PMSD/ISB

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

JUN 28 1989

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: 89-OK-05. Section 18 Specific Exemption. Metsulfuron Methyl (Ally®, EPA Reg. No. 352-435) plus 2,4-D (Weedar 64, EPA Reg. No. 264-2 or Weedar 64A, EPA Reg. No. 264-143) on Wheat. (No. MRID No.) [DEB #5430] {HED Project #9-1574}

FROM: Francis D. Griffith, Jr., Chemist
Dietary Exposure Branch
Health Effects Division (H7509C)

THRU: Andrew R. Rathman, Section Head
Special Registration Section I
Dietary Exposure Branch
Health Effects Division (H7509C)

TO: D. Stubbs/Jim Tompkins, PM Team 41
Registration Support & Emergency Response Branch
Registration Division (H7505C)

and

Toxicology Branch - HF Support
Health Effects Division (H7509C)

The State of Oklahoma, Department of Agriculture requests an Section 18 exemption authorizing the use of metsulfuron methyl (Ally® 60DF, 60% a.i., EPA Reg. No. 352-435) plus 2,4-D (Weedar 64, EPA Reg. 264-2, 46.8% Diethylamine salt equivalent to 38.9% 2,4-D acid equivalent or 3.8 lbs/gallon; or Weedar 64A, EPA Reg. No. 264-143, 54.6% Diethanolamine salt equivalent to 37% 2,4-D acid equivalent or 3.8 lbs/gallon) on wheat to control annual broadleaf weeds such as Kochia, pigweed, bindweed, Russian thistle, lambsquarter, marestail, prickly lettuce, and sunflower.

Tolerances have been established for 2,4-D on barley, corn and wheat forage at 20 ppm and barley, corn and wheat grain at 0.5 ppm, and for 2,4-D + DCP on meat, fat, and meat by-products of cattle, goats, horses, hogs and sheep at 0.2 ppm, in milk at 0.1 ppm; and poultry and eggs at 0.05 ppm (see 40 CFR 180.142(b) and (h)). Tolerances have been established for metsulfuron methyl (methyl 2-[[[[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)amino]carbonyl]amino]sulfonyl] benzoate] and its metabolite A1

(methyl 2-[[[[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)amino]carbonyl]amino]sulfonyl]-4-hydroxyl benzoate on barley and wheat grain at 0.05 ppm, barley and wheat straw at 0.1 ppm and on barley and wheat green forage at 20 ppm; and for the parent herbicide alone on meat, fat, meat by-products of cattle, goats, horses, hogs, and sheep at 0.1 ppm and in milk at 0.05 ppm (see 40 CFR 180.428 (a) and (b)).

The proposed use would be a tank mix of 0.1 oz Ally® (0.0037 pound or 0.06 oz a.i. metsulfuron methyl) plus 4 to 8 oz a.i. 2,4-D (1/4 to 1/2 lb a.i.) in 1 gal/acre aerial application one time with only one application permitted in 22 months. A surfactant is added at 1 quart of 80% a.i. surfactant per 100 gallons of spray mix. A 20 day PHI is proposed. On the original label there is no PHI, but there is a built-in PHI of 25 plus days. The original label has no feeding or grazing restrictions. DEB has no objections if the state of Oklahoma wishes to further restrict the use of Ally® by imposing a grazing/feeding restriction on metsulfuron methyl treated straw/forage being fed to livestock. The tank mix of Ally® and Weedar will be applied between May 31, 1989 and June 14, 1989 on a maximum of 150,000 acres in 6 western Oklahoma counties for a total application of 555 pounds of metsulfuron methyl and 75,000 pounds of 2,4-D. This use is as a harvest aid and the application would be much latter than approved for use at the 2-3 leaf stage.

The nature of the residue of metsulfuron methyl in plants is adequately understood (see PP#4F3127 and PP#8F3647). The residues of concern in plants are the parent herbicide and its hydroxy metabolite, A1. Also, the nature of the residue of metsulfuron methyl in livestock is adequately understood. The residue of concern is the parent herbicide.

There are analytical residue methods available to gather residue data and enforce the proposed metsulfuron methyl tolerance in PAM-II. The HPLC-photoconductivity methods have undergone a successful Petition Method Validation (PMV) for small grains and meat and milk (see PP#4F3127). The limit of sensitivity is 0.02 ppm in cereal grains and 0.05 ppm in straw with recoveries in wheat grain ranging from 66% to 95% (X = 82%) for the parent herbicide. When wheat samples are spiked with the metabolite A1 in a range of 0.02 ppm to 0.16 ppm recoveries ranged from 60% to 102%. In meat and milk from 0.01 ppm to 0.1 ppm spikes recoveries ranged from 69% to 118%.

Storage stability data submitted with PP#4F312 indicated that metsulfuron methyl and its metabolite A were stable up to 36 months in wheat forage held in frozen storage.

Residue data on wheat, and barley grain and straw were submitted for parent and metabolite A from the major barley and wheat growing areas of California, Colorado, Delaware, Idaho,

Illinois, Kansas, North Dakota, Montana, Ohio, Oklahoma, Oregon, South Dakota and Washington State. Most data represented ground application in 12 to 40 GPA; aerial application consisted of 1-7 GPA. Residue data in wheat green forage was submitted from Kansas, North Dakota, Oklahoma, and Oregon; residue data for barley green forage was submitted from California only. One application of 0.06-1.0 oz a.i./A (X-16X) gave reported residues of <0.02 ppm for parent and metabolite A in/on wheat and barley grain, and <0.05 ppm in/on wheat and barley straw for PHI ranges of either 21-135 days or 220-327 days. Using one application of 0.125 oz. a.i./A on wheat green forage lead to reported residues for parent of 0.08 ppm to 0.76 ppm, <0.05 ppm to 0.11 ppm and <0.05 ppm at 0-1 day PHI, 3-7 days PHI and 14-28 days PHI, respectively.

DEB concludes there is little expectation that residues of metsulfuron methyl plus its hydroxy metabolite A1 will exceed the established 0.05 ppm tolerance in wheat grain and 0.1 ppm in wheat straw from the proposed use. This cannot be stated with certainty at the Oklahoma proposed 0.02 ppm tolerance level in grains as 0.02 ppm is a detection limit. A 0.5 ppm tolerance in wheat straw is too high from the proposed use. For residues of 2,4-D we conclude there is little expectation of 2,4-D residues exceeding the established tolerances in wheat grain and straw from the proposed use.

Meat/Milk/Poultry/Eggs

Ruminant feeding studies have been submitted and adequately reviewed for metsulfuron methyl (see PP#4F3127). The proposed grazing/feeding restriction has no effect on the results of the study as the study indicates the feeding of 100 ppm metsulfuron methyl to cattle results in residues of <0.1 ppm in all tissues except kidney which are 0.12 ppm. Milk metsulfuron methyl residues were <0.011 ppm. From the proposed use DEB concludes the established secondary metsulfuron methyl tolerances are adequate.

CONCLUSIONS

1. The nature of the metsulfuron methyl residue in wheat is adequately understood with the parent herbicide and its hydroxy metabolite A1 being the residues of concern. The nature of the metsulfuron methyl residue in livestock is adequately understood with the residue of concern being the parent herbicide.

2. Adequate metsulfuron methyl residue analytical methods to gather residue data and enforce the tolerance have completed a successful PMV and are in PAM-II for residues in both plants and tissues.

3. Residues of metsulfuron methyl plus its hydroxy metabolite are not expected to exceed the established tolerances of 0.05 ppm on wheat grain and wheat straw at 0.1 ppm when metsulfuron methyl is used as directed in this Section 18. Nor are the 2,4-D established tolerances in wheat grain likely to be exceeded at 0.5 ppm when 2,4-D is tank mixed with metsulfuron methyl and used as directed in this Section 18.

4. The secondary tolerances established for meat, fat, meat by-products of metsulfuron methyl at 0.1 ppm and 0.05 ppm in milk are not likely to be exceeded from feeding of treated wheat grain to livestock at the proposed plant tolerance.

5. Analytical reference standards for metsulfuron methyl (coded F844) and its hydroxy metabolite are available from EPA's Pesticides and Industrial Chemicals Repository in North Carolina.

RECOMMENDATION

DEB has no objections to this Section 18. Agreements with FDA regarding the legal status of treated commodities in commerce are not necessary in this case as both herbicides are registered for use on wheat and have established tolerances on wheat grain and straw.

cc: R.F., Circu(6), Section 18 File, Reviewer (FDG), Tomerlin (SACB), ISB/PMSD (Eldredge), R. D. Schmitt.

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RDI:SectionHead:A.R.Rathman:6/27/89:E.Zager:6/27/89.