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

OCT 24 1990

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: 90-ID-14. Section 18 Emergency Exemption.
Pendimethalin on peppermint. No MRID #. DEB # 7084.

FROM: Leung Cheng, Chemist
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THROUGH: Francis B. Suhre, Section Head
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TO: Jim Tompkins, PM Team 41
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and

Toxicology Branch
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The State of Idaho, Department of Agriculture, has requested a Section 18 emergency exemption for the use of Prowl* herbicide on mint to control kochia and redroot pigweed. The active ingredient is N-(1-ethylpropyl)-3,4-dimethyl-2,6-dinitrobenzen-amine or pendimethalin.

Tolerances are established for the combined residues of pendimethalin and its metabolite 4-((1-ethylpropyl)amino-2-methyl-3,5-dinitrobenzyl alcohol in or on beans (lima, forage, and hay) at 0.1 ppm, corn (fresh, grain, forage, and fodder) at 0.1 ppm, cottonseed at 0.1 ppm, peanuts (nuts, hay, and forage) at 0.1 ppm, rice grain at 0.05 ppm, soybeans (beans, hay, and forage) at 0.1 ppm, and sunflower seeds at 0.1 ppm [40 CFR 180.361a].

Tolerances are established for the combined residues of pendimethalin and its metabolites 4-((1-ethylpropyl)amino-2-methyl-3,5-dinitrobenzyl alcohol and 3-((1-ethylpropyl)amino-2-methyl-3,5-dinitrobenzyl alcohol in or on peanut hulls at 0.25 ppm [40 CFR 180.361b].

No tolerances are established for animal commodities.

The proposed use calls for one application of 1.5-2.0 lbs ai/A in 10 or more gallons of spray solution per acre. A PHI of 90 days is imposed.

An update to the Residue and Product Chemistry chapters was issued 3/19/90. Data gaps cited include nature of the residue in plants and animals, magnitude of the residues and storage stability studies. However, for the purpose of this Section 18 request, DEB considers the residues of concern to be pendimethalin and 4-((1-ethylpropyl)amino-2-methyl-3,5-dinitrobenzyl alcohol.

Mint residue trials were conducted in Oregon in 1989. Following one application of pendimethalin at 2.0 lbs ai or 4 lbs ai per acre and a PHI of 114 days, residues of pendimethalin were <0.035 ppm and residues of the alcohol metabolite were also <0.035 ppm. Validation data show 81-86% recovery of the parent compound at 0.05 and 0.1 ppm fortification, and 71-100% alcohol metabolite was recovered when spiked at the 0.05 and 0.1 ppm levels.

DEB concludes the combined residues of pendimethalin and its metabolite are not likely to be detectable (<0.05 ppm) in/on mint hay as a result of the proposed use provided that the PHI is revised to 115 days. No residue data on mint oil is available and oil residue data are currently being collected in Dr. W. Gaur's lab at UC Davis (10/22/90 telecon, 916-752-4742). However, in a telecon with Dr. Charles Stanger of Malhaur Experiment Station, Ontario, OR (10/17/90, 503-889-2174), he informed DEB that 10 lbs of green hay yields an average of 15-20 mL of mint oil (a theoretical concentration of roughly 230). Thus, DEB does not expect pendimethalin residues to exceed 12 ppm (theoretical calculation, 0.05 x 230) in mint oil. Dr. Stanger also informed DEB that spent hay is not fed to livestock in the Northwestern states.

Methods are available in PAM II (methods I and II) for the enforcement of pendimethalin and its alcohol metabolite residues in plants, each at the 0.05 ppm sensitivity level. Both are electron capture GC methods.

According to DEB guidelines, spent hay may be fed to livestock (up to 60% in their diet). As long as a feeding restriction is imposed on the spent hay, DEB anticipates no problems with pendimethalin residues in meat, milk, poultry and eggs.

CONCLUSIONS AND RECOMMENDATION

1. For the purpose of this Section 18 request, DEB considers the residues of concern to be pendimethalin and 4-((1-ethylpropyl)-amino-2-methyl-3,5-dinitrobenzyl alcohol.

2. Provided the PHI is revised to 115 days, the combined residues of pendimethalin are not likely to be detectable (<0.05 ppm) in mint hay, and will not exceed 12 ppm (theoretically calculated using a concentration of 230) in mint oil as a result of the proposed use.

3. Methods are available in PAM II (methods I and II) for the enforcement of pendimethalin and its alcohol metabolite residues in mint.

4. As long as a feeding restriction on spent hay is imposed on the proposed label, DEB anticipates no problems with pendimethalin residues in meat, milk, poultry and eggs.

5. Reference standards are available at the EPA Pesticide and Industrial Chemicals Repository at RTP, NC.

TOX considerations permitting, DEB has no objections to this Section 18 emergency exemption request as long as the PHI is revised to 115 days and a feeding restriction of spent hay is imposed on the label. An agreement should be made with the FDA regarding the legal status of mint commodities in commerce.

cc:Circ, RF, Section 18 F, Cheng, DRES, PIB/FOD
RDI:FSuhre:10/23/90:EZager:10/24/90
H7509C:DEB:LCheng:CM#2:RM810:10/22/90:02:10/24/90