

JUN 23 1986

RESIDUE CHEMISTRY BRANCH, HED
PETITION REVIEW QUICK FORM

FROM: Francis D. Griffith, Jr., Chemist *FDG*
Residue Chemistry Branch
Hazard Evaluation Division (TS-769)

THRU: Robert S. Quick, Section Head, TPS-1 *RM*
Residue Chemistry Branch
Hazard Evaluation Division (TS-769)

TO: Hoyt L. Jamerson, PM-43
Registration Division (TS-767)

and

Toxicology Branch
Hazard Evaluation Division (TS-769)

1. Petition No(s): 6E3404; Acces. No. 262422; RCB No. 901
2. Chemical(s): fenvalerate, Pydrin® (insecticide)
3. Tolerance Proposal (RAC's & Levels): Mustard Greens @ 15ppm
4. Petitioner: IR-4 Tech. Committee 9th Ag Exp Stns. of OK and NC
5. Tolerance Expression: Parent only as per 40 CFR 180.379
6. Established Tolerances: 40 CFR 180.379 0.5ppm-10ppm Brassica rac's,
0.0ppm-50ppm other rac's,
and milk & meat 0.3ppm & 1.5ppm; 40 CFR 561.97 1ppm-20ppm various feed items
7. Letter(s) of Authorization (if applicable): Ltr of Apr. 8, 1986,
Shell (E.L. Hobson) to PM-43; general access granted
8. Formulation(s): Pydrin® Insecticide 2,4 E.C. (EPA Reg. No. 201-401)
Emulsible Conc. 2.4 lbs a.i./gal (30% a.i.)
9. Inerts Status: All cleared under 40 CFR 180.1001(c) [Ref
PP#1F2536, M.J. Nelson, Oct. 30, 1981]

10. Manufacturing Process: Discussed in PP# OF 2013 (4/21/78 review by E.L. Gunderson). No residue problem expected from tech. impurities.
11. Proposed Use(s): For control of Cabbage looper, Diamond-back moth, and imported cabbage worm.
With ground equipment apply 0.2 lb a.i./acre/application; Repeat as necessary for control, but not to exceed 1.6 lb a.i./acre/season (8 applications max); PHI is 7 days.
No tank mates proposed.
12. Plant Metabolism Data on: Cotton (6G 1755), apples & lettuce (8E 2024), tomatoes (1F 2367), and soybeans (OF 2375), and wheat (4F 3004)
13. Plant Residues Comprised of: fenvalerate & its photodegrade metabolite not TOX significant (8/21/81, A. Kocialski), 71%-81% of terminal residue on lettuce is parent, degradation is slow.
14. Plant Metabolism Data Translatable Here: All see #12
15. Nature of Plant Metabolism Data (is) is not adequately defined.
The Residue of Concern is: parent fenvalerate (both isomers)
16. Animal Metabolism Data on: N/A, No animal feed items associated with proposed use.

17. Animal Residues Comprised of: N/A

18. Animal Metabolism Data Applicable Here: N/A

19. Nature of Animal Metabolism Data is/is not adequately defined.

The Residue of Concern is: N/A

20. Analytical Methods (reference or brief description): Shell GC method
 "Determination of Pydrin Residues in Crops, Animal Tissues, Soil and Water
 (MMS-R-478-1, Apr 1978)" as amended

25gms blended 3min w/ 200 ml Hex/IPA (3/1) IPA removed by H₂O partitioning
Cleanup by Florisil or HPLC (Spectro Physics 8000, 15cm x 4.6mm, ZORBAX
ODS column, 2ml/min, isocratic, MeOH/H₂O (80/20) Shaeffer UV 770 @ 220nm.
Also cleanup of 1gm through BUNDELUT(Si) w/ Hex/EtOAc

instruments: 63N⁺EC on Varian 3700 or HP 5840 or HP 5880

columns: 25M x 37mm (ID) WCOT glass cap w/ SE 30 or 3% OV-101, 1/2" x 4mm (id);
1.6M x 2mm (id), glass 3% Dexsil 300 or 80/100 mesh, Gas Chrom Q.

Quant. by Std Curve for Varian; Peak Area Summation Intergration w/ HP computer for 5840 and 5880

21. Method Validation (crop recoveries): Mustard Greens: 0.05ppm - 76% to 101%
5.0ppm - 93%

No Recovery data at 10, 15, and 20ppm; Recovery data needed to validate data w/ this procedure.
Cabbage pydrin recovery 0.05-1.0ppm @ 77% to 129%; Spinach pydrin rec. 0.05-1.0ppm @ 84% to 107%;
Broccoli and Cauliflower pydrin recovery 0.05-1ppm @ 95% to 99%; Collard pydrin rec. 0.1-5ppm 82% to 120%

22. Method Validation (control values): 0.01ppm - 0.04ppm, L.D. is 0.01ppm
Sufficient GC chromatograms to verify data.

23. Residues Determined by Method: Parent compound, fenvalerate (both isomers)

24. Enforcement Methodology (is) is not available.

Two methods in PAM-II as of 12/82, successful mto (PP# 7F2013, JH. only, 7/
PAM-I using Luke or MOG also available w/ Florisil cleanup, 63N⁺EC-GC,
and OV-101 column.

25. Residue Data (crop and residue range (ppm) from Proposed Use):

4 trials, 3 states, CA, WI, Ga (2); 1982-83 crop years
 Crop: Mustard Greens: 7 day PHI, max ppm 13 (CA), 511 (WI), 12.4 GA, 22 samples, 6 cont

Crop: Turnip Greens: 5 trials, 1x rate, 16 ppm max in CA trial

7 day PHI @ 2.5x 4.8 ppm
 Crop: Collards: GA, VA, MD, 4/5 applications @ 0.2 lb/acre; 5.6 ppm GA and 2.7 ppm MD

OK, NJ, DE, 1x rate, 7 Appl, 7 day PHI
 Crop: Spinach: TX, CA, CO, max pydrin 6.9 ppm to 28 ppm

OR, CA, AZ, TX; 8 applications, 0.2 lb a.i./Ac/appl, ground equip
 Crop: Broccoli: 3 day PHI 0.4 to 1.5 ppm 2x rate, 3 day PHI 0.57 to 4.2 ppm

FL, SC, WI, 1480 crop year 3 day PHI, 1x rate 0.2 ppm to 4.3 ppm
 Crop: Cabbage: CA, AZ, NY 2x rate, 1.25 ppm to 16.6 ppm

Other Comments: Since Mustard Greens is a representative commodity for a crop group and other representative commodities already have pydrin tolerances, additional field trial data is appropriate to support this petition. Spinach and Turnip top pydrin residue data raise concerns that additional pydrin residue data are needed for leafy vegetables.

26. Residues will not exceed proposed tolerance on (commodities)

and may exceed proposed tolerance on (commodities) Mustard Greens.

27. Livestock Feeding Studies on (species): N/A

28. Animal Feeding Levels: N/A

29. Animal Residue Ingestion Levels from Proposed Crop Tolerance

N/A Levels (proposed tol. level x % in diet): _____ ppm in beef cattle; _____ ppm in dairy cattle/goats; _____ ppm in hogs; _____ ppm in horses; _____ ppm in sheep; _____ ppm in poultry.

30. Livestock Tolerances are Adequate in (species) cattle, goats, hogs
horses, 1/2 sheep, but not adequate in _____
meat, mby, fat @ 1.5 ppm; milk @ 0.3 ppm

31. Livestock Tolerances Need to be Established: yes (no) If yes
(species/levels): _____

32. Other Comments: Storage Stability Data: - Mustard Greens fortified at 0.1ppm and 0.5ppm, 2-4 weeks frozen, 80%-129% recovery;
(See PP# 4E2974) Collards fortified @ 5ppm, 8 1/2 months at -10°C, Rec
is 79% (60% to 103% rec.) adequate storage stability data

33. Other Considerations: Residue data not needed from mustard seeds.
Seeds from B. Alba and B. nigra are used
for mustard seeds and table mustard,
All mustard greens grown commercially or in home gardens are from
B. juncea (See Fruit & Vegetable Facts and Points; Mustard Greens, pg 1, Sept 1970).
Brassica juncea varieties used in this petition were Florida Broadleaf
and Southern Curled.

34. Additional Data Needed: Additional field trial data needed. Suggested
pydrin on mustard greens residue data be from AZ/TX, OH/IN,
FL, TN/LA

35. Recommendations: Not recommended for reason cited in
34, #25, and #21

36. Other Comments under Recommendations: Can not recommend for crop group
tolerance of pydrin on Brassica (Cole)
leafy vegetables, at this time, as there is more than a 5X difference
between the pydrin broccoli tolerance (2ppm) and the proposed
mustard green pydrin tolerance (15ppm). (See 40 CFR 180.34[f][5])
Residues may exceed proposed tolerances on spinach and turnip tops in copending
petitions.

37. Compatibility with Codex Tolerances: not compatible
US objects to Codex 2ppm level
No Canadian or Mexican pydrin on mustard green tolerances.

cc: RF, Circ, Reviewer, Thompson, TOX, EEB, EAB, FDA, PP# 6E3404, PMSD/E
Approved: Quick R/I RM 6/19/86; Schmitt AD 6/20/86

Attachment: T + + + 1 0 1 1 + + + 1 +

CHEMICAL Fenvalerate (Pydrin®)

PETITION NO 6E 3404

6/10/86

CCPR NO. 119

Codex Status

☐ No Codex Proposal
Step 6 or above

Residue (if Step 9): _____

fenvalerate

Crop(s) Limit (mg/kg)

Brassica leafy
vegetables (except
headed cabbage) 2 ppm

CANADIAN LIMIT

Residue: _____

Crop Limit (ppm)

none (on mustard greens)

Proposed U. S. Tolerances

40 CFR 180.379

Residue: Fenvalerate *

Crop(s) Tol. (ppm)

Mustard Greens 15

MEXICAN TOLERANCIA

Residue: _____

Crop Tolerancia (ppm)

none

Notes: * Cyano (3-phenoxyphenyl) methyl-4-chloro-alpha-
(methyl ethyl) benzene acetate