

Reading

JUL 1 1986

RESIDUE CHEMISTRY BRANCH, HED
PETITION REVIEW QUICK FORM

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

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

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

and

Toxicology Branch
Hazard Evaluation Division (TS-769)

1. Petition No(s): 6E3413; Acces No. 262866; RCB No 959,
2. Chemical(s): fenvalerate, Pydrin[®] (insecticide)
3. Tolerance Proposal (RAC's & Levels): Pigeon Peas @ 5ppm
Regional Registration - Puerto Rico.
4. Petitioner: IR-4 Tech. Committee 2nd Ag Exp. Stn of Puerto Rico
5. Tolerance Expression: Parent only as per 40 CFR 180.379.
6. Established Tolerances: 40 CFR 180.379; Peas 1.0ppm, Dried Beans 0.25ppm
0.02ppm - 50ppm other rac's
milk & meat @ 0.3ppm - 1.5ppm; 40 CFR 561.97 1ppm - 20ppm various feed items
7. Letter of Authorization (if applicable): ltr of Apr 21, 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#IF 2536, M.J. Nelson, Oct. 31, 1981].

10. Manufacturing Process: Discussed in PP# OF 2013 (4/21/78 review by E.L. Gunderson). No residue problem from tech. impurities.
11. Proposed Use(s): For control of leafhoppers and pod borers in Puerto Rico only [Regional Reg.].
Apply 0.05-0.2 lb. a.i./acre/appl; start spray at flowering or when insects appear; repeat weekly for 3 weeks; not to exceed 0.4 lb a.i./acre/season; PHI 3 day [also see PP# 2F2626, succ. Peas].
Limitations: Do not feed livestock treated pea vines or forage. Cannery waste may be fed. ^{we have} No objection to cannery waste being fed livestock.
- Need either label restriction on aerial application of Pydrin® on pigeon peas or Pydrin® on pigeon peas residue data via aerial application.
12. Plant Metabolism Data on: Cotton (6G1755), apples and lettuce (8E2024), tomatoes (1F2361), soybeans (OF2375), and wheat (4F3004).
13. Plant Residues Comprised of: Fenvalerate and its photodegrade, Metabolite not TOX significant (8/24/81, A. Kocialski).
90-94% terminal residue on tomatoes is parent; 80% of applied present at 32-48 days PHI.
14. Plant Metabolism Data Translatable Here: All, see #12
15. Nature of Plant Metabolism Data (is) adequately defined.
 The Residue of Concern is: Parent fenvalerate (both isomers).
16. Animal Metabolism Data on: rats, ruminants (OF2367), and poultry (2F2657). While pigeon peas are not an established feed item (see Table II of Residue Chem. Guidelines) RCB recognizes their potential to become a feed item.

In cattle parent compound plus 3

17. Animal Residues Comprised of: metabolite from ester cleavage and hydroxylation; metabolites not Tox significant (Ibid). In poultry fat and egg yolks majority is parent, but majority of residue in poultry liver no id.

18. Animal Metabolism Data Applicable Here: All, see #16

19. Nature of Animal Metabolism Data defined in ruminants and is not adequately defined in poultry. The Residue of Concern is: Parent Pesticide (both isomers) in ruminants.

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 78)" as amended.

25gms blended 5min 2x200mls Hex; Hex dried over anh. Na₂SO₄, roto evap. to 5ml, then back to 10.0ml for GC.

Instrument: HP 5840 GC w/⁶³Ni EC; glass column 1.6m x 4mm (id) packed with 3% Dexil 300, 80/100 mesh, Gas Chrom Q @ 200°C, Ar/CH₄ (5/95) @ 58ml,

Quant. by peak height summation using Perp. drop to baseline from valley to valley w/ std. curve,

21. Method Validation (crop recoveries): Pigeon Peas ³l Pods, spiked @ 0.1-0.5ppm
→ w/ 90-112% rec.; no pydrin recovery at proposed tolerance (5ppm),

Pea pydrin rec. 0.05-1.0ppm @ 76%-123%, $\bar{x}$ = 100%; Collard pydrin rec. 0.1-5ppm @ 82% to 120%
Additional Pydrin recovery data requested along with additional residue studies (see #26).

22. Method Validation (control values): 0.0001ppm claimed;
0.002 to 0.01ppm is REB determination.

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

24. Enforcement Methodology (is) available.

Two method in PAM-II, as of 12/82; successful mto (PP# 7F-2013, J, only, 7/24/78,
PAM-I using Luke or MOG also available w/ florisil cleanup, ⁶³Ni EC-GC,
and OV-101 column,

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

Crop: Pigeon Peas; 1984 crop year; 1 trial PR @ 1X proposed use rate; Shelled
pigeon Peas < 0.01 ppm at all PHI's; Pigeon Pea Pods 3.35-4.55 ppm @ 3 day PHI;
1.40-1.85 ppm @ 11 day PHI, and 1.10 ppm - 1.45 ppm @ 14 day PHI

(2F2626) Crop: Succ. Peas: 1980 crop year, 6 trials ^{CO (2), OR, PE}
SC, WA; max residue 0.9 ppm
max pydrin in peas from 2X rate @ 1.17 ppm.

Other Comments: Additional field trial data needed as RCB has concerns
of 5X difference in residues in succ. peas and pigeon peas from
same use. ∴ we cannot translate pea data to pigeon peas.

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

Judgement deferred; additional data needed for pigeon peas in pods.
 and will exceed proposed tolerance on (commodities) _____

27. Livestock Feeding Studies on (species): Poultry and dairy cattle

28. Animal Feeding Levels: Poultry @ 158 ppm - 5 days w/ 0.97-1.3 ppm in yolks and
< .02 ppm in whites. Dairy cows @ 10.9 ppm - 28 days w/ < .1 ppm in milk

29. Animal Residue Ingestion Levels from Proposed Crop Tolerance
N/A; Levels (proposed tol. level x % in diet): _____ ppm in
See #16 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) _____
 _____, but not adequate in _____
N/A for this petition

31. Livestock Tolerances Need to be Established: yes/no. If yes (species/levels): N/A for this petition
32. Other Comments: Storage Stability Data: fortified at 0.1-0.5 ppm pydrin; frozen 2 1/2 months; pydrin in pigeon peas - 40-65% rec; and in pods - 98-125% rec. Pydrin in Cottonseed; 99 weeks @ -20°C $\bar{x}$ = 79% rec; Apples and Al Falta, 21 months @ -10°C, no loss pydrin; also see PP# 6E3404: adequate storage stability data
33. Other Considerations: _____
34. Additional Data Needed: Additional field trial data at proposed use within area of proposed regional registration. Since rac is pigeon peas in pod, need pydrin residue data for pigeon peas in pods
35. Recommendations: Not recommended for reasons cited in #11, 21, and 25/34.
36. Other Comments under Recommendations: _____
37. Compatibility with Codex Tolerances: No Canadian, Mexican, or Codex pydrin tolerances on pigeon peas.

cc: RF, Circ, Reviewer, Thompson, TOX, EEB, EFB, FDA, PP# 6E3413
 Approved: Quick R/ERSQ 6/30/86; Schmitt ROJ 7/1/86

Attachment: International Residue Limit Status Sheet

CHEMICAL Fenvalerate (Pydrin®)

CCPR NO. 119

PETITION NO 6 E 3413

6/18/86

J. Does 6/19/86

Codex Status

☐ No Codex Proposal
Step 6 or above

Proposed U. S. Tolerances

40 CFR 180.379

Residue (if Step 9):

fenvalerate

Residue: Fenvalerate *

Crop(s) Limit (mg/kg)

none (on pigeon peas)

Crop(s) Tol. (ppm)

pigeon Peas 5.0

CANADIAN LIMIT

Residue:

MEXICAN TOLERANCIA

Residue:

Crop Limit (ppm)

none (on pigeon peas)

Crop Tolerancia (ppm)

none

Notes: * Cyano (3-phenoxyphenyl)methyl-4-chloro-2-(methyl ethyl) benzene
if there is a 0.1 ppm limit on peas (without pod) at step 3 of the Codex procedure
† Pison spp; vigna spp.