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

JUN 14 1990

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: 90-IN-03. Propiconazole. Corn Grown for Seed.
No MRID #. DEB # 6702.

FROM: Leung Cheng, PhD, Chemist
Special Registration Section II
Dietary Exposure Branch
Health Effects Division (H7509C)

THRU: Francis Suhre, Section Head
Dietary Exposure Branch
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TO: Jim Tompkins, PM # 41
Registration Support Branch
Registration Division (H7505C)

and

Toxicology Branch
Health Effects Division (H7509C)

The Indiana State Chemist and Seed Commissioner has requested a specific exemption under Section 18 of FIFRA for the use of Tilt fungicide on corn grown for seed. The active ingredient is 1-((2-(2,4-dichlorophenyl)-4-propyl-1,3-dioxolan-2-yl)methyl)-1H-1,2,4-triazole or propiconazole.

Tolerances are established for the residues of propiconazole and its metabolites determined as 2,4-dichlorobenzoic acid and expressed as parent compound, in or on various agricultural commodities including grass forage at 0.5 ppm, grass hay at 5.0 ppm, wheat grain at 0.1 ppm, wheat straw at 1.5 ppm, milk at 0.05 ppm, eggs at 0.1 ppm, meat, fat and meat byproducts (except kidney and liver at 2 ppm) of cattle, goats, hogs and sheep at 0.1 ppm, and poultry meat, fat at 0.1 ppm, and poultry liver and kidney at 0.2 ppm. [40 CFR 180.434]. Tolerances on sweet corn (K + CWHR, 0.1 ppm), corn grain (0.1 ppm), corn forage and fodder (10 ppm) are pending (PP8F3674).

The proposed use (same as that proposed in PP8F3674) would permit ground applications of up to 50 gms ai/A for control of leaf

blight, rust grey leaf spot and eye spot. Repeat applications are to be spaced at 7-14 day intervals. A total of 200 gms propiconazole per acre is allowed in one season. Use of Tilt is prohibited after silking and a 14-day PHI has been imposed.

No residue data were submitted with this Section 18 request. Corn residue data were submitted in connection with PP8F3674 (C. Deyrup, 12/14/88). Following 8 x 25 g ai/A (200 g total) and 8 x 50 g ai/A (400 g total) applications and PHI's of 21-36 days, corn grain contained <0.05 ppm propiconazole. Sweet corn (K+CWHR) contained up to 0.06 ppm residue at PHI's of 13-38 days following 5 applications at 25-50 g ai/A (175 g total) and 50-100 g ai/A (350 g total). Residues on forage ranged from 0.11-5 ppm at 13-38 day (175 and 350 g ai/A total for sweet corn) and ranged from 0.12-9.3 ppm at 21-43 day (175 and 200 g ai/A for field corn). Residues on field corn fodder ranged from 0.16-4.12 ppm at 56-78 day (175 and 200 g ai/A total).

On the basis of the above data, DEB concludes that residues of propiconazole are not likely to exceed 0.1 ppm in corn grain and 10 ppm in corn forage and fodder as a result of the proposed use.

Cattle may be fed up to 50% corn grain or corn silage in their diet. Corn grain may be fed to poultry (70%) and to swine (85%) in their diet. Dietary burden from this proposed use would be 20 ppm (50% x 10 ppm silage / 0.25, dry weight basis) for cattle, 0.085 ppm (85% x 0.1 ppm grain) for swine, and 0.07 ppm for poultry. Residues in milk, meat, fat, kidney and liver (in ppm) from a cattle feeding study at the 15 ppm and 75 ppm level are as follows:

	15 ppm	75 ppm
milk	<0.05	<0.01-0.08
meats	<0.05	<0.05-0.11
fat	<0.05	0.07-0.23
kidney	0.56-0.63	3.0-4.7
liver	0.50-0.81	2.7-4.3

Results from a poultry feeding study at the 7.5 ppm level show <0.05 ppm in eggs, meat, fat and skin, and <0.1 ppm in liver.

DEB thus concludes that the established meat and milk tolerances will not be exceeded as a result of the proposed use.

Residue method AG-545A, Determination of Total Residues of Propiconazole in Crops as 2,4-Dichlorobenzoic Acid by Capillary Gas Chromatography; and AG-517, Determination of Total Residues of Propiconazole in Meat, Milk, and Eggs as 2,4-Dichlorobenzoic Acid by Capillary Gas Chromatography, are adequate for enforcement purpose. These methods have undergone successful method

validations, and are discussed in connection with PP4F3074.

CONCLUSIONS AND RECOMMENDATION

1. The metabolic nature of propiconazole in plants and animals is adequately understood. The residues of concern are the parent compound and its metabolites determined as 2,4-dichlorobenzoic acid.

2. Residue methods, AG-545A (crops) and AG-517 (meat, milk and eggs) are adequate for enforcement purpose.

3. Residues of propiconazole are not expected to exceed 0.1 ppm in corn grain and 10 ppm in corn forage and fodder as a result of the proposed use.

4. Secondary residues of propiconazole are not expected to exceed the established tolerances in meat, milk, poultry and eggs as a result of the proposed use.

5. Reference standards for propiconazole are available from the EPA Pesticides and Industrial Chemicals Repository, RTP, NC.

TOX considerations permitting, DEB has no objections to the issuance of this Section 18 request. An agreement should be made with the FDA regarding the legal status of the treated commodities in commerce.

cc:Circ, RF, Section 18 F, Cheng, DRES, FOD/PIB
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