

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

FEB 14 1984

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: EPA Reg. No. 100-617. Amended Registration for
Tilt (CGA 64250) on sugarcane seed pieces. Accession
#251238.

FROM: Nancy Dodd, Chemist *Nancy Dodd*
Residue Chemistry Branch
Hazard Evaluation Division (TS-769)

THRU: Charles L. Trichilo, Chief
Residue Chemistry Branch
Hazard Evaluation Division (TS-769) *CLT*

TO: Henry Jacoby, P.M. 21
Fungicide-Herbicide Branch
Registration Division (TS-767)

Ciba-Geigy requests an amended registration to add use of the fungicide CGA-64250 (1-((2-(2,4-Dichlorophenyl)-4-propyl-1,3-dioxolan-2-yl)methyl)-1H-1,2,4-triazole) on sugarcane seed pieces in Hawaii for control of pineapple disease of sugarcane. The petitioner submits radioactive residue data to support classification of this use as a non-food use.

No tolerances are established for CGA-64250. A petition on pecans (PP#4F3007) is currently under review. A petition for temporary tolerances on pecans and rice was rejected (PP#1G2530, 1/7/82). An amendment to allow a temporary tolerance on pecans is currently under review (PP#1G2530).

Conclusions

The proposed use qualifies as a non-food use.

Recommendation

We have no objections to this amended registration.

Formulation

Tilt Fungicide contains 41.8% 1-((2-(2,4-dichlorophenyl)-4-propyl-1,3-dioxolan-2-yl)methyl)-1H-1,2,4-triazole and 58.2% inerts or 3.6 lbs. a.i./gal.

Proposed Use

Sugarcane (Hawaii only)

To control pineapple disease of sugarcane, apply Tilt to cut seed pieces before planting by dipping in a hot or cold solution containing 0.75 fl. oz. (22 ml) Tilt per 100 gals. water. The concentration of active ingredient in the dipping tank is approximately 25 ppm. When using a cold water dip, immerse seed pieces to wet thoroughly, remove, and drain. When using a hot water dip, soak at 52° C for 20-30 minutes, remove, and drain. Do not use treated seed pieces for food or feed. Dispose of spent dip solution according to state and federal regulations.

We note that sugarcane in Hawaii is a 22- to 36-month crop rather than an annual crop as in the continental U.S. and Puerto Rico.

Metabolism

Plants

Metabolism studies in wheat, barley, and grapes (PP#1G2530, J. Worthington, 1/7/82) indicate CGA-64250 is metabolized by hydroxylation of the alkyl group on the dioxolane ring, opening of the dioxolane ring, and eventual cleavage of the carbon chain between the phenyl and triazole rings. We note that no significant differences in the residue levels related to the site of the ^{14}C -label (phenyl or triazole) and relevant to the proposed use were observed in any of the plant metabolism studies. It was determined that for the purposes of the temporary tolerance parent per se and its metabolites containing the 2,4-dichlorobenzoic acid are the principal residues of concern. (Accession #070164)

Analytical Method

Sugarcane seed pieces were dipped in a solution of triazole ^{14}C -CGA-64250 and planted immediately. Plant samples were combusted for determination of $^{14}\text{CO}_2$ by liquid scintillation counting.

Residue Data

Single bud, 10 cm long sugarcane seed pieces were dipped for 1 minute in a solution of triazole- ^{14}C -CGA-64250 at concentrations of active ingredient of 27.1 ppm (approx. 1X), 57.2 ppm (approx. 2X), 129 ppm (approx. 5X), 258 ppm (approx. 10X), and 515 ppm (approx. 20X) just prior to planting. Plants treated at the 1X and 2X rates were sampled at 4, 8, 12, 16, and 58 weeks after germination. Most (96%) of the seed pieces germinated within 19 days. All of the plants were affected by a fungal disease. Of the plants treated at the 57.2 ppm rate, only one survived for processing to sugar and

2

molasses 52 weeks after germination. Residues resulting from the 27.1 ppm treatment rate were 0.37-0.48 ppm in the seedpiece on the day of treatment, 0.018-0.022 ppm in the whole plant 4 weeks after germination, <0.010-0.010 ppm in the whole plant at 8 weeks, 0.045-0.051 ppm in the seedpiece at 12 weeks, and <0.010 ppm in the stalk, green leaves, and suckers at 12 weeks. Residues resulting from the 57.2 ppm treatment were 0.57-1.1 ppm in the seedpiece at 0-day, 0.024-0.033 ppm in the whole plant at 4 weeks, 0.037-0.049 ppm in the whole plant at 8 weeks, <0.010-0.012 ppm in stalk, green leaves, and sucker at 12 weeks, 0.10-0.23 ppm in the seedpiece at 16 weeks, and <0.010 ppm in the stalk, green leaves, sucker, and sucker leaves at 16 weeks. No ^{14}C residues (<0.01 ppm) were detected 6 months after germination of seed pieces treated at 129 ppm (approx. 5X) and 258 ppm (approx. 10X) rates. ^{14}C -residues of 0.01 ppm in stalk and leaves and 0.14-0.017 ppm in sugarcane trash (dead leaves) were found 6 months after germination of seed pieces treated at a 515 ppm (approx. 20X) rate. Chopped cane, bagasse, raw sugar, and molasses obtained from one plant 58 weeks after germination from seed pieces treated at the 57.2 ppm (approx. 2X) rate had no detectable ^{14}C residues (<0.01 ppm).

Since no detectable residues were observed in sugarcane at 16 weeks after 2X treatment and 6 months from a 10X treatment rate and sugarcane grown in Hawaii is not harvested for 22-36 months after planting the proposed use qualifies as a non-food use.

cc:R.F., Circu, N. Dodd, Tilt S.F., Amended use File.,
 RDI:E. Zager:EZ;2/9/84:RDS:2/9/84
 TS-769:RCB:N. Dodd:ND:gmk:RM:800:CM#2:2/10/84