UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

29 AUG 1984

MEMORANDUM

TO: Dennis Edwards, PMT-12
Insecticide/Rodenticide Branch
Registration Division (TS-767)

THRU: Clayton Bushong, Chief
Ecological Effects Branch
Hazard Evaluation Division

SUBJECT: Registration Standard for amitraz - nontarget insect studies

Attached is EEB's complete review of the nontarget insect studies received under the Registration Standard for amitraz. Attached material includes DER's, topical summary, disciplinary review, and data table.

Allen W. Vaughan
Entomologist
Ecological Effects Branch

cc: H. Craven (EEB/HED)
J. Heckman (OD/HED)
J. Tice (SIS/HED)

Amitraz Registration Standard - Nontarget Insects

Effects on Beneficial Insects

The following studies received full review under this topic:

Author	ID
Palmer-Jones and Clinch	00030455
Atkins and Kellum	00074486

Studies are outlined in Table 1.

Table 1. Toxicity studies on beneficial insects with amitraz

Species	Formulation	Results	Author	Date	MRID #
Honey bee	Technical	Not toxic at 100 micrograms per bee	Atkins & Kellum	1980	00074486
Honey bee	20% EC	No mortality or repellency in field test	Palmer-Jones & Clinch	1973	00030455

There is sufficient information to characterize amitraz as low in toxicity to honey bees.

Amitraz Registration Standard - Nontarget Insects

Effects on Nontarget Soil Surface Invertebrates

The following studies received full review under this topic:

Author	ID
Bender & Asquith	00052490
Colburn & Asquith	00059461

Studies are outlined in Table 1.

Table 1. Toxicity studies on nontarget soil+surface invertebrates with amitraz

Species	Formulation	Results	Author	Date	MRID #
Ladybird beetle (Stethorus punctum)	20 EC	Low toxicity at .375 lb AI per 100 gal.	Colburn & Asquith	1973	00059461
S. punctum	20 EC	Low toxicity at 6 oz. AI per 100 gal.	Bender & Asquith	1972	00052490

There is sufficient information to characterize amitraz as low in toxicity to the predaceous ladybird beetle, Stethorus punctum.

Amitraz Registration Standard - Nontarget Insects

The following studies received abbreviated reviews:

Author	ID
Wakerley	00030457
Weighton	00030458
Kerry & Weighton	00041726
Atkins	00052489
Atkins et al.	00080871

Amitraz Registration Standard - Nontarget Insects

Statements for Disciplinary Review

Effects of amitraz on beneficial insects

Amitraz was shown to be relatively non-toxic to honey bees in a laboratory study (Atkins and Kellum 1980) and in a field study (Palmer-Jones and Clinch 1973).

Effects of amitraz on non-target soil and surface invertebrates

Amitraz was shown to be low in toxicity to predaceous ladybird beetle (Stethorus punctum) in two laboratory studies (Bender and Asquith 1972, Colburn and Asquith 1973.)

References (for Disciplinary Review)

Atkins, E.L.; Kellum, D. (1980) Effect of Pesticides on Apiculture: Maximizing the Effectiveness of Honey Bees as Pollinators: Project No. 1499. 1980 annual rept. (Unpublished study received Jun 8, 1981 under 241-259; prepared by Univ. of California--Riverside, Citrus Research Center and Agricultural Experiment Station, Dept. of Entomology, submitted by American Cyanamid Co., Princeton, N.J.; CDL: 070148-G) FICHE/MASTER ID 00074486

Bender, E., Asquith, D. (1972) Toxicity Studies on Beetles, Unpublished study received June 24, 1976 under 6F1817; prepared by American Cyanamid Co. in cooperation with Pennsylvania State Univ., Fruit Research Lab., Submitted by Upjohn Co., Kalamazoo, Mich.; CDL: 096412-G) FICHE/MASTER ID 00052490

Colburn, R.; Asquith, D. (1973) Tolerance of Stethorus punctum adults and larvae to various pesticides. Journal of Economic Entomology 66:961-962. (Also "In" unpublished submission received August 19, 1976 under 8340-EX-3; submitted by American Hoechst Corp., Somerville, N.J.; CDL: 095253-AL) FICHE/MASTER ID 00059461

Palmer-Jones, T.; Clinch, P.G. (1973) Effect on honey bees of BTS 27419 applied as a spray to apple trees. New Zealand Journal of Experimental Agriculture 1(?): 195-196. (Also "In" unpublished submission received Apr. 9, 1980 under 43142-EX-1; submitted by Boots Hercules Agrochemicals Co., Wilmington, Del.; CDL: 099369-N) FICHE/MASTER ID 00030455

TABLE A
GENERIC DATA REQUIREMENTS FOR AMITRAZ

Data Requirement	Composition 1/	Use Pattern 2/	Does EPA Have Data To Satisfy This Requirement? (Yes No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA Section 3(c)(2)(B)? 3/
§158.155 Nontarget Insect					
NONTARGET INSECT TESTING - POLLINATORS:					
141-1 - Honey bee acute contact LD_{50}	TGAI	A	Yes	00074486	No
141-2 - Honey Bee - toxicity of residues on foliage	TEP	A	No	_____	No 4/
141-4 - Honey bee subacute feeding study	[Reserved] 5/				
141-5 - Field testing for pollinators	TEP	A	No	_____	No 4/

1/ Composition: TGAI = Technical gradde of the acitve ingredient, TEP = Typical end-use product.
2/ The use patterns are coded as follows: A=Terreestrial, Food Crop; B=Terrestrial, Non-Food; C=Aquatic, Food Crop: D=Aquatic, Non-Food; E=Greenhouse, Food Crop; F=Greenhouse, Non-Food; G=Forestry; H=Domestic Outdoor; I=Indoor.
3/ Data must be submitted no later than _____.
4/ As data from the acute contact study indicate low toxicity, no further testing is required.
5/ Reserved pending development of test methodology.
6/ Reserved pending Agency decision as to whether the data requirement should be established

TABLE A
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Data Requirement	Composition 1/	Use Pattern 2/	Does EPA Have Data To Satisfy This Requirement? (Yes No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA Section 3(c)(2)(B)? 3/
§158.155 Nontarget Insect (continued)					
NONTARGET INSECT TESTING - AQUATIC INSECTS:					
142-1 - Acute toxicity to aquatic insects	[Reserved] 6/				
142-2 - Aquatic insect life-cycle study	[Reserved] 6/				
142-3 - Simulated or actual field testing for aquatic insects	[Reserved] 6/				
143-1 - thru NONTARGET INSECT TESTING- PREDATORS AND PARASITES	[Reserved] 6/				