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

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

Memorandum

MAY 6 1987

Subject: CA-860072: Amendment to review dated 3-13-87; Section 24(c) Registration for Metolachlor on Lupine. No Accession No., No RCB No.

From: Francis B. Suhre, Chemist
Special Registration Section II
Residue Chemistry Branch
Hazard Evaluation Division (TS-769)

Thru: Edward Zager, Section Head
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To: Richard Mountford, PM-23
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The California Department of Food and Agriculture has requested that RCB reconsider its recommendation against (CA-860072, F. Suhre, memo of 3-13-87) the 24 (c) registration of Dual® 8E to control annual grassy weeds in sweet grain lupine grown for grain only. RCB recommended against the Section 24 (c) registration based on the premise that a tolerance for metolachlor residues in or on lupine was not established.

The registrant subsequently informed the Agency that; although lupines are not specially listed in 40 CFR 180.368a, they are covered under the group tolerance (0.3 ppm) for seed and pod vegetables. The Pesticide Commodity Index (40 CFR Parts 150 to 189) classifies seed and pod vegetables as follows:

"Black-Eyed Peas, Cowpeas, Dill, Edible Soybeans, Field Beans, Field Peas, Garden Peas, Green Beans, Kindey Beans, Lima Beans, Navy Beans, Okra, Peas, Pole Beans, Snap beans, Wax Beans, Other Beans and Peas, Lentils."

Since under 40 CFR 180.1 "beans" include lupine, lupine is covered under the existing tolerance for seed and pod vegetables.

Dual 8E, EPA Reg. No. 100-579, is a liquid concentrate containing 86.4% (8 lbs. a.i. per gallon) metolachlor, 2-chloro-N-(-2-ethyl-6-methylphenyl)-N-2-(methoxy-1-methylethyl) acetamide as its active ingredient.

The metabolic nature of metolachlor in plants and animals is adequately understood. The residues of concern in peas and animals are metolachlor, per se, and its metabolites determined as the derivatives, 2-[(2-ethyl-6-methylphenyl)amino]-1-propanol and 4(2-ethyl-6-methylphenyl)-2-hydroxy-5-methyl-3-morpholinone, each expressed as the parent compound.

Registered uses of Dual 8E on pod crops were most recently discussed in the Metolachlor Final Registration Standard and Tolerance Reassessment (6-13-83). In summary, Dual 8E is registered for preplant incorporation or preemergence treatment of peas (succulent and dried) at up to a maximum of 2.5 lbs. a.i./Acre. Application may be made early emergence but not beyon the crook stage. Use only preemergence applications on English peas and do not use on English peas in northeastern U.S.

The Section 24 (c) Supplemental Label calls for a single preplant or preemergence treatment of lupine fields with Dual 8E at 1.0 to 2.5 lbs. a.i. per acre.

Analytical methods are available for enforcement of established tolerances (combined residues of metolachlor and its metabolites of interest) in or on: seed and pod vegetables at 0.3 ppm; milk at 0.02 ppm; eggs at 0.02 ppm; and meat, fat, and mbyp of cattle, goats, hogs, horses, poultry, and sheep at 0.02 ppm. The Metolachlor Registration Standard recommends use of the GC method AG-283 (MRID 00015466) for plant commodities and Method REM 2/75 (MRID 00015432) for animal commodities. Both methods have undergone successful method tryouts; limits of sensitivity were reported to be 0.03 and 0.01 ppm respectively.

No residue data for lupines and/or peas have been submitted. The seed and pod vegetable group tolerance (0.3 ppm) was established from residue data on beans.

Bean residue data from field studies in CA, NY, and MD were discussed in the Metolachlor Registration Standard. The data reflect treatment of snap beans and lima beans with a single preplant application of Dual 8E at 2.5 to 6.0 lbs. ai/Acre and PHIs of 49 to 123 days. Combined metolachlor residues in snap beans ranged from ND (<0.08 ppm) to 0.25 ppm; the 0.25 ppm residue reflects treatment at the 2x rate (6 lbs. ai/A). Combined metolachlor residues in lima beans plus pods ranged

from ND to 0.21 ppm; the 0.21 ppm residue reflects treatment at the 2x rate (6 ppm).

Residue data from field studies in NY, CA, PA, and WI were also discussed in connection with PP#1F21495 (see, A. Smith, memo of 6-18-87). The data reflect preplant treatments of beans with Dual 8E at 3.0 (1x) to 6.0 (2x) lbs. ai/Acre and PHI's of 88 to 163 days. Residues on green beans plus pods treated at 1x and 2x (PHI's of 58 to 117 days) ranged from <0.05 to 0.14 ppm and <0.05 to 0.25 ppm, respectively. Residues on bean forage treated at 1x ranged from <0.05 to 10.2 ppm at 45 to 63 days; residues on bean forage treated at 2x ranged from 1.6 to 21.7 ppm at 45 to 53 days and <0.05 to 0.5 ppm at 59 to 63 days.

Meat, Milk, Poultry and Eggs

Secondary residues in meat, milk, poultry, and eggs resulting from livestock feeding on the seeds, vines, and hay of metolachlor treated beans were discussed in PP#1F2495 (see, A. Smith, memo of 6-18-81). Based on that review, we conclude that the established tolerance for metolachlor at 0.02 ppm in: milk; eggs; and meat, fat, and mbyp of cattle, goats, hogs, horses, poultry, and sheep will not be exceeded as a result of this Section 24 (c) registration.

Conclusions

1a. Tolerances are established (40 CFR 180.386a) for combined residues of metolachlor and its metabolites determined as the derivatives, 2-[(2-ethyl-6-methylphenyl) amino]-1-propanol and 4(2ethyl-6-methylphenyl)-2-hydroxy-5-methyl3-morpholinone, each expressed as the parent compound in and on seed and pod vegetables at 0.3 ppm; milk at 0.02 ppm; eggs at 0.02 ppm; and meat, fat, and mbyp of cattle, goats, hogs, horses, poultry, and sheep at 0.02 ppm.

1b. The seed and pod vegetables tolerance (0.3 ppm) is applicable to lupine.

2. Analytical methods based on gas-chromatography [Method AG-283 (MRID 00015466) for plant commodities; and Method REM 2/75 (MRID 00015432) for animal commodities] are available for enforcement of the established tolerances listed in conclusion 1.

3. Residue data, translated from beans, indicate that combined residues of metolachlor and its metabolites of concern will not exceed the established tolerances listed in conclusion 1.

Recommendation

We have no objection to this Section 24 (c) registration.

cc:R.F.,Circu,Reviewer,S.F.,Section 24(c) File, PMSD/ISB
RDI:EZ:5/5/87:KHA:5/5/87
TS-769:RCB:FBS:fbs:557-1889:CM#2:RM:814:5/5/87.