthyes
KEYWORDS: Osteichthyes
KEYWORDS: Bovidae

713. Villatte, F., Marcel, V., Estrada-Mondaca, S., and Fournier, D. (98). **Engineering sensitive acetylcholinesterase for detection of organophosphate and carbamate insecticides.** *Biosensors & Bioelectronics* 13 : 157-164.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: IN VITRO.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. High quantities of various acetylcholinesterases can now be produced following in vitro expression and it is possible to use them as biosensors to detect organophosphates and carbamates insecticides. In order to check the potentialities of acetylcholinesterase from various sources, we have studied enzyme from bovine erythrocyte, Electrophorus electricus, Drosophila melanogaster, Torpedo californica and Caenorhabditis elegans. It appears that insect acetylcholinesterase is more susceptible to a broad range of organophosphates and carbamates insecticides than the other tested enzymes. D. melanogaster is 8-fold more sensitive than E. electricus enzyme and this sensitivity has been increased to 12-fold by introducing a mutation at position 408.
KEYWORDS: Comparative Biochemistry
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-Bioengineering
KEYWORDS: Enzymes-General and Comparative Studies
KEYWORDS: Enzymes-Methods
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Nematoda

KEYWORDS: Diptera
KEYWORDS: Chondrichthyes
KEYWORDS: Osteichthyes
KEYWORDS: Bovidae

714. Volmer, D. A. and Hui, J. Pm (98). **Rapid SPME/MS/MS analysis of N-methylcarbamate pesticides in water./METHODS.** *Archives of Environmental Contamination and Toxicology* 35 : 1-7.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: METHODS, NO TOX DATA.
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Public Health: Environmental Health-Sewage Disposal and Sanitary Measures
KEYWORDS: Pest Control

715. Volmer, D. A. and Hui, J. Pm (98). **Rapid SPME/MS/MS analysis of N-methylcarbamate pesticides in water./METHODS.** *Archives of Environmental Contamination and Toxicology* 35 : 1-7.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: METHODS, NO TOX DATA.
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Public Health: Environmental Health-Sewage Disposal and Sanitary Measures
KEYWORDS: Pest Control

716. Von Allmen, J. M., Rottmann, W. H., Gengenbach, B. G., Harvey, A. J., and Lonsdale, D. M. (91). **Transfer of Methomyl and HmT-Toxin Sensitivity from T-Cytoplasm Maize to Tobacco.** *Mol.Gen.Genet.* 229: 405-412.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO QUANTIFIABLE TOXICITY RESULTS.

717. W, H. O. (96). **ENVIRONMENTAL HEALTH CRITERIA 178. METHOMYL.** *Who. Environmental Health Criteria, 178. Methomyl. 150p. Who: Geneva, Switzerland. Isbn 92-4-157178-0.* 178 : 150p.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK INSECTICIDE ANTICHOLINESTERASE ENVIRONMENTAL TOXICITY
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Organisms-Unspecified

718. Wade, H. F. , York, A. C., Morey, A. E., Padmore, J. M., and Rudo, K. M. (98). **The impact of pesticide use on groundwater in North Carolina.** *Journal of Environmental Quality* 27 : 1018-1026.

Chem Codes: Chemical of Concern: SZ,MTL,MOM,ADC,CBF; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. A North Carolina study revealed that certain pesticides have impacted groundwater above health-based standards in vulnerable areas. Ninety-seven shallow, surficial aquifer-monitoring wells were sampled at least twice. Sites for the monitoring wells were chosen based on an evaluation with the Pesticide DRASTIC model and a known record of pesticide use. Where possible, areas of greater risk were intentionally selected. Twenty-three pesticides or pesticide degradates were detected in 26 of the 97 wells. Nine of the pesticides or degradates are no longer registered for use; two of these chemicals, dibromochloropropane and methylene chloride, were found in excess of health-based guidance levels (HBGL) or state groundwater quality standards (GWQS). Of the registered pesticides or their degradates, the herbicides dichlorprop and simazine and the insecticide isomers BHC-alpha and BHC-delta were in excess of HBGL. The

herbicide atrazine was detected at 83% of its GWQS. The U.S.
KEYWORDS: Biophysics-Biocybernetics (1972-)
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Soil Science-Physics and Chemistry (1970-)
KEYWORDS: Pest Control

719. Wade, H. F. , York, A. C., Morey, A. E., Padmore, J. M., and Rudo, K. M. (98). **The impact of pesticide use on groundwater in North Carolina.** *Journal of Environmental Quality* 27 : 1018-1026.

Chem Codes: Chemical of Concern: SZ,MTL,MOM,ADC,CBF; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. A North Carolina study revealed that certain pesticides have impacted groundwater above health-based standards in vulnerable areas. Ninety-seven shallow, surficial aquifer-monitoring wells were sampled at least twice. Sites for the monitoring wells were chosen based on an evaluation with the Pesticide DRASTIC model and a known record of pesticide use. Where possible, areas of greater risk were intentionally selected. Twenty-three pesticides or pesticide degradates were detected in 26 of the 97 wells. Nine of the pesticides or degradates are no longer registered for use; two of these chemicals, dibromochloropropane and methylene chloride, were found in excess of health-based guidance levels (HBGL) or state groundwater quality standards (GWQS). Of the registered pesticides or their degradates, the herbicides dichlorprop and simazine and the insecticide isomers BHC-alpha and BHC-delta were in excess of HBGL. The herbicide atrazine was detected at 83% of its GWQS. The U.S.
KEYWORDS: Biophysics-Biocybernetics (1972-)
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Soil Science-Physics and Chemistry (1970-)
KEYWORDS: Pest Control

720. Wagner, S. L. (97). **DIAGNOSIS AND TREATMENT OF ORGANOPHOSPHATE AND CARBAMATE INTOXICATION.** *Occupational Medicine (Philadelphia)* 12 : 239-249.

Chem Codes: Chemical of Concern: MOM,CBF,ADC; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM LITERATURE REVIEW HUMAN OCCUPATIONAL HEALTH ORGANOPHOSPHATE INSECTICIDE TOXIN PESTICIDE INTOXICATION CARBAMATE TOXICOLOGY PESTICIDES THERAPY PESTICIDE POISONING ATROPINE ANTIDOTE-DRUG PRALIDOXIME ANTIDOTE-DRUG ANTIDOTE COMPLICATIONS PROTOCOL TOXICITY
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-Antidotes and Preventative Toxicology (1972-)
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Occupational Health
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control
KEYWORDS: Hominidae

721. Wagner, S. L. (97). **DIAGNOSIS AND TREATMENT OF ORGANOPHOSPHATE AND CARBAMATE INTOXICATION.** *Occupational Medicine (Philadelphia)* 12 : 239-249.

Chem Codes: Chemical of Concern: MOM,CBF,ADC; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM LITERATURE REVIEW HUMAN OCCUPATIONAL HEALTH ORGANOPHOSPHATE INSECTICIDE TOXIN PESTICIDE INTOXICATION CARBAMATE TOXICOLOGY PESTICIDES THERAPY PESTICIDE POISONING ATROPINE ANTIDOTE-DRUG PRALIDOXIME ANTIDOTE-DRUG ANTIDOTE COMPLICATIONS PROTOCOL TOXICITY
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-Antidotes and Preventative Toxicology (1972-)
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Occupational Health
KEYWORDS: Public Health: Environmental Health-Air

KEYWORDS: Pest Control
KEYWORDS: Hominidae

722. Wagner, S. L. (90). **PESTICIDE ILLNESS SURVEILLANCE REVIEW OF THE NATIONAL PESTICIDE HAZARD ASSESSMENT PROGRAM.** *Technical Workshop of the Conference on Agricultural Occupational and Environmental Health: Policy Strategies for the Future, Iowa City, Iowa, Usa* Des Moines, Iowa, Usa, September 17-30, 1988. Am J Ind Med; 18 : 307-312.

Chem Codes: Chemical of Concern: MOM,CBF,ADC; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM HUMAN NATIONAL PESTICIDE TELECOMMUNICATIONS NETWORK EPA TOXICITY
KEYWORDS: General Biology-Institutions
KEYWORDS: General Biology-Symposia
KEYWORDS: Pathology
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health-Public Health Administration and Statistics
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Public Health: Epidemiology-Organic Diseases and Neoplasms
KEYWORDS: Pest Control
KEYWORDS: Hominidae

723. Wagner, S. L. (90). **PESTICIDE ILLNESS SURVEILLANCE REVIEW OF THE NATIONAL PESTICIDE HAZARD ASSESSMENT PROGRAM.** *Technical Workshop of the Conference on Agricultural Occupational and Environmental Health: Policy Strategies for the Future, Iowa City, Iowa, Usa* Des Moines, Iowa, Usa, September 17-30, 1988. Am J Ind Med; 18 : 307-312.

Chem Codes: Chemical of Concern: MOM,CBF,ADC; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM HUMAN NATIONAL PESTICIDE TELECOMMUNICATIONS NETWORK EPA TOXICITY
KEYWORDS: General Biology-Institutions
KEYWORDS: General Biology-Symposia
KEYWORDS: Pathology
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health-Public Health Administration and Statistics
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Public Health: Epidemiology-Organic Diseases and Neoplasms
KEYWORDS: Pest Control
KEYWORDS: Hominidae

724. Walker, A. E., Holman, R. E., and Leidy, R. B. *. (2000). **ELISA and GC/MS analysis of pesticide residues in North Carolina.** *Journal of the american water resources association [j. Am. Water resour. Assoc.]. Vol. 36, no. 1, pp. 67-74. Feb 2000.*

Chem Codes: MOM,CBF,ADC; Rejection Code: SURVEY.
Abstract: Studies were conducted to analyze the presence of 11 pesticide residues in 12 surface waters in the Piedmont and coastal plain regions of North Carolina. Samples were assayed using enzyme-linked immunosorbent assays (ELISAs). All ELISA results of one part per billion (ppb, mu g/L) or greater were confirmed using gas chromatography/mass spectrometry (GC/MS). ELISA detection limits were approximately an order of magnitude higher than GC/MS methods. Of the 5,035 analytical results from 742 surface water samples, atrazine was detected in approximately 45 percent of the samples, five of which were at or above the Maximum Contaminant Level (MCL) of 3-ppb. Metolachlor was detected in 64 percent of the samples. Aldicarb, 2,4-D, chlorpyrifos, and chlorothalonil were also detected, and each was found in less than 12 percent of the samples. The remaining pesticides, including carbaryl, acetochlor, methomyl, carbofuran, and alachlor, were not detected during the study period.

725. Walker, A. E., Holman, R. E., and Leidy, R. B. *. (2000). **ELISA and GC/MS analysis of pesticide residues**

in North Carolina. *Journal of the american water resources association [j. Am. Water resour. Assoc.]. Vol. 36, no. 1, pp. 67-74. Feb 2000.*

Chem Codes: Chemical of Concern: MOM,CBF,ADC; Rejection Code: SURVEY.
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727. Walker, W. W., Cripe, C. R., Pritchard, P. H., and Bourquin, A. W. (88). **Biological and abiotic degradation of xenobiotic compounds in estaurine water and sediment/water systems.** *Chemosphere* 17: 2255-2270.

Chem Codes: Chemical of Concern: PNB.MOM; Rejection Code: NO TOX DATA.
First-order biotic and abiotic degradation rate constants of 14 pesticides were determined in estuarine water and sediment/water slurry systems. Test systems used environmentally realistic concentrations of pesticides in sterile and nonsterile samples of water and sediment taken directly from the field. Thiobencarb, sulprofos, chlorothalonil, diclofop-methyl, fenthion, oxyfluorfen, methoxychlor, phorate, and trifluralin all showed significantly (p PCNB, however, biodegraded faster in the absence of sediment. EPN and chlorpyrifos were degraded primarily by abiotic processes. Methomyl did not significantly degrade under any test conditions. Oxyfluorfen and chlorpyrifos were also slow to degrade, with half-lives of generally over two weeks in nonsterile sediment. Diclofop-methyl and phorate were the least persistent, with half-lives of a few days or less.
http://www.sciencedirect.com/science/article/B6V74-4888FD6-54/2/7b6efd78b9d615850c97ea1f3ab4c0b3

728. Walker, W. W., Cripe, C. R., Pritchard, P. H., and Bourquin, A. W. (88). **Biological And Abiotic Degradation Of Xenobiotic Compounds In In-Vitro Estuarine Water And Sediment-Water Systems.** 17: 2255-2270.

Chem Codes: Chemical of Concern: CHLOR; Rejection Code: EFFLUENT.
biosis copyright: biol abs. rrm thiobencarb sulprofos chlorothalonil diclofop-methyl fenthion oxyfluorfen methoxychlor phorate trifluralin endosulfan chlorpyrifos methomyl pesticide herbicide fungicide insecticide acaricide ecology/ environmental biology-oceanography and limnology/ ecology/ environmental biology-wildlife management-aquatic/ biochemical studies-general/ metabolism-general metabolism/ metabolic pathways/ toxicology-environmental and industrial toxicology/ public health: environmental health-air, water and soil pollution/ pest control, general/ pesticides/ herbicides

729. Wang, T. C. , Chiou, C. M., and Chang, Y. L. (98). **Genetic toxicity of N-methylcarbamate insecticides and their N-nitroso derivatives.** *Mutagenesis* 13 : 405-408.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: IN VITRO.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. N-Methylcarbamate esters are an important group of insecticides. They have lower acute toxicity to vertebrates than organophosphates, although their genotoxicity his not been adequately studied. Here we investigate the cyotoxicity and genotoxicity of N-methylcarbamate insecticides and their N-nitroso derivatives in **Chinese hamster V79 cells**, using the hprt locus as a marker, and also assess inhibition of gap junctional intercellular communication. N-Methylcarbamate insecticides were chemically N-nitrosated to obtain the N-nitroso derivatives. N-Nitrosation greatly increased the cytotoxicity and mutagenicity of N-methylcarbamates at the hprt locus in Chinese hamster V79 cells. The mutagenic potential of N-nitroso-N-methylcarbamates was much higher than those of many other known mutagenic nitroso compounds, as well as some non-nitroso mutagenic alkylating agents. Parental N-methylcarbamates themselves were not mutagenic, however, they inhibited gap junctional intercellula
KEYWORDS: Genetics and Cytogenetics-Animal
KEYWORDS: Toxicology-General
KEYWORDS: Cricetidae

730. Wang, T. C. , Chiou, C. M., and Chang, Y. L. (98). **Genetic toxicity of N-methylcarbamate insecticides and their N-nitroso derivatives.** *Mutagenesis* 13 : 405-408.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: IN VITRO.
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KEYWORDS: Genetics and Cytogenetics-Animal
KEYWORDS: Toxicology-General
KEYWORDS: Cricetidae

731. Ware, G. W. (91). **REVIEWS OF ENVIRONMENTAL CONTAMINATION AND TOXICOLOGY VOL. 118.** *Ware, G. W. (Ed.). Reviews of Environmental Contamination and Vol. 118. Ix+158p. Springer-Verlag New York Inc.: New York, New Berlin, Germany. Illus. Isbn 0-387-97447-4* Isbn 3-540-97447-4.; 0 : Ix+158p.

Chem Codes: Chemical of Concern: PNB,MTL,MOM,ADC,CBF; Rejection Code: REVIEW.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK PESTICIDES
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control

732. Ware, G. W. (91). **REVIEWS OF ENVIRONMENTAL CONTAMINATION AND TOXICOLOGY VOL. 118.** *Ware, G. W. (Ed.). Reviews of Environmental Contamination and Vol. 118. Ix+158p. Springer-Verlag New York Inc.: New York, New Berlin, Germany. Illus. Isbn 0-387-97447-4* Isbn 3-540-97447-4.; 0 : Ix+158p.

Chem Codes: Chemical of Concern: PNB,MTL,MOM,ADC,CBF; Rejection Code: REVIEW.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK PESTICIDES
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air

KEYWORDS: Pest Control

733. Ware, G. W. , Estesen, B. J., and Buck, N. A. (80). **Dislodgable Insecticide Residues on Cotton Foliage: Acephate, AC 222,705, EPN, Fenvalerate, Methomyl, Methyl Parathion, Permethrin, and Thiodicarb.** *Bulletin of environmental contamination and toxicology [bull. Environ. Contam. Toxicol.]* 25: 608-615.

Chem Codes: Chemical of Concern: MOM; Rejection Code: HUMAN HEALTH.
Abstract: The need continues for establishing safe reentry intervals for persons working in insecticide-treated cotton fields. The compilation and comparison of dislodgable residues of various insecticides may aid in establishing these intervals. BUCK et al. (1980) compared the dislodgable foliar residues of fenvalerate (Pydrin), permethrin (Pounce), sulprofos (Bolstar), chlorpyrifos (Lorsban), methyl parathion, EPN, oxamyl (Vydate), and profenofos (Curacron) on cotton through 96-h post application. This paper extends that series with three separate studies.

734. Weaver, J. E., Hogmire, H. W., Brooks, J. L., and Sencindiver, J. C. (90). **Assessment of pesticide residues in surface and soil water from a commercial apple orchard.** *Appl Agric Res* 5 : 37-43.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. Soil water in the vadose zone and surface runoff water in a commercial apple orchard in an upland area of West Virginia (USA) were assessed for residues of pesticides normally applied for control of diseases, arthropod pests, and vole control. Water in the vadose zone was sampled at depths of 6, 12, 24, and 36 in. (0.15, 0.3, 0.6, and 0.9 m) with suction lysimeters from early spring to midfall for two consecutive years. Endrin was the only pesticide detected; it had been applied to the study site five times during the period of 1974 to 1981. None of the 17 pesticides applied under an Integrated Orchard Management program during this study were detected in water samples. Concentrations of endrin in soil water ranged from 0.1 to 13.2 ppb (mug). About 20% of all soil water samples within the orchard tested positive (\ 0.1 ppb) for this pesticide. Endrin was detected at all depths; however, the frequency of positive samples and levels of residues tended to decrease with dep
KEYWORDS: General Biology-Conservation
KEYWORDS: Biochemical Studies-General
KEYWORDS: Soil Science-Physics and Chemistry (1970-)
KEYWORDS: Soil Science-Fertility and Applied Studies (1970-)
KEYWORDS: Horticulture-Temperate Zone Fruits and Nuts
KEYWORDS: Pest Control
KEYWORDS: Rosaceae

735. Wei, L. Y., Chao, J. S., and Hong, C. C. (96). **CARBAMATE INSECTICIDES PROPOXUR METHOMYL AND ALDICARB INDUCE MICRONUCLEI IN BALB-C MICE AND CHINESE HAMSTER OVARY CELLS.** *27th Annual Scientific Meeting of the Environmental Mutagen Society, Victoria, British Columbia, Canada, March 23-28, 1996. Environmental and Molecular Mutagenesis* 27 : 73.

Chem Codes: Chemical of Concern: MOM,ADC; Rejection Code: ABSTRACT.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM MEETING ABSTRACT GENOTOXICITY CARCINOGENESIS
KEYWORDS: General Biology-Symposia
KEYWORDS: Cytology and Cytochemistry-Animal
KEYWORDS: Genetics and Cytogenetics-Animal
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-General
KEYWORDS: Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis
KEYWORDS: Pest Control
KEYWORDS: Cricetidae
KEYWORDS: Muridae

736. Wei, L. Y., Chao, J. S., and Hong, C. C. (96). **Carbamate Insecticides Propoxur Methomyl and Aldicarb Induce Micronuclei in Balb-C Mice and Chinese Hamster Ovary Cells.** *In: 27th Annu.Sci.Meet.of the*

Environ.Mutagen Soc., Mar.23-28, 1996, Victoria, B.C., Environ.Mol.Mutagen. 73.

Chem Codes: Chemical of Concern: MOM; Rejection Code: ABSTRACT.

737. Wei, L. Y., Chao, J. S., and Hong, C. C. (96). **CARBAMATE INSECTICIDES PROPOXUR METHOMYL AND ALDICARB INDUCE MICRONUCLEI IN BALB-C MICE AND CHINESE HAMSTER OVARY CELLS.** *27th Annual Scientific Meeting of the Environmental Mutagen Society, Victoria, British Columbia, Canada, March 23-28, 1996. Environmental and Molecular Mutagenesis* 27 : 73.

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ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM MEETING ABSTRACT GENOTOXICITY CARCINOGENESIS
KEYWORDS: General Biology-Symposia
KEYWORDS: Cytology and Cytochemistry-Animal
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KEYWORDS: Biochemical Studies-General
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KEYWORDS: Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis
KEYWORDS: Pest Control
KEYWORDS: Cricetidae
KEYWORDS: Muridae

738. Wheeler, W. B., Thompson, N. P., Edelstein, R. L., and Krause, R. T. (81). **Degradation of Methomyl Residues in Frozen Strawberries.** *J.Assoc.Off.Anal.Chem.* 64: 1211-1215.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO CONC.

739. Wheeler, W. B., thompson, N. P., Edelstein, R. L., Littell, C., and Krause, R. T. (82). **Influence of various solvent-water mixtures on the extraction of dieldrin and methomyl residues from radishes.** *Journal of the association of official analytical chemists [j. Assoc. Off. Anal. Chem.]* 65: 1112-1117.

Chem Codes: Chemical of Concern: MOM; Rejection Code: METHODS.
Abstract: The effect of organic solvent/water rations on the extraction of field-incurred residues of dieldrin and methomyl from radishes was determined. Acetone, acetonitrile, and methanol containing 0, 10, 20, 30, 40, and 50% water were used as extraction solvents.

740. White, D. H., Seginak, J. T., and Simpson, R. C. (90). **Survival of Northern Bobwhites in Georgia: Cropland Use and Pesticides.** *Bull.Environ.Contam.Toxicol.* 44: 73-80.

Chem Codes: Chemical of Concern: MOM; Rejection Code: MIXTURE.

741. White, D. H., Seginak, J. T., and Simpson, R. C. (90). **SURVIVAL OF NORTHERN BOBWHITES IN GEORGIA USA CROPLAND USE AND PESTICIDES.** *Bull Environ Contam Toxicol* 44 : 73-80.

Chem Codes: Chemical of Concern: MOM; Rejection Code: MIXTURE.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM COLINUS-VIRGINIANUS BIRD POPULATION DYNAMICS ORGANOPHOSPHORUS CARBAMATE PESTICIDE TOXICITY
KEYWORDS: Ecology
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Pest Control
KEYWORDS: Galliformes

742. White, R. E. and Kookana, R. S. (98). **Measuring nutrient and pesticide movement in soils: Benefits for catchment management.** *Australian Journal of Experimental Agriculture* 38 : 725-743.

Chem Codes: Chemical of Concern: SZ,MTL,MOM,ADC,CBF; Rejection Code: FATE.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. The movement of nutrients, especially NO3- and H2PO4-, and pesticides from soils into receiving waters can pose problems for the management of water quality in catchments. This paper briefly reviews the reactions of these materials in soil, and the processes involved in their transport by water over and through soils in the field. The natural heterogeneity of soils, and fluctuations in the source strength of pesticides and nutrients due to biophysical factors and environmental conditions, have a profound effect on measurements. Preferred techniques are discussed for measuring losses from drained systems (sampled as point sources, which provide an integration of spatial and temporal variability in the areas drained) and undrained systems (sampled as diffuse sources, where the reliability of areal averaging depends on the efficiency of the sampling strategy). Pathways of nitrogen, phosphorus and pesticide movement from soil solution and solid phases under various land use
KEYWORDS: Nutrition-Minerals
KEYWORDS: Soil Science-General
KEYWORDS: Soil Science-Physics and Chemistry (1970-)
KEYWORDS: Soil Science-Fertility and Applied Studies (1970-)
KEYWORDS: Pest Control

743. White, R. E. and Kookana, R. S. (98). **Measuring nutrient and pesticide movement in soils: Benefits for catchment management.** *Australian Journal of Experimental Agriculture* 38 : 725-743.

Chem Codes: Chemical of Concern: SZ,MTL,MOM,ADC,CBF; Rejection Code: FATE.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. The movement of nutrients, especially NO3- and H2PO4-, and pesticides from soils into receiving waters can pose problems for the management of water quality in catchments. This paper briefly reviews the reactions of these materials in soil, and the processes involved in their transport by water over and through soils in the field. The natural heterogeneity of soils, and fluctuations in the source strength of pesticides and nutrients due to biophysical factors and environmental conditions, have a profound effect on measurements. Preferred techniques are discussed for measuring losses from drained systems (sampled as point sources, which provide an integration of spatial and temporal variability in the areas drained) and undrained systems (sampled as diffuse sources, where the reliability of areal averaging depends on the efficiency of the sampling strategy). Pathways of nitrogen, phosphorus and pesticide movement from soil solution and solid phases under various land use
KEYWORDS: Nutrition-Minerals
KEYWORDS: Soil Science-General
KEYWORDS: Soil Science-Physics and Chemistry (1970-)
KEYWORDS: Soil Science-Fertility and Applied Studies (1970-)
KEYWORDS: Pest Control

744. Wigfield, Y. Y., Grant, R., and Snider, N. (93). **Gas chromatographic and mass spectrometric investigation of seven carbamate insecticides and one metabolite.** *Journal of Chromatography A* 657: 219-222.

Chem Codes: MOM,ADC,CBF; Rejection Code: CHEM METHODS.
Eight thermally labile N-methylcarbamates, aldicarb, carbaryl, carbofuran methiocarb, methomyl, oxamyl and propoxur, the active ingredients of insecticides, and 3-hydroxycarbofuran, the metabolite of carbofuran were separated on a gas chromatographic column, detected by a mass spectrometer and confirmed by positive ion electron impact (PIEI) spectra and ammonium positive ion chemical ionization spectra. The characteristic ions suitable for selected ion monitoring using PIEI are presented. The fragmentation patterns of these carbamates demonstrated that thermal degradation has not occurred under the reported conditions.

745. Wigfield, Y. Y., Grant, R., and Snider, N. (93). **Gas chromatographic and mass spectrometric investigation of seven carbamate insecticides and one metabolite.** *Journal of Chromatography A* 657: 219-222.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: CHEM METHODS.
Eight thermally labile N-methylcarbamates, aldicarb, carbaryl, carbofuran methiocarb, methomyl, oxamyl and

propoxur, the active ingredients of insecticides, and 3-hydroxycarbofuran, the metabolite of carbofuran were separated on a gas chromatographic column, detected by a mass spectrometer and confirmed by positive ion electron impact (PIEI) spectra and ammonium positive ion chemical ionization spectra. The characteristic ions suitable for selected ion monitoring using PIEI are presented. The fragmentation patterns of these carbamates demonstrated that thermal degradation has not occurred under the reported conditions.

746. Wigfield, Y. Y., Grant, R., and Snider, N. (93). **Gas chromatographic and mass spectrometric investigation of seven carbamate insecticides and one metabolite.** *Journal of Chromatography A* 657: 219-222.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: CHEM METHODS.
Eight thermally labile N-methylcarbamates, aldicarb, carbaryl, carbofuran methiocarb, methomyl, oxamyl and propoxur, the active ingredients of insecticides, and 3-hydroxycarbofuran, the metabolite of carbofuran were separated on a gas chromatographic column, detected by a mass spectrometer and confirmed by positive ion electron impact (PIEI) spectra and ammonium positive ion chemical ionization spectra. The characteristic ions suitable for selected ion monitoring using PIEI are presented. The fragmentation patterns of these carbamates demonstrated that thermal degradation has not occurred under the reported conditions.

747. Winter, C. K. and Kurtz, P. H. (85). **FACTORS INFLUENCING GRAPE WORKER SUSCEPTIBILITY TO SKIN RASHES.** *Bull Environ Contam Toxicol* 35 : 418-426.

Chem Codes: Chemical of Concern: SZ,MOM; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM HUMAN PESTICIDE CONTACT DERMATITIS
KEYWORDS: Biochemical Studies-General
KEYWORDS: Pathology
KEYWORDS: Integumentary System-Pathology
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Allergy
KEYWORDS: Public Health: Environmental Health-Occupational Health
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Public Health: Epidemiology-Miscellaneous
KEYWORDS: Plant Physiology
KEYWORDS: Pest Control
KEYWORDS: Hominidae

748. Witter, B., Francke, W., and Knauth, H. D. (95). **INVESTIGATIONS ON THE SUPERCRITICAL FLUID EXTRACTION OF SPIKED ORGANIC POLLUTANTS FROM WET SOILS.** *Fresenius' Journal of Analytical Chemistry* 353 : 107-109.

Chem Codes: Chemical of Concern: MOM; Rejection Code: NO SPECIES.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM RESEARCH ARTICLE
NITROGEN-CONTAINING PESTICIDES PHOSPHORUS-CONTAINING PESTICIDES ANALYTICAL METHOD
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Public Health: Environmental Health-Air
KEYWORDS: Soil Science-General
KEYWORDS: Soil Science-Physics and Chemistry (1970-)
KEYWORDS: Pest Control

749. Wojciechowski, J. P., Kaur, P., and Sabharwal, P. S. (82). **Induction of ouabain resistance in V-79 cells by four carbamate pesticides.** *Environmental research [environ. Res.]* 29: 48-53.

Chem Codes: MOM,CBF,ADC; Rejection Code: IN VITRO.

Abstract: The effects of four carbamate pesticides, carbaryl, carbofuran, methomyl, and oxamyl, were tested for their ability to induce an increase in the frequency of ouabain resistance in Chinese hamster V-79 cells. Experiments with and without an exogenous activating system of irradiated Syrian hamster cells were utilized. The results indicate that three of the four carbamate pesticides did not affect the mutation frequency to ouabain resistance. Carbofuran induced a weak mutagenic response in V-79 cells without the activating system. However, in the presence of the activating system the mutation frequency was the same as that in the controls.

750. Wojciechowski, J. P., Kaur, P., and Sabharwal, P. S. (82). **Induction of ouabain resistance in V-79 cells by four carbamate pesticides.** *Environmental research [environ. Res.]* 29: 48-53.

Chem Codes: Chemical of Concern: MOM,CBF,ADC; Rejection Code: IN VITRO.
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751. Wojciechowski, J. P., Kaur, P., and Sabharwal, P. S. (82). **Induction of ouabain resistance in V-79 cells by four carbamate pesticides.** *Environmental research [environ. Res.]* 29: 48-53.

Chem Codes: Chemical of Concern: MOM,CBF,ADC; Rejection Code: IN VITRO.
Abstract: The effects of four carbamate pesticides, carbaryl, carbofuran, methomyl, and oxamyl, were tested for their ability to induce an increase in the frequency of ouabain resistance in Chinese hamster V-79 cells. Experiments with and without an exogenous activating system of irradiated Syrian hamster cells were utilized. The results indicate that three of the four carbamate pesticides did not affect the mutation frequency to ouabain resistance. Carbofuran induced a weak mutagenic response in V-79 cells without the activating system. However, in the presence of the activating system the mutation frequency was the same as that in the controls.

752. Worthing, C. R. (91). **THE PESTICIDE MANUAL A WORLD COMPENDIUM 9TH EDITION.** *Worthing, C. R. (Ed.). The Pesticide Manual: a World Compendium, 9th Edition. Xlvii+1141p. British Crop Protection Council: Farnham, England, Uk. Illus. Isbn 0-948404-42-6.* 0 : Xlvii+1141p.

Chem Codes: Chemical of Concern: SZ,RSM,MTL,MOM,CBF,ADC; Rejection Code: NO TOX DATA.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK INSECT PEST WEED MOLECULAR STRUCTURE NOMENCLATURE TOXICOLOGY BIOLOGICAL CONTROL CHEMICAL ABSTRACTS SERVICE REGISTRY NUMBER
KEYWORDS: General Biology-Taxonomy
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-Molecular Properties and Macromolecules
KEYWORDS: Toxicology-General
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Biological Control
KEYWORDS: Economic Entomology-Integrated Control
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Invertebrata
KEYWORDS: Plantae-Unspecified
KEYWORDS: Insecta-Unspecified

753. Worthing, C. R. (91). **THE PESTICIDE MANUAL A WORLD COMPENDIUM 9TH EDITION.** *Worthing, C. R. (Ed.). The Pesticide Manual: a World Compendium, 9th Edition. Xlvii+1141p. British Crop Protection Council: Farnham, England, Uk. Illus. Isbn 0-948404-42-6.* 0 : Xlvii+1141p.

Chem Codes: Chemical of Concern: SZ,RSM,MTL,MOM,CBF,ADC; Rejection Code: NO TOX DATA.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK INSECT PEST WEED MOLECULAR STRUCTURE NOMENCLATURE TOXICOLOGY BIOLOGICAL CONTROL CHEMICAL ABSTRACTS

SERVICE REGISTRY NUMBER
KEYWORDS: General Biology-Taxonomy
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-Molecular Properties and Macromolecules
KEYWORDS: Toxicology-General
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Biological Control
KEYWORDS: Economic Entomology-Integrated Control
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Invertebrata
KEYWORDS: Plantae-Unspecified
KEYWORDS: Insecta-Unspecified

754. Yess, N. J. (88). **FDA PESTICIDE PROGRAM RESIDUES IN FOODS 1987.** *J Assoc Off Anal Chem* 71 : 156a-174a.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM MONITORING PROGRAMS
KEYWORDS: General Biology-Institutions
KEYWORDS: Food Technology-General
KEYWORDS: Food Technology-Evaluations of Physical and Chemical Properties (1970-)
KEYWORDS: Toxicology-Foods
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Pest Control

755. Yess, N. J. (88). **FDA PESTICIDE PROGRAM RESIDUES IN FOODS 1987.** *J Assoc Off Anal Chem* 71 : 156a-174a.

Chem Codes: Chemical of Concern: MOM,ADC,CBF; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM MONITORING PROGRAMS
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KEYWORDS: Food Technology-Evaluations of Physical and Chemical Properties (1970-)
KEYWORDS: Toxicology-Foods
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Pest Control

756. Yess, N. J. (92). **US FOOD AND DRUG ADMINISTRATION PESTICIDE PROGRAM RESIDUES IN FOODS 1991.** *J Aoac (Assoc Off Anal Chem) Int* 75 : 135a-157a.

Chem Codes: Chemical of Concern: PNB,MOM,CBF,ADC; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM HUMAN INSECTICIDE FUNGICIDE FOOD RESIDUES DIETARY INTAKE ANALYTICAL METHOD FDA USA
KEYWORDS: General Biology-Institutions
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Nutrition-General Studies
KEYWORDS: Nutrition-Pathogenic Diets
KEYWORDS: Food Technology-Evaluations of Physical and Chemical Properties (1970-)
KEYWORDS: Toxicology-Foods
KEYWORDS: Hominidae

757. Yess, N. J. (92). **US FOOD AND DRUG ADMINISTRATION PESTICIDE PROGRAM RESIDUES IN FOODS 1991.** *J Aoac (Assoc Off Anal Chem) Int* 75 : 135a-157a.

Chem Codes: Chemical of Concern: PNB,MOM,CBF,ADC; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM HUMAN INSECTICIDE FUNGICIDE FOOD RESIDUES DIETARY INTAKE ANALYTICAL METHOD FDA USA
KEYWORDS: General Biology-Institutions
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Nutrition-General Studies
KEYWORDS: Nutrition-Pathogenic Diets
KEYWORDS: Food Technology-Evaluations of Physical and Chemical Properties (1970-)
KEYWORDS: Toxicology-Foods
KEYWORDS: Hominidae

758. Yess, N. J. , Gunderson, E. L., and Roy, R. R. (93). **U.S. Food and drug administration monitoring of pesticide residues in infant foods and adult foods eaten by infants/children.** *J Aoac Int* 76 : 492-507.

Chem Codes: Chemical of Concern: SZ,PNB,MOM,CBF,ADC; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. The U.S. Food and Drug Administration uses 3 approaches to monitor pesticide residues in foods: regulatory monitoring, incidence/level monitoring, and the Total Diet Study. The results of monitoring infants foods and adult foods that may be eaten by infants/children under these 3 approaches are presented. Under regulatory monitoring, which is performed to enforce tolerances set by the U.S. Environmental Protection Agency (EPA), during fiscal years 1985-1991, over 10,000 such domestic and imported food samples were collected and analyzed, and under the Total Diet Study, in which pesticide residue intakes are estimated in foods prepared for consumption, the food items in 27 market baskets were analyzed. Under incidence/level monitoring, which is complementary to regulatory monitoring, over 4000 analyses were performed on infant foods and adult foods eaten by children. Fewer than 50 of the 10,000 regulatory samples had violative residues; nearly all of those were residues
KEYWORDS: General Biology-Institutions
KEYWORDS: Biochemical Studies-General
KEYWORDS: Food Technology-General
KEYWORDS: Toxicology-Foods
KEYWORDS: Pediatrics
KEYWORDS: Pest Control
KEYWORDS: Hominidae

759. Yess, N. J. , Gunderson, E. L., and Roy, R. R. (93). **U.S. Food and drug administration monitoring of pesticide residues in infant foods and adult foods eaten by infants/children.** *J Aoac Int* 76 : 492-507.

Chem Codes: Chemical of Concern: SZ,PNB,MOM,CBF,ADC; Rejection Code: HUMAN HEALTH.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. The U.S. Food and Drug Administration uses 3 approaches to monitor pesticide residues in foods: regulatory monitoring, incidence/level monitoring, and the Total Diet Study. The results of monitoring infants foods and adult foods that may be eaten by infants/children under these 3 approaches are presented. Under regulatory monitoring, which is performed to enforce tolerances set by the U.S. Environmental Protection Agency (EPA), during fiscal years 1985-1991, over 10,000 such domestic and imported food samples were collected and analyzed, and under the Total Diet Study, in which pesticide residue intakes are estimated in foods prepared for consumption, the food items in 27 market baskets were analyzed. Under incidence/level monitoring, which is complementary to regulatory monitoring, over 4000 analyses were performed on infant foods and adult foods eaten by children. Fewer than 50 of the 10,000 regulatory samples had violative residues; nearly all of those were residues
KEYWORDS: General Biology-Institutions
KEYWORDS: Biochemical Studies-General
KEYWORDS: Food Technology-General
KEYWORDS: Toxicology-Foods
KEYWORDS: Pediatrics
KEYWORDS: Pest Control
KEYWORDS: Hominidae

760. Young, S. Y. (92). **EVALUATION OF BACILLUS-THURINGIENSIS PRODUCTS FOR CONTROL OF A SOYBEAN LOOPER POPULATION ON SOYBEAN 1989.** *Burditt, A. K. Jr. (Ed.). Insecticide and Acaricide Tests, Vol. 17. Ii+421p. Entomological Society of America: Lanham, Maryland, Usa. Illus. Paper.* 0 : 283.

Chem Codes: Chemical of Concern: MOM; Rejection Code: BIOLOGICAL TOXICANT.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM GLYCINE-MAX PSEUDOPLUSIA-INCLUDENS DIPEL JAVELIN LANNATE ABG-6237 MVP-F EG-2349 AMBUSH INSECTICIDE BIOLOGICAL CONTROL
KEYWORDS: Biochemical Studies-General
KEYWORDS: Agronomy-Forage Crops and Fodder
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Field
KEYWORDS: Economic Entomology-Biological Control
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Invertebrata
KEYWORDS: Leguminosae
KEYWORDS: Lepidoptera

761. Yu, S. J. (88). **Microsomal S-demethylase activity in four lepidopterous insects.** *Pesticide biochemistry and physiology [pestic. Biochem. Physiol.]* 31: 182-186.

Chem Codes: Chemical of Concern: MOM; Rejection Code: IN VITRO.
Abstract: Microsomal S-demethylation in fall armyworm (Spodoptera frugiperda) larvae was examined using 6-methylthiopurine as a model substrate. The S-demethylase system required NADPH for activity and was inhibited by CO and by piperonyl butoxide. The allelochemical indole 3-carbinol significantly induced the enzyme activity. The system metabolized numerous insecticides including carbamates such as methomyl, oxamyl, thiodicarb, and methiocarb and organophosphates such as sulprofos and fenthion and an allelochemical, methanethiol. The enzyme was also active in velvetbean caterpillars, cabbage loopers, and corn earworms.

762. Zabik, M. J., El-Hadidi, M. F., Cash, J. N., Zabik, M. E., and Jones, A. L. (2000Sep). **Reduction of azinphos-methyl, chlorpyrifos, esfenvalerate, and methomyl residues in processed apples.** *J Agric Food Chem 2000 Sep;48(9):4199-203.* 48: 4199-203.

Chem Codes: Chemical of Concern: MOM; Rejection Code: SURVEY.
ABSTRACT: McIntosh, Red Delicious, and Golden Delicious from two years of experimental spray programs using azinphos-methyl, chlorpyrifos, esfenvalerate, and methomyl were processed into frozen apple slices, applesauce, single-strength juice, and juice concentrate. Residue levels were expressed as micrograms per 150 g of apple or the equivalent amount of apple product to calculate the percentage change in these pesticides brought about by processing. Producing single-strength apple juice reduced azinphos-methyl, chlorpyrifos, esfenvalerate, and methomyl residues by 97.6, 100, 97.8, and 78.1%, respectively. Production of applesauce reduced all four compounds by >/=95%. Azinphos-methyl, chlorpyrifos, esfenvalerate, and methomyl residues were reduced in apple slices by 94.1, 85.7, 98.6, and 94.7%, respectively. Processing is shown to be very effective in reducing the levels of these pesticides.

763. Zoun, P. Ef and Spierenburg, T. J. (89). **DETERMINATION OF CHOLINESTERASE-INHIBITING PESTICIDES AND SOME OF THEIR METABOLITES IN CASES OF ANIMAL POISONING USING THIN-LAYER CHROMATOGRAPHY.** *J Chromatogr* 462 : 448-453.

Chem Codes: Chemical of Concern: MOM,CBF,ADC; Rejection Code: METHODS.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM NOTE DOMESTIC ANIMAL CHICKEN BOVINE
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques

KEYWORDS: Enzymes-Physiological Studies
KEYWORDS: Digestive System-General
KEYWORDS: Digestive System-Pathology
KEYWORDS: Toxicology-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Veterinary Science-Pathology
KEYWORDS: Pest Control
KEYWORDS: Parasitology-Veterinary
KEYWORDS: Galliformes
KEYWORDS: Bovidae

764. Zoun, P. Ef and Spierenburg, T. J. (89). **DETERMINATION OF CHOLINESTERASE-INHIBITING PESTICIDES AND SOME OF THEIR METABOLITES IN CASES OF ANIMAL POISONING USING THIN-LAYER CHROMATOGRAPHY.** *J Chromatogr* 462 : 448-453.

Chem Codes: Chemical of Concern: MOM,CBF,ADC; Rejection Code: METHODS.
ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM NOTE DOMESTIC ANIMAL CHICKEN BOVINE
KEYWORDS: Biochemical Methods-General
KEYWORDS: Biochemical Studies-General
KEYWORDS: Biophysics-General Biophysical Techniques
KEYWORDS: Enzymes-Physiological Studies
KEYWORDS: Digestive System-General
KEYWORDS: Digestive System-Pathology
KEYWORDS: Toxicology-General
KEYWORDS: Toxicology-Environmental and Industrial Toxicology
KEYWORDS: Veterinary Science-Pathology
KEYWORDS: Pest Control
KEYWORDS: Parasitology-Veterinary
KEYWORDS: Galliformes
KEYWORDS: Bovidae