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

JUL 3 1989
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OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: EPA Reg. No. 241-243. PROWL® 4E (pendimethalin). Add Layby use in Cotton. No MRID No. Branch No. 5273.

FROM: Kenneth W. Dockter, Chemist
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THRU: A.R. Rathman, Section Head *ARR*
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TO: R. Taylor / V. Walters, PM Team # 25
Registration Division (H7505C)

American Cyanamid Company is requesting an amended registration for the herbicide pendimethalin to allow the addition of post-directed layby applications (to the soil between rows following the last normal cultivation) in cotton.

A tolerance has been established for the combined residues of pendimethalin [N-(1-ethylpropyl)-3,4-dimethyl-2,6-dinitrobenzeneamine] and its metabolite 4-[(1-ethylpropyl)amino]-2-methyl-3,5-dinitrobenzyl alcohol in or on cottonseed at 0.1 ppm (40 CFR § 180.361).

The Pendimethalin Reregistration Guidance Document issued 3/31/85. Additional plant and animal metabolism data were requested because terminal residues in both plant and animal metabolism studies previously conducted had not been adequately characterized. Additional residue data were also requested in support of existing tolerances.

Due to inadequate residue data, the Branch has recommended against several proposed new tolerances.

Pendimethalin formulated as PROWL® 4E (an emulsifiable concentrate containing 42.3% active ingredient; 4 lb ai/gal) is currently registered for preplant soil incorporation and preemergence applications in cotton at rates of 0.5 to 2.0 lbs active/acre. The current (10/88) label restrictions include, "DO

NOT APPLY PROWL AS A POSTEMERGENCE SPRAY IN COTTON". Also, this product may be applied at rates of 0.5 to 1.0 lb ai/A as a post-directed layby) in pendimethalin-treated, transplanted tobacco.

The proposed label would allow, only in Arizona and Southern California the additional use of pendimethalin by post-directed layby applications at a rate of 0.5 lb ai in 10 to 40 gpa in previously pendimethalin-treated cotton. Protective shields are to be used to prevent spray contact with cotton foliage and stems. Irrigation within 7 days of layby application is recommended. A 60-day PHI is proposed. Restrictions include: do not apply PROWL 4E through any type of irrigation system, do not apply to peat or muck soils, and do not feed forage or graze livestock in treated cotton fields.

No new residue data were submitted and none are available which reflect the proposed added post-directed layby use in cotton.

Cyanamid argues that new data are not needed because:

1. Field trials ("Accession No. 94471") show that when PROWL is applied to the soil (preplant incorporated or preemergence) at 1 lb/A, <0.05 ppm (detection limit) pendimethalin or of its 3,5-dinitrobenzyl alcohol metabolite were detected in cotton plants at 27, 59, 61 days (or later) after treatment.
2. Additional data ("Acc. # 070293") also show that <0.05 ppm (detection limit) parent and metabolite also are not taken up from soil by snap bean.

Therefore, Cyanamid concludes supporting data already exists.

However, other Cyanamid data in our files show residues of 0.46 ppm and 0.58 ppm occurred respectively, in rice plants harvested 140 days and potato foliage harvested 30 days after preemergence or preplant incorporated soil application, which see C. Trichilo 12/3/85 memorandum, re: Addendum #1 to the Standard. Also, we note that the earlier submission ("Acc. # 94471") was never received by this Branch.

Older residue data in our files indicate that detectable levels (0.06 ppm) of pendimethalin do result in preplant-treated cotton, which see A. Smith 5/8/75 review; PP# 5F1556.

Since higher residues are likely to result from post-directed layby applications, we require that a pendimethalin residue data for cotton reflecting the proposed added use be provided.

Conclusion and Recommendation

Over-tolerance pendimethalin residues may result from the proposed added post-directed layby use in cotton. Appropriate residue field trials are required for this additional use of pendimethalin on cotton.

Therefore, we recommend against the proposed amended registration of PROWL 4E to allow the addition of cotton post-directed layby applications in Arizona and Southern California to previously pendimethalin-treated cotton.

cc: K. Dockter (DEB), R. Schmitt, Penidmethalin Amended use file, PP#s 5F1556 & 5G1567, E. Eldredge (ISB/PMSD), Circulation (7), RF.

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