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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: File #359-TNI Acifluorfen, Sodium salt.
Amended registration [RCB #533] [Acc.#256168]

FROM: William L. Anthony, Chemist
Special Registration Section II
Residue Chemistry Branch
Hazard Evaluation Division (TS-769)

THRU: Edward Zager, Section Head
Special Registration Section II
Residue Chemistry Branch
Hazard Evaluation Division (TS-769)

TO: Richard Mountfort, Product Manager #23
Insecticide-Rodenticide Branch
Registration Division (TS-767)

William L. Anthony
E. Zager

The Rhone-Poulenc, Inc., Agrochemical Division, has submitted an amended registration request for the use of the post emergence herbicide acifluorfen, sodium salt [Sodium 5-(chloro-4-(trifluoromethyl) phenoxy)-2-nitro-benzoate] on soybeans. The common name for the Rhone-Poulenc product is Tackle[®].

Permanent tolerances have been established for the combined residues of the sodium salt of acifluorfen and its metabolites (the corresponding acid, methyl ester, and amino analogues) [40 CFR 180.183] in/on several r.a.c. ranging from 0.02 ppm to 0.1 ppm. There is a permanent tolerance of 0.1 ppm on soybeans.

Proposed Use

The proposed use on soybeans is the same as reported in PP#3F2811, except the revised label states, "Do not apply within, 50 days of harvest" and "Do not plant rotational crops within 8 months of Tackle application". The previous label restricted the use of the herbicide to "100 days of harvest ..." and "... within one year of tackle application".

Tackle[®] is to be applied when soybean reach the 1-2 trifoliolate leaf stage at rates of 0.50-0.75 lb act/A. Only one application per growing season and a maximum of 0.75 lb act/A is permitted.

As in the original label there is a restriction on the use of treated plants for feed or forage.

The petitioners are proposing that the label be modified to include: (a) additional susceptible weed species, (b) a decreased PHI from 100 days to 50 days, and (c) permit planting of "other" ~~crops within eight months of application rather than one year.~~
(Memo: A. Smith, PP#3F2811, 8/3/83).

The petitioners have supported the above requested label revisions by submitting (1) residue data on soybeans treated with tackle via air application, (2) residue data on soybeans treated with ground equipment and (3) a ¹⁴C-Tackle® rotational crop study. We defer to the Environment Assessment Branch for assessment of this rotational crop study.

Analysis

The Rhone-Poulenc method (No. #160) used to generate the data submitted with this request was found adequate for enforcement purposes (PP#3F2811 A. Smith 8/3/83). Briefly, this method determined five residue components, viz., acifluorfen, sodium (LS-80-1213); acifluorfen, acid (LS-82-5276); amino acid analog (LS-82-5281); and respective methyl esters LS-81-5875 and LS-82-5282. Four of the five components are converted to the fifth component (acifluorfen methyl ester) which is determined by GC/ECD. The results are then expressed in terms of the parent compound, acifluorfen. The limit of detection is >0.02 ppm for each component.

Method (No. 160) however, does not distinguish between residues of the various components. A confirmatory method (No. 161) - also described in PP#3F2811 - does identify individual metabolites.

We concluded in our review of PP#3F2811 (A. Smith 8/3/83) that the two methods combined are adequate for the determination of residues of acifluorfen and its metabolites in soybeans.

Residue Data

Residue data submitted in the original petition (PP#3F2811) were collected from field studies in Nebraska, Alabama, Georgia, Missouri, Arkansas, Illinois, North Carolina, Minnesota, South Dakota, and Indiana. Crops were treated at rates of 0.25-1.0 lb act/A, soybean samples were collected at intervals of 97-171 days, after treatment.

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The samples were analyzed for the a.i., acifluorfen-sodium (MC-10109; new designation LS-82-5276); acifluorfen-methyl ester (MC-10108; new designation LS-81-5875); amino acifluorfen (MC-14621; new designation LS-82-5281); methyl ester of amino acifluorfen (MC-14621; new designation LS-82-5281); and methyl ester of amino acifluorfen (MC-14620; new designation, LS-82-5282). No residues were detected (<0.02 ppm) in the soybeans.

Additional residue data submitted with this amendment reflect soybean treatments with acifluorfen, sodium salt, using ground (tractor mounted boom sprayers) and aerial equipment.

Ground Applications: Studies were conducted in Illinois, Iowa, Ohio, Mississippi, Indiana, and South Dakota. The plot size for each test site did not exceed 500 ft². Each of the six test sites were treated once with 0.75 lb act/A. The soybean plants were sprayed at various times from the 15th trifoliolate to full green bean stage. The PHI varied from 40 to 52 days. Except at one site (Indiana) beans were separated from pods. No residues, using the enforcement method (No. 160) were detected in any of the samples. The limit of detection was <0.02 ppm.

Aerial Application: Test sites in Missouri, Mississippi, Arkansas, and Iowa were sprayed at the maximum label rate of 0.75 lb act/A using aerial equipment. The PHI ranged from 45 to 49 days. At harvest, the beans were separated from the pods by combines. Using enforcement method (No. 160) no residue were detected in any of the samples. The detection limit was <0.02 ppm.

Only one sample (#1597) was analyzed for possible presence of the metabolite acifluorfen, methyl ester [LS-81-5875).

We conclude that residues of sodium salt of acifluorfen and its metabolites will not exceed the established tolerance of 0.1 ppm in or on soybeans as a result of the proposed use.

Conclusion

- (1) Residues of sodium salt of acifluorfen and its metabolites in or on soybeans will not exceed the established tolerance of 0.1 ppm.
- (2) We defer to EAB regarding the ¹⁴C-Tackle crop rotational study submitted with this request.

Recommendations

EAB considerations permitting we have no objections to this
amended registration.

cc: Circu, Reviewer, Acifluorfen S.F., R.F., Amended Use S.F.,
RDI:Section Head:E.Zager:4/2/85:RDSchmitt:4/2/85
TS-769:RCB:Reviewer:WLANthony:557-7484:CM#2:RM:812:LDT:4/2/85

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