



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

APR 15 1985

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

M E M O R A N D U M

SUBJ: 85-OR-02, Sec.18 Request,
Pendimethaline(Prowl) on Onions. [RCB#755]

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THRU: Edward Zager, Section Head
Special Registration Section II
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TO: Stubbs/Tompkins, PM Team #41
Registration Division (TS-767C)

A Specific Exemption for the use of Prowl® herbicide (Pendimethalin, Pay-off, EPA Reg. No. 241-243, Penoxalin) on onions has been requested by the State of Oregon Dept. of Agric. for the period of May 1, 1985 through June 30, 1985. It is anticipated that 2,600 acres of bulb onions will require treatment with 2,600 lb a.i. of pendimethalin. Tolerances are established for residues of pendimethalin (N-[1-ethylpropyl]-3,4-dimethyl-1-2,6-dinitrobenzeneamine and its metabolite 4-[(1-ethyl-propyl)-amino]-2-methyl-3,5-dinitrobenzyl alcohol) in or on the following r.a.c.'s (40CFR180.361): corn (fresh, inc. SK+CWHR, fodder, forage and grain), cottonseed, potatoes, sorghum (fodder, forage and grain), soybeans (bean, forage and hay), beans (forage, hay, and lima beans), and peanuts (incl. hay and forage). A temporary tolerance of 0.1 ppm expires on 5/1/85 for pendimethalin in/on onions (dry bulb) and garlic (PP#3G2857). 241-EUP-104 for use of Prowl 4E on onions was granted for 5/1/84 to 5/1/85. No residues of pendimethalin on onions were anticipated. No previous Section 18's have been requested for the use of this herbicide on onions.

Metabolism

The fate of pendimethalin in plants and animals has been reviewed and determined to be adequately understood. The residue consists of the pesticide N-[1-ethylpropyl]-3,4-dimethyl-2,6-dinitrobenzeneamine and its metabolite 4-[(1-ethylpropyl)amino]-2-methyl-3,5-dinitrobenzyl alcohol (PP# 3G2857, N. Dodd, 7/12/83).

Proposed Use

The request proposes ground or aerial broadcast of 0.75 to 1 lb a.i./A of the Prowl 4E formulation of pendimethalin at the 1 to 5 true leaf stage of crop development. A PHI of 50 days is requested with no more than 1 application per season. Restrictions are to be observed on the grazing of livestock on treated fields or the feeding of treated onions, on the planting of winter wheat or winter barley as follow crops in treat land if the fallow crop is planted using no-tillage procedures and use on mineral soils or soils with less than 5% organic matter.

Analytical Method

Methodology suitable for enforcement purposes has been reviewed before (ibid.). Amer. Cyanamid Method M-695 for determination of pendimethalin and M-696 for its 3,5-dinitrobenzyl alcohol metabolite in onion bulb tissue employ GC/EC with an external standard; recoveries of 79-129% have been reported at fortification levels of 0.05-5.0 ppm. The pendimethalin reference standard is available from the EPA Pesticide and Industrial Chemicals Repository.

Residue Data

No residue data were submitted with this request and only a limited number of residue studies have been submitted in connection with PP#3G2857. With early postemergent ground applications (flag to 5 true leaf stage) of pendimethalin at 1 to 2 lb ai/A (1-2X) and 106-189 days PHI, no residues of the parent or 3,5-dinitrobenzyl alcohol metabolite could be detected (<0.05 ppm). There are no data available to support estimates of anticipated residues with a PHI of 50 days or with aerial applications. The temporary tolerance of 0.1 ppm has been set with postemergent ground applications of 1 lb ai/A and a 100 d PHI in mind.

Conclusions

1. Adequate methodology (Amer. Cyanamid methods M-695, 696) are available for monitoring residues of pendimethalin and its 3,5-dinitrobenzyl alcohol metabolite in onion bulbs.
2. Residues of pendimethalin and its 3,4-dinitrobenzyl alcohol metabolite in onion can not be estimated for the proposed PHI (50 days). However, if the PHI were extended to 100 days and the use limited to ground applications only, then residues will not exceed the temporary tolerance of 0.1 ppm.
3. No secondary residues of pendimethalin and its metabolite should appear in meat, milk, poultry or eggs since no feed items are involved with this use.

Recommendation

TOX considerations permitting, and provided the PHI is extended from 50 to 100 days and use limited to ground applications, RCB has no objection to the proposed use. An agreement should be made with FDA regarding the legal status of treated onion bulbs in commerce.

cc: Sec. 18 S.F., Circu., Pendimethalin S.F., Reading F.,
Reiter Reading File, Reiter

TS-769C:RCB:Reviewer:A.Reiter:ajr:Rm.708:CM#2:557-3043:4/12/85

RDI:Section Head:E.Z.:4/12/85:R.D.S.:4/12/85