

US EPA ARCHIVE DOCUMENT



6-14-90

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

JUN 14 1990

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM:

SUBJECT: ID #90-ND-08. Propiconazole [TILT®]: Section 18 exemption for use on oats in the State of North Dakota [DEB:#6690; MRID: n/a]

FROM: William L. Anthony, Chemist
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William L. Anthony

THRU: Francis B. Suhre, Section Head
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TO: B. Cool/J. Tompkins, PM #41
Emergency Response Branch
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and
Toxicology Branch
Health Effects Division [H7509C]

The State of North Dakota, the Department of Agriculture, has requested an emergency exemption, under Section 18 of FIFRA, as amended, for use of propiconazole [TILT®-3.6EC], EPA Reg. #100-617, a broad spectrum foliar fungicide, on oats to control Puccinia coronata (crown rust) during the 1990 season. This specific exemption is requested for treatment of up to 300,000 acres of oats grown throughout the State.

TILT®-3.6EC, a product of the Ciba-Geigy corporation, is an emulsifiable concentrate containing 41.8% propiconazole, [1-[[2-(2,4-dichlorophenyl)-4-propyl-1,3-dioxolan-2-yl]methyl]-1H-1,2,4-triazole], and 58.2% inert ingredients.

Each gallon contains 3.6 lbs of the active ingredient. Based on the maximum acreage to be treated, the proposed use would require up to 33,750 lbs of the active ingredient or 9380 gallons of the product.

Note: The amount of active ingredient to treat the 300,000 acres of oats in North Dakota was incorrectly given in the petitioners original request. The correct amount of active ingredient in terms of lbs and gallons, as shown in the preceding paragraph has been confirmed by Mr. Jack Peterson, North Dakota Department of Agriculture, Bismarck, ND, (701) 224-4756].

Previous Section 18 exemption reviews for TILT®-3.6EC include: W. Anthony, 5/14/90 on celery in Wisconsin; F. Suhre, 1/23/89 on celery in Florida, 6/1/88 on sweet corn in Florida, 3/17/86 on rice in Texas; K. Doktor, 7/16/84 on wild rice in Minnesota; and S. Malak, 5/15/84 on rice in Texas and 4/18/84 on rice in Arkansas.

TOLERANCES

Tolerances are established (40 CFR 180.434) for residues of propiconazole and its metabolites determined as 2,4-dichlorobenzoic acid and expressed as parent compound in/on wheat grain (0.1 ppm) and wheat straw (1.5 ppm). Permanent tolerances are also established for: bananas (0.2 ppm); barley grain (0.1 ppm) & straw (1.5 ppm); eggs (0.1 ppm); fat, meat, and meat-by-products (except liver and kidney) of cattle, goats, hogs, horses, poultry, and sheep (0.1 ppm); milk (0.05 ppm); pecans (0.1 ppm); rice grain (0.1 ppm) & straw (3.0 ppm); and rye grain (0.1 ppm) & straw (1.5 ppm).

There is no registration standard for propiconazole.

Proposed Use

Apply 0.1125 lbs [50 gm] of the active ingredient [4 oz TILT®-3.6 EC] per acre by air or ground. By air, 4 oz of the product may be applied in a minimum of 5 gallons of water per acre; for ground application, 4 oz of the product may be applied in a minimum of 15 gallons of water.

Restrictions: (1) Only one application of the fungicide is permitted per season; (2) Do not graze or feed livestock the treated crop for hay or silage; straw may be used for bedding. Application would be during the early flag leaf emergence (Feekes Growth Stage 8).

Note: No PHI was given in this submission.

Nature of the Residue

Propiconazole metabolism in plants and animals is adequately understood. The residues of concern are the parent compound and its metabolites determined as 2,4-dichlorobenzoic acid, [Memo: PP #4F3074, A. Smith, 7/12/84; PP #8F3674, C.Deyrup, 12/4/88.]

Analysis

An acceptable analytical method, viz., #AG-454, is discussed in connection with PP #8F3674, [C.Deyrup, 12/14/88]. This method which utilizes a capillary GC column and a EC detector, is adequate for enforcement.

Residue Data

No residue data were submitted with this request. However, residue data from a related crop, wheat, were previously submitted and reviewed by DEB in connection with PP #4F3074, [A. Smith 7/12/84].

WHEAT: Samples of winter wheat grain & straw taken from field studies in OH, NY, IL, NC, MS, MN, and KS were analyzed for residues. All had been ground treated with one application of 50 gm a.i. /A at a 49 to 80 day PHI. The results showed that the wheat grain had no detectable residues (<0.05 ppm); straw showed residues ranging from 0.08 to 0.79 ppm.

Residue field trials reflecting a single exaggerated application of 100 gm(2X) or 200 gm(4X) resulted in propiconazole residues in/on oat grain of 0.15 ppm and 0.29 ppm, respectively, 27 days after treatment. Processing studies utilizing these samples showed maximum concentration factors of 5X for bran and 1.3X for shorts. No detectable residues of propiconazol were found in germ or flour [Memo: PP #4G3075, L. Bradley, 8/15/84].

Meat, Milk, Poultry, and Eggs

Oat grain, hay, straw, forage, and hulls are livestock feed items. Oat hay, straw, and forage are under grower control and therefore subject to label restrictions against feeding. [Note: The milled products of oats are oat hulls - which comprises 25% of the oat milling fraction - oat flour, and rolled oats; see memo of C.Trichilo, 3/21/85 and S. Inasi, 4/10/90]. Oat grain in livestock feed can comprise up to 20% of the daily diet

for beef cattle; 50% for dairy cattle; 25% for poultry; and up to 90% for swine. Oat grain treated in accordance with this Section 18 reflects a potential dietary burden of: <0.025 ppm [$<0.05 \times 0.5$] for cattle; <0.012 ppm [$<0.05 \text{ ppm} \times 0.25$] for poultry; and <0.04 ppm [$<0.05 \text{ ppm} \times 0.8$] for swine.

Livestock feeding studies on cattle and chickens were previously reviewed in connection with PP #4G3075. These studies showed no detectable [$<0.01 \text{ ppm}$] residues of propiconazole and its metabolites in meat, milk, poultry, and eggs of livestock fed 7.5 ppm propiconazole for 28 days.

Conclusion

(1) For purposes of this Section 18 only, we consider the metabolism of propiconazole in plants and animals to be adequately understood. Propiconazole and its metabolites, determined as 2,4-dichlorobenzoic acid, are the residues of concern.

(2) Analytical method #AG-454 as described in PP #8F3674 is adequate for enforcement.

(3) Residues of propiconazole and its metabolites are not expected to exceed: 0.1 ppm in/on oat grain; 0.1 ppm in milled products; 0.5 ppm in/on hulls; and 1.5 ppm in/on oat forage & fodder.

(4) Secondary residues in meat, milk, poultry, and eggs will not exceed established tolerances.

(5) Analytical Reference Standards for propiconazole are available from the Pesticide & Industrial Chemists Repository at Industrial Park, NC.

Recommendation

TOX considerations permitting and provided a 50 PHI is in effect, DEB has no objection to this Section 18. An agreement should be made with FDA regarding the legal status of the treated commodity in commerce.

CC:Reviewer;SF[Propiconazole,TILT®];FOD/PIB(C.Furlow);DRES
(J.Kariya);DEB,R.Schmitt);Sec.18 File;Circulation.
RDI: FBS,6/14/90;EZ, 6/14/90.
H7509C: WLA;wla;CM-2, RM.812;X557-4351;6/14/90.