PMSD/ISB

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RESIDUE CHEMISTRY BRANCH, HED

DATA REVIEW QUICK FORM

Date: JUL 21 1988

MEMORANDUM

SUBJECT: Petition Review for Establishment of Tolerance(s). Evaluation of Analytical Method(s) and Residue Data.

FROM: Stephanie H. Willett, Chemist
Tolerance Petition Section II
Residue Chemistry Branch
Hazard Evaluation Division, TS-769C

THRU: J. H. Onley, Ph.D., Section Head
Tolerance Petition Section II
Residue Chemistry Branch
Hazard Evaluation Division, TS-769C

TO: Hoyt Jamerson PM 43
Registration Division, TS-767C

and

Toxicology Branch
Hazard Evaluation Division, TS-769C

1. Petition No(s): 8E3641
2. RCB No(s): 3945
3. MRID No(s):
4. Pesticide(s): Diazinon
5. Tolerance Proposal (RACs & Levels): 0.5 ppm on pistachio
6. Petitioner: IR-4 and the Ag. Exp. Station of California

7. Tolerance Expression: O,O-diethyl O-(2-isopropyl-6-methyl-4-pyrimidinyl) phosphorothioate

8. Established Pesticide Tolerances: 40 CFR 180.153 on various commodities at levels ranging from 0.1 to 60 ppm

9. Established Food Additive Tolerances: 21 CFR 193.142 in food handling establishments

10. Established Feed Additive Tolerances: 21 CFR 561.415 in feed handling establishments

11. Is Pesticide a Registration Standard Chemical? (Yes)/No)
If yes, date Guidance Document issued: Residue chemistry chapter August 6, 1986

12. Letter(s) of Authorization (if applicable): from Carolyn B. Bussey of Ciba-Geigy Corporation (3/1/88); authorizes use of all diazinon data submitted by Ciba-Geigy in support of this minor use petition

13. Formulation(s): D·Z·N Diazinon 50W (EPA Reg No. 100-460) and D·Z·N AG 500 (EPA Reg No. 100-461)

14. Inerts Status: all are cleared under 40 CFR 180.1001 (see memoranda of T. McLaughlin 10/18/78 and E. Haberer 2/10/84)

15. Manufacturing Process: adequately described for the purposes of this petition (see memoranda of T. McLaughlin, dated 10/18/78 and E. T. Haberer, dated 2/10/84)

16. Proposed Use(s): Post Harvest or Dormant Spray (Dilute or Concentrate)

For the control of scale insects (Parthenolecanium spp.), mix 1 lb.* D·Z·N diazinon 50W plus 1 gal. of superior type oil per 100 gals. of water and apply as a dilute spray (at the rate of 400 gals. per acre). As a concentrate spray use 4 lbs. D·Z·N diazinon 50w plus 4 gals. of superior type oil per acre (in a minimum of 80 gals. of water per acre). Apply as a single post harvest spray in late October or early November or apply as a dormant spray. Do not make more than one application per year. Do not apply after February 1. Apply by ground equipment only. Apply a maximum of 4 lbs. of D·Z·N diazinon 50W plus 4 gals. of superior type oil per acre.

*1 lb Diazinon 50W = 0.5 lb. a.i.

For the control of scale insects (Parthenolecanium spp.), mix 1 pint* of D·Z·N diazinon AG500 plus 1 gal. of superior type oil per 100 gals. of water and apply as a dilute spray (at the rate of 400 gals. per acre). As a concentrate spray use 4 pints of D·Z·N diazinon AG500 plus 4 gals. of superior type oil per acre (in a minimum of 80 gals. of water per acre). Apply as a single post harvest spray in late October or early November or apply as a dormant spray. Do not make more than one application per year. Do not apply after February 1. Apply by ground equipment only. Apply a maximum of 4 pints of D·Z·N diazinon AG500 plus 4 gals. of superior type oil per acre.

*1 pint Dzn AG500 = 0.5 lb a.i.

17. Plant Metabolism Data on: ~~Spinach, beans, tomatoes, celery~~, Kale

18. Plant Residues Comprised of: diazinon, diazoxon, 2-isopropyl-4-methylpyrimidin-6-ol and hydroxydiazinon

19. Plant Metabolism Data Translatable Here: ~~See~~ See item 17 above.

20. Nature of Plant Metabolism on the Subject RAC(s) of This Petition

(is)/is not adequately defined since a post harvest or dormant use to the pistachio trees is involved.

The Residue of Concern is: parent only, for the purposes of this petition. Additional plant metabolism data are required for the purposes of reregistration (see Reg. Std., 8/6/86, Residue Chemistry Chapter).

21. Animal Metabolism Data on: N/A

22. Animal Residues Comprised of: N/A

23. Animal Metabolism Data Applicable Here: N/A

24. Nature of Animal Metabolism Data is/is not adequately defined. The Residue of Concern is: N/A

25. Analytical Method(s) (Give Reference and/or Brief Description)

Adequate sulfide, phosphorus, pyrimidine, cholinesterase inhibition, GC, and GLC methods are available (see Reg. Std. Residue Chemistry Chapter, 8/6/86). Method IIa(a) in PAM, Vol. II is recommended for regulatory purposes. The method involves extraction of diazinon with petroleum ether. Diazinon is then extracted from the solvent into 48% hydrobromic acid. Boiling of the acid converts diazinon sulfur to hydrogen sulfide which is collected in a zinc acetate solution. The sulfide content is determined spectrophotometrically as methylene blue. Additional clean-up steps are outlined for meats and fats (method IIb) and crops with higher thiol content (method IIc).

26. Has there been a Method Trial? (Yes, No) yes

If yes, provide details: on green sweet peas, hay and forage (PP 232, 1961). See also Reg. Std., residue chemistry chapter.

If no, is a Method Trial needed? N/A

27. Residues Determined by Method(s): parent only

28. Method Validation (RACs/"spike chemical"/fortification level(s)/ recovery range/average recovery):

green peas, hay and forage/Diazinon/0.75 - 15 ppm/ 99-109% (pea), 99-103% (hay), 15-66% (forage)

29. Method Validation (limit of detection and/or sensitivity in ppm):

Parent: 0.01 - 0.03 ppm

Metabolite(s) (specify):

30. Method Validation (state crops and control values reported):

alfalfa and corn leaves - 0.02 ppm

almond hulls and pea forage - 0.03 ppm

31. Adequate Analytical Method(s) (are)/are not Available for Enforcement Purposes.

These Method(s) are located: PAM II, Method II

32. PAM I Multiresidue Methods Data are available for parent pesticide tested via Protocols I II III IV (circle, as applicable). Additional multiresidue test information for parent compound that is needed: N/A

33. PAM I Multiresidue Methods Data are available for metabolite(s) tested via Protocols I II III IV (circle, as applicable). Additional multiresidue test information for metabolite(s) that is needed: N/A

34. Residue Data (RAC(s) and Processed Commodities)

No residue data were submitted. The petitioner reasons that since tolerances for diazinon have been established for the representative crops of the Tree Nuts Group (almond, pecan and English walnut), no residue data should be required on pistachio. The proposed use specifies one post harvest or dormant applications per season (2 lb ai/A max.) and a PHI of about 200 days.

The Registration Standard indicates that the available data are inadequate to support the established tolerance of 0.5 ppm on pecans, almonds & walnuts. Use rates range from 0.5 - 3 lb ai/A. Applications has typically been as multiple applications. PHI's ranged from 0 to 60 days. Residue data are inadequate for most other crop types as well.

35. Frozen Storage Stability Data are/(are not) Available. See Registration Standard

If yes, give RACs/fortification levels/length of storage/recovery range/conditions of storage (°C): _____

36. Regional Registration (is)/is not involved.

If yes, list States in which use is sought: California

If yes, indicate/explain (see 51 FR 11341, 4/2/86 - Policy on Minor Uses) if a bona fide "Minor Use" is involved: Pistachio is a minor crop listed in unit I.A, p 11343. Geographically limited data acceptable.

37. Geographic Representation is/(is not) adequate. If no, list RAC(s) and States from which additional data are needed: pistachio in California (see also # 44)

38. Residues will not exceed proposed tolerance(s) on (commodities)

but may exceed proposed tolerance(s) on (commodities) pistachios

39. Livestock Feeding Studies on (species): N/A. Crop is not an animal feed item.

40. Animal Feeding Levels: N/A

41. Animal Residue Ingestion Levels from Proposed RAC Tolerance(s) N/A Levels (proposed tolerance level x percent in diet): _____ ppm in beef cattle; _____ ppm in dairy cattle/goats; _____ ppm in hogs; _____ ppm in horses; _____ ppm in sheep; _____ ppm in poultry.

42. Livestock Tolerances are Adequate in (species) N/A, but not adequate in N/A.

43. Livestock Tolerances Need to be Established: Yes/No. If yes, species/levels: N/A

44. Other Comments: A comprehensive Data Call-In Notice (DCI) was issued in May 1987. A crop group tolerance on the tree nuts group has not been established (see Reg Std). RCB recommended that pistachio not be included in the tree nut group (see memo of R. Cook dated 2/28/85).

45. Other Considerations: Because both the historical ADI and the current PADI are greatly exceeded by the TMRC from present tolerances, it has been recommended that no additional tolerances be granted for diazinon (see Diazinon cover memo of E. Saito, page 7, dated 5/2/88). Note to PM: See also Addendum to the Residue Chemistry Chapter for Diazinon Registration Standard: Tolerance Assessment System Tolerance Reassessment - 5/27/88.

46. Additional Information Needed: _____

47. Additional Data Needed: 1) Residue Data 2) Storage Stability Data (See also # 49)

48. RECOMMENDATIONS: against the tolerance of 0.5 ppm on pistachios. See #'s 34, 35 and 45.

49. Other Comments Under Recommendations: It may be possible for the petitioner to seek a tolerance at the sensitivity of the enforcement method, but this tolerance must be supported by appropriate residue data and should receive the approval of TB prior to generating residue data (See item 45 above).

50. Compatibility with Codex Tolerances? (Explain)

There are no Codex, Mexican or Canadian limits for diazinon on pistachio. Therefore, no compatibility problems exist.

ATTACHMENT(S): (1) International Residue Limits Status Sheet

(2)

cc: RF, Circ, Reviewer, PP# BE 3641, PMSD/ISB, Reg. Std.-Boodee
TAS-Arne
Approved: J.H. Onley 7/21/88; RDSchmitt RDSchmitt 7/21/88

INTERNATIONAL RESIDUE LIMIT STATUS

CHEMICAL Diazinon

CODEX NO. =Z

CODEX STATUS:

☑ No Codex Proposal Step 6 or above (on pistachio)

Residue(if Step 8): diazinon

Crop(s)	Limit (mg/kg)

PROPOSED U.S. TOLERANCES:

Petition No. 8E3641

RCB Reviewer S. H. Willett 7-6-88

Residue: diazinon* parent only

Crop(s)	Limit (mg/kg)
pistachio	0.5

CANADIAN LIMITS:

☑ No Canadian limit (on pistachio)

Residue: diazinon

Crop(s)	Limit (mg/kg)

MEXICAN LIMITS:

☑ No Mexican limit (on pistachio)

Residue:

Crop(s)	Limit (mg/kg)

NOTES:

* O,O-diethyl O-(2-isopropyl-6-methyl-4-pyrimidinyl) phosphorothioate