PMSD #1 SB

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

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

8/17/89

Memorandum

Subject: 89-HI-04, 89-HI-05, 89-HI-08. Section 18 Crisis Exemption and Section 18 Quarantine Exemption for the Use of and Diazinon (Clean Corp Diazinon AG500, EPA Reg. No. 34704-41 or Prentox Diazinon Ag500, EPA Reg. No. 655-459) No Accession Number / No MRID Number DEB #s 5572, 5573, and 5652.

From: Jane S. Smith, Chemist
Special Registration Section I
Dietary Exposure Branch
Health Effects Division (H-7509C)

Thru: Andrew Rathman, Section Head
Dietary Exposure Branch
Health Effects Division (H-7509C)

To: R. Forrest PM Team 41
Registration Support and Emergency Response Branch
Registration Division (H-7505C)

The Hawaii Department of Agriculture requests a Crisis exemption and Quarantine Exemption for the use of and Diazinon (Clean Corp Diazinon AG500, EPA Reg. No. 34704-41 or Prentox Diazinon Ag500, EPA Reg. No. 655-459) on banana plants to control the aphid vector for bunchy top virus. Originally the requests included the use of chlorpyrifos (Lorsban 4E, 4 lbs a.i./gallon, EPA Reg. No. 464-448); however, in a Fonecon on 8/7/89 with Bob Boesch of the Hawaii Department of Agriculture, the use of chlorpyrifos was withdrawn due to unavailability. The PHI for chlorpyrifos was also too long (3 weeks). Only the use of Diazinon will be addressed for these Section 18s.

Tolerances are established (40 CFR 180.153) for residues of the insecticide diazinon (O, O-diethyl O-[6-methyl-2-(1-methylethyl)-4-pyrimidinyl] phophorthioate; CAS Reg. No. 333-41-5) in/on raw agricultural commodities including bananas at 0.2 ppm (NMT 0.1 shall be present in the pulp after peel is removed.)

The Residue Chemistry Chapter of the Registration Standard on diazinon was completed 8/6/86.

Proposed Use
Initially, the proposed use included the treatment of banana trees (leaves and pseudostem) and the area around each tree by ground spray application at a rate of 2 lbs a.i./acre. One pint of the formulated diazinon would be diluted in 100 gallons of water of which 300-500 gallons would be used per acre. In the Fonecon of 8/7/89 with Bob Boesch the proposed use was reduced to 1 lb a.i./acre of diazinon or 200 gallons of the diluted formulated product. Apparently, the banana tree foliage was not so dense as to require 300-500 gallons of the diluted formulated product. Applications are planned for every 10 to 14 days for one year on approximately 530 acres on Oahu; however, if no diseased plants are detected during a 3-month period, treatments will cease. The registered PHI is 7 days, the proposed PHI is 5 days or fewer, preferably.

Additional uses include spot applications on a small scale basis to backyard banana plants, banana plants growing in the wild, etc.

Nature of the Residue
The nature of the residue in plants and animals has not been adequately delineated. However, for the purposes of this Section 18, diazinon per se is considered the residue of concern.

Analytical Methods

Methods for the analysis of diazinon in/on crops include Method I in PAM II or the AOAC 14th ed., 1984 (29.001 to 29.048). The residue data submitted in support of these Section 18s were determined using the GLC method from AOAC 13th ed., (29.001 to 29.018), modified). Recoveries from fortified samples ranged from 86 to 95% in pulp or peel using this method. These methods are considered adequate for enforcement purposes for these Section 18s.

Residue Data
The residue data submitted with these requests are summarized on the next page.

Diazinon Residues on Bananas

Sample	Rate lb a.i./A	No. of applications	PHI (days)	Residue (ppm) Pulp	Peel	Whole[1]
072689-03-OARD	0.75*	1	2	ND	-	-
072989-01-OASO	0.33*	1	1	ND	ND	ND
073189-01-OASO	0.33	1	2	ND	ND	ND
080289-01-OASO	0.33	1	3	ND	ND	ND
072989-01-OARD	0.5**	2	1	ND	0.62	0.44
073189-01-OARD	0.5	2	2	ND	0.49	0.34
080289-01-OARD	0.5	2	3	ND	0.54	0.36

1 Whole banana equivalent.

* Only the pseudostem and leaf sheaths were treated at these rates.

** The pseudostem, leaf sheaths, and fruit were treated at these rates.

Since the bananas are not to be treated directly, we conclude that the combined residues of diazinon will not exceed the established tolerances of 0.2 ppm on bananas (NMT 0.1 ppm on pulp after removal of peel) when the PHI is 3 days.

Meat, Milk, Poultry, and Eggs

Secondary residues of diazinon are not expected to occur in meat, milk, poultry, and eggs, since bananas and banana plants are not animal feed items.

Conclusions

1) The metabolism of diazinon in plants and animals is not adequately understood. However, for the purposes of this Section 18 only, we consider the residue of concern the parent compound.

2) Methods for the analysis of diazinon in/on crops include Method I in PAM II, the AOAC 14th ed., 1984 (29.001 to 29.048), or the AOAC 13th ed., (29.001 to 29.018, modified). These methods are considered adequate for enforcement of the established tolerances.

3) Since bananas are not to be treated directly, the residues of diazinon are not likely to exceed the established tolerances of 0.2 ppm on bananas (NMT 0.1 ppm on pulp after removal of peel) when the PHI is 3 days.

4) Secondary residues of diazinon are not expected to occur in meat, milk, poultry, and eggs, since bananas and banana plants are not animal feed items.

5) Analytical reference standards are available from the Pesticide and Industrial Chemicals Repository.

Recommendations

TOX considerations permitting, DEB has no objections to the Crisis Exemption and the Quarantine Exemption. An agreement should be made with the FDA regarding the legal status of the treated commodities in commerce.

cc:RF, Circ, Section 18 F, PMSD/ISB, Tomerlin (SACB), JSmith, RDSchmitt
RDI:ARathman:08/17/89:EZager:08/17/89
H-7509C:DEB:jss:JSmith:Rm8102f:557-7378:CM#2:08/17/89