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

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OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: EPA Registration No. 464-448. Chlorpyrifos
on Corn, Sprinkler Irrigation applications.

FROM: Edward Zager, Chemist
Residue Chemistry Branch
Hazard Evaluation Division (TS-769)

Edward Zager

TO: Jay Ellenberger (PM-12)
Insecticide-Rodenticide Branch (TS-769)
Rodenticide Branch (TS-769)

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

CT

The Dow Chemical Co. requests an amended registration for its product Lorsban 4E Insecticide (4lbs chlorpyrifos/gallon) to permit foliar overhead sprinkler irrigation applications of Lorsban 4E in combination with non-emulsifiable oil.

Tolerances for residues of chlorpyrifos and its metabolite 3,5,6-trichloro-2-pyridinol (TCP) have been established at 0.1 ppm on field corn and fresh corn (inc sweet K+ CWHR) and at 10 ppm on corn forage and fodder (40 CFR 180.342).

The currently registered use of Lorsban 4E on field corn, popcorn and sweet corn is as follows:

Pre-plant incorporated treatment at the rate of 1-2 lbs act/A.

Multiple post-emergence applications (aerial or ground) at the rate of 0.25-1.5 lb act/A.

No application is to be made within 35 days before harvest of grain. Livestock are not allowed to graze in treated areas. Treated corn silage is not to be harvested as feed for

meat and dairy animals within 14 days after last treatment. Treated corn fodder is not to be fed to meat and dairy animals within 35 days after last treatment. No more than 15 pints (7.5 lb act/A) of Lorsban 4E may be applied per season.

The proposed use would permit post-emergence broadcast applications through overhead sprinkler irrigation systems at the above rates.

Applications may be made in combination with 2 pint of non-emulsifiable oil per acre.

The same restrictions as specified above would apply.

Residue data submitted with this request reflect 2 studies from GA(1) and NE (1).

Field corn received 5-10 foliar overhead sprinkler irrigation treatments of Lorsban 4E at the rate of 0.5-1lb act/A plus 1-2 pts of non-emulsifiable oil per acre. In total 5.0 lb act of chlorpyrifos was applied at each location.

Residues of chlorpyrifos (calculated from 3,5,6-trichloro-2-pyridinol) ranged from 0.3-2.1 ppm in corn forage at a 14 day PHI and from 0.09-0.99 ppm in corn fodder at a 35-day PHI. Residues were <0.05 ppm in corn grain at a 35-day PHI.

These residues are comparable and generally lower than those which resulted from the already registered aerial or ground treatments with Lorsban 4E (PP#1F2544, K. Arne, 1/29/82).

Those data reflect studies conducted in IL, MI, MS and NE. Following a single at-plant application of Lorsban 15G at the rate of 1.1 lb act/A. (The contribution to the total residue from this application would be negligible) and up to 5 post-emergence applications of Lorsban 4E at the rate of 1.5 lb act/A, residues of chlorpyrifos in or on green corn forage ranged up to 9.3 ppm at PHI's approximating 20 days. Residues in corn fodder and grain ranged up to 49 ppm and 0.07 ppm, respectively at PHI's of 31-32 days.

Thus, we conclude that residues of chlorpyrifos and its metabolite TCP will not exceed the established tolerances of 0.1 ppm on field corn and fresh corn (inc sweet K + CWHR) and 10 ppm on corn forage and fodder as a result of the proposed irrigation sprinkler applications.

Conclusions

1. Residues of chlorpyrifos and its metabolite TCP will not exceed the established tolerances of 0.1 ppm on field corn and fresh corn (inc sweet K + CWHR) and 10 ppm on corn forage and fodder as a result of the proposed use.

Recommendation

We have no objections to this amended registration.

cc: R.F.
Circu
Reviewer
Subject file
Amended Use file

RDI:Section Head: Date: RDS: Date

TS-769:RCB:Reviewer:EZ:bje:RM:810:CM#2X77324:11/17/82