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

JUL 18 1989

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

Memorandum

Subject: 89-OR-21. Section 18 Specific Exemption for the Use of Oxyfluorfen (Goal®, EPA Reg. No. 707-174) on Kentucky Bluegrass, Perennial Ryegrass, and Fine Fescues.
No Accession Number / No MRID Number
DEB # 5503

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To: Registration Support and Emergency Response Branch
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The Oregon Department of Agriculture has requested a Section 18 Emergency Exemption authorizing use of Goal herbicide (EPA No. 707-174, 1.6 lbs/gal) to control various weeds among Kentucky bluegrass, perennial ryegrass, and fine fescues grown for seed.

Permanent tolerances are established (40 CFR 180.381) for combined residues of oxyfluorfen [2-chloro-1-(3-ethoxy-4-nitrophenoxy)-4-(trifluoromethyl)benzene] and its metabolites containing the diphenyl ether linkage in/on; tree nut crop grouping (except almond hulls) at 0.05 ppm; almond hulls at 0.1 ppm; stone fruits at 0.05 ppm; artichokes, broccoli, cabbage, cottonseed, corn grain, soybeans, and wheat at 0.05 ppm; and eggs, milk, meat, and poultry at 0.05 ppm. Tolerances with regional registration are established (40 CFR 180.381 (b)) for oxyfluorfen/metabolites in/on guava at 0.05 ppm.

The proposed use includes two applications, late pre-emergence and early post-emergence by broadcast spray at the following rates;

Kentucky bluegrass	0.375 lb a.i./acre
Perennial Ryegrass	0.25 lb a.i./acre
Fine Fescues	0.125 lb a.i./acre

Approximately 56,000 acre would be treated between September 1, 1989 and January 15, 1990. Grazing would be prohibited. A 150 day PHI is imposed.

The nature of the residue in/on plants has been reviewed extensively in apples (PP#4F3115, 4F3116, 4F3117, 4F3119, F. Griffith, 12/2/86) soybeans, green beans, peas, sorghum, rice, faba beans, green foxtail, and onions (PP#8F2058, R. Perfetti 2/13/79 and 8/31/79; PP#1G2492 A. Rathman 11/18/81; and PP#3F2859 K. Arne 7/14/83). Translocation studies indicate oxyfluorfen is only slightly systemic. The nature of the residue in certain food or feed items was not adequately delineated; however, for uses resulting in no detectable residues the nature of the residue was adequately defined. Studies conducted on fruit trees revealed no residues in immature or mature fruit. Since residues were not found in the fruit data were not required for possible impurity formation. The nature of the residue is adequately delineated in plants for the purposes of this Section 18 <u>only</u>. We consider the oxyfluorfen and its metabolites containing the diphenyl ether linkage as the residues of concern.

Animal metabolism studies for rats, lactating goats, and poultry have been submitted and reviewed (PP#8F2058 R. Perfetti 9/13/79). The nature of the residue in meat, milk, poultry, and eggs was not adequately defined for uses resulting in significant residues in feed items. In a subsequent review (PP#8F2058 R. Perfetti 8/31/79) the nature of the residue was considered adequately defined for the purposes of the petition since only field corn grain (containing <0.05 ppm residues) would be used for feed. The nature of the residue in animals is adequately defined for the purposes of this Section 18 <u>only</u>. We consider oxyfluorfen and its metabolites containing the diphenyl ether linkage as the residues of concern.

The methods to determine residues of oxyfluorfen include "Terminal Residue for RH-2915 (oxyfluorfen) and Reduced Metabolites", Rohm and Haas Technical Report No. 3923-75-22 (2/75) and the PAM II, Method I. The methods consist of digestion and methanol extraction of oxyfluorfen and its reduced metabolites followed by conversion to 4-[2-chloro-4-(trifluoromethyl)-phenoxy]-2-ethoxy-benzenamine. This compound is partitioned into hexane by a distillation-extraction process and the heptafluorobutyramide derivative is prepared. Purification and quantitation is achieved by Florisil chromatograph followed by electron-capture gas-liquid chromatography. The sensitivity of the method is 0.01 ppm. We conclude that this method is adequate for enforcement purposes.

Residue data on grasses and grass screenings were not submitted with this request and have not been submitted previously. However, residue data has been submitted on soybeans, corn grain, and cottonseed.

Soybean residue data were submitted in PP#5G1581 reviewed by W. Cox (5/5/75). Twelve studies were conducted which included a single application of 0.125 to 1.0 lb a.i./acre, the PHIs were 104-200 days. Residues on mature beans were reported at 0.01 ppm for one of the trials. All the other studies conducted, including treatments at 2X the maximum recommended rate, reported no detectable residues (<0.01 ppm).

In the same petition, residues data on corn grain were submitted. Corn received a single treatment at rates ranging from 0.5 to 2.0 lb a.i./acre and (one study) four treatments at a rate of 0.125 lb a.i.acre. PHIs ranged from 78 to 117 days. All samples were reported as having no detectable residues (<0.01 ppm).

Residue data on cottonseed were submitted with PP#1F2488 reviewed by M. Nelson (10/9/81). Nine studies were conducted consisting of a single post-emergence spray application at rates of 0.25-2.0 lb a.i./acre. The PHIs were 74-147 days. Residues in/on cottonseed were reported to be <0.01 to 0.01 ppm. Twelve other studies conducted consisted of one post-emergence spray application at rates of 0.25-1.0 lb a.i./acre. The PHIs were 97-155 days. Residues in/on cottonseed were reported to be 0.0 ppm.

Considering the proposed use of oxyfluorfen on grasses and the only slight systemic nature of oxyfluorfen demonstrated by plant metabolism studies, we can translate the residue data from soybeans, corn grain, and cottonseed to grasses grown for seed. Based on this data, it is unlikely that residues exceeding 0.01 ppm would occur. However, since the residue data has been obtained indirectly, we conclude that residues of oxyfluorfen and its metabolites containing the diphenyl ether linkage are not likely to exceed 0.05 ppm in/on grass screenings as a result of the proposed use, for the purposes of this Section 18 <u>only</u>.

<u>Meat, Milk, Poultry, and Eggs</u>

Grasses grown for seed are considered feed items in that grass seed screenings are mixed with grain for feed purposes. The grazing of treated grass is prohibited.

The maximum likely dietary intake of oxyfluorfen (and metabolites in the tolerance expression) residues by beef and dairy cattle is <0.01 ppm if the diet is composed of up 30% grass screenings. This is based on the highest residues reported even at exaggerated rates on soybeans, corn grain, or cottonseed (which we translated to grass screenings) of 0.01 ppm.

Previously, oxyfluorfen has been classified in category 2 of 40 CFR 180.6 (a) with respect to secondary residues in meat, milk, poultry, eggs based upon radiotracer ruminant (lactating goat) and poultry feeding studies. Details of these studies are

discussed in the review by R. Perfetti (PP#8F2058, memos dated 2/13/79 and 8/31/79). In conjunction with this petition, tolerances were established on oxyfluorfen and its metabolites containing the diphenyl ether linkage at 0.05 ppm in milk, eggs, and the meat, fat, and meat by-products of cattle, goats, hogs, horses, poultry and sheep.

For the purposes of this Section 18 only, we conclude that the secondary residues are not likely to exceed the established tolerance of 0.05 ppm in milk, eggs, and the meat, fat, and meat by-products of cattle, goats, hogs, horses, poultry and sheep.

Conclusions

1. The nature of the residue in plants and animals is adequately delineated for the purposes of this Section 18 only. We consider the residues of concern as oxyfluorfen and its metabolites containing the diphenyl ether linkage.

2. The analytical methods, "Terminal Residue for RH-2915 (oxyfluorfen) and Reduced Metabolites", Rohm and Haas Technical Report No. 3923-75-22 (2/75) and the PAM II, method I are adequate for enforcement of the proposed tolerance for the purposes of this Section 18.

3. For the purposes of this Section 18 only, we conclude that residues of oxyfluorfen and its metabolites containing the diphenyl ether linkage are not likely to exceed 0.05 ppm in/on grass screenings as a result of the proposed use.

4. Secondary residues are not likely to exceed the established tolerance of 0.05 ppm in milk, eggs, and the meat, fat, and meat by-products of cattle, goats, hogs, horses, poultry and sheep, for the purposes of this Section 18 only.

5. Analytical reference standards are available from the Pesticide and Industrial Chemicals Repository.

Recommendations

DEB has no objections to this Section 18. An agreement should be made with the FDA regarding the legal status of the treated commodities in commerce.

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I J Smith here
in screenings
will be brown
Hay grass

Circ, Section 18 F, PMSD/ISB, Tomerlin (SACB), JSmith, RDSchmitt
RDI:ARathman:07/17/89:EZager:07/17/89
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