

Shaughnessy No.: 109301

Date Out of EFGWB: JUN - 2 1989

To: George LaRocca
Product Manager #15
Insecticide- Rodenticide Branch
Registration Division (H7505C)

From: Emil Regelman, Supervisory Chemist
Chemistry Review Section #2
Environmental Fate & Ground Water Branch (H7507C)

Thru: Henry Jacoby, Acting Chief
Environmental Fate & Ground Water Branch
Environmental Fate & Effects Division (H7507C)

Attached, please find the EFGWB review of...

Reg./File # : 352-515

Common Name : fenvalerate

Type Product : Insecticide

Product Name : Asana® XL insecticide 0.66 EC

Company Name : E. I. duPont de Nemours and Company

Purpose : Review whether an amended label language is consistent with the
existing root crops rotational restriction following fenvalerate
use placed by the Agency.

Date Received: 2/22/89

Action Code(s): 305

Date Completed: 5/2/89

EFGWB #(s) : 80370

Total Reviewing Time: (decimal days) : 0.7 day

Deferrals to: _____ Ecological Effects Branch, EFED

_____ Science Integration & Policy Staff, EFED

_____ Non-Dietary Exposure Branch, HED

☒ Dietary Exposure Branch, HED

☒ Toxicology Branch-IR Support, HED

1. CHEMICAL: Common name(s):

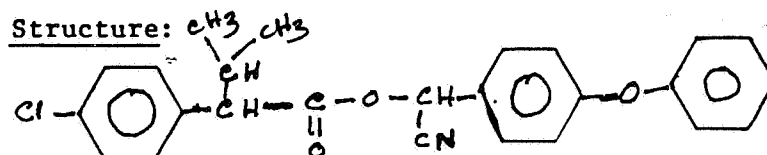
Fenvalerate

Chemical name:

Cyano (3-phenoxyphenyl) methyl 4-chloro-~~α~~-
(1-methylethyl) benzeneacetate

Trade name(s):

Asana® XL, Pydrin®, Belmark, Fenkill, Sanmarton, Sumicidin,
Sumifly, and Sumipower.



Formulations:

G, Impr, EC, SC, RTU, and PrL.

Physical/Chemical properties:

Molecular formula: C₂₅H₂₂ClNO₃
Molecular weight: 419.9
Physical state: Clear viscous yellow or brown liquid
at 23°C; mild chemical odor
Vapor pressure: 1.1 x 10⁻⁸ mm Hg at 25°C
Density: 1.17 g/ml at 20°C
Solubility: in water, <1 mg/L at 20°C;
in acetone, chloroform, cyclohexane,
ethanol, and xylene, >1 kg/kg;
in hexane, 155 g/kg at 23°C.
Stability: Stable to heat, moisture and sunlight;
More stable in acid (pH 4) than alkaline.

2. TEST MATERIAL:

N/A.

3. STUDY/ACTION TYPE:

Review the amended label [EPA Reg. No. 352-515 (305-8-240536)] re a 12
month crop rotation restriction against planting root crops except those
on the label approved by the Agency.

4. STUDY IDENTIFICATION:

N/A.

5. REVIEWED BY:

Padma Datta, Ph.D.
Chemist
Chemistry Review Section #2
EFGWB/HED/OPP

Signature: PKDatta

Date: 5/22/89

6. APPROVED BY:

Emil Regelman
Supervisory Chemist
Chemistry Review Section #2
EFGWB/HED/OPP

Signature: ERegelman

Date: JUN - 2 1989

7. CONCLUSIONS:

EFGWB has completed its review of the status of the rotational crop data requirement, and has drawn the following conclusions:

1. A data gap still exists for root crops;
2. In 1984, EAB (now EFGWB) waived the rotational crop data requirement for small grains and leafy vegetables;
3. In a discussion with DEB and TB on 5/2/89 EFGWB was informed that they no longer had any concerns about any of the known degradates of Fenvalerate in food or feed, and that the parent compound was adequately covered under existing tolerances.

8. RECOMMENDATIONS:

EFGWB defers this matter to DEB/TB for their concurrence. If these groups concur, EFGWB will consider the final outstanding issues related to the Rotational Crop data requirement to be satisfied.

9. BACKGROUND:

On 2/7/89, E. I. duPont de Nemours & Co., Inc., requested Agency approval of the language in an amended label which clarifies the existing 12-month crop restriction on rotational root crops following Asana® XL use. The Agency had a 12-month crop rotation restriction against planting beets because the residues were inadequately identified. (For details, see EAB review #6774, 8/26/86)

10. DISCUSSION OF INDIVIDUAL TESTS OR STUDIES:

N/A.

11. COMPLETION OF ONE-LINER:

See attached one-liner.

12. CBI APPENDIX:

N/A.

EXPOSURE ASSESSMENT BRANCH
PESTICIDE ENVIRONMENTAL FATE ONE-LINER

01/01/84

FENVALERATE

File No.: 109301 CAS No.: 51630-58-1
Type Pesticide INSECTICIDE
Chemical Name: CYANO-[3-PENOXYPHENYL)METHYL-4-CHLORO-
-a-(1-METHYLETHYL) BENZENEACETATE
Empirical Form.: C₂₄H₂₁NO₂Cl
Uses:
Form. Type:

Mole Wt.	Sol. @20C (ppm)	Vap.Pres.(torr)	Log Kow	Henry
419.9	20.00	1.1E-8	0.00	

Hydrolysis (161-1)

pH 5: >93 HR **

pH 7: >93 HR **

pH 9: >93 HR **

Photolysis (161-2, -3, -4)

Air:

Soil:<21 DA #

Water:28 DA W/ 2%ACETONE **

Mobility Studies (163-1)

Soil Partition (Kd)

1

2

3

4

5

Rf Factors

Soil Metabolism Studies - Terrestrial

Aerobic (162-1)

1 65-240 DA (SOIL?)

2

3

4

5

6

7

Anaerobic (162-2)

180 DA

Soil Metabolism Studies - Aquatic

Aerobic (162-4)

1

2

3

4

Anaerobic (162-3)

Field Dissipation Studies

Terrestrial (164-1)

1 1-2 MO; ALL IN 0-4" **

2

3

4

5

6

Aquatic 164-2)

** EPA Acceptable Study

Supplemental (Scientifically Sound) Information

4

FENVALERATE

Field Dissipation Studies

Forest (164-3)

Other (164-5)

- 1
- 2

Ground Water Findings

- 1
- 2
- 3

Rotational Crop Restrictions (165-1, -2)

- 1 12 MO ROOT CROPS, 9 MO OTHERS
- 2

Fish Accumulation Studies (165-4)

- 1 TROUT EDIBLE '400X; 40-60% RESIDUES RETAINED
- 2 CATFISH EDIBLE 62X; 46 DA DEPURATION T_{1/2}

Degradation Products

- 1
- 2
- 3
- 4
- 5

Notes

FENVALERATE (PYDRIN)

Pydrin is considered immobile in soils especially loams.
Pydrin is stable to hydrolysis.

Major degradation products are benzenecetic acid, 4-chloro-a-(1-methyl-ethyl), (amino-carbonyl)-(3-phenoxyphenyl)methyl ester and benzoic acid. Further mineralization to CO₂ occurs.

Field monitoring study indicated that compound is strongly sorbed to soil surface and subject to runoff from treated areas with soil particles.

References

EAB FILES

Writer

5