APR - 4 1984

BASF Wyandotte Company
Agricultural Chemicals Group
100 Cherry Hill Road
Parsippany, NJ 07054

Attention: Donald M. Yoder

Gentlemen:

Subject: Poast Herbicide (Soybean and Alfalfa)
Pesticide Petition No. 3F2904
EPA Registration No. 7969-58
Your letter of May 27, 1983

This refers to Pesticide Petition No. 3F2904 which proposes the establishment of tolerances for residues of the herbicide sethoxydim (2-[1-(ethoxyimino) butyl]-5[2-(ethylthio)propyl]-3-hydroxy-2-cyclohexen-one) in or on the raw agriculture commodities soybean hay at 20.0 parts per million (ppm), soybean forage at 20.0 ppm, alfalfa hay at 20.0 ppm, and alfalfa forage at 23.0 ppm.

The scientific review and evaluation of the residue chemistry data have been completed. The following are our conclusions and/or comments.

1. The nature of residues in plants is not adequately understood for purposes of these tolerances.

   a. The data show that 60% of the radioactivity was not characterized in soybean plants harvested 7 days after application. The quantity of uncharacterized radioactivity increased with time.

   b. Methanol does not prove to be an effective solvent for extraction of weathered residues from soybean plants.

   c. More information is needed about the uncharacterized/bound radioactivity. We suggest that the initial extraction of soybean samples be done using a solvent mixture of methanol and acid and/or apply ultrasonic treatments, enzymatic

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hydrolses, etc., during any step of sample preparation in an effort to release more of the bound or polar residues and thereafter identify the aglycones.

2. The analytical method will have to be validated as part of the metabolism studies. We have questions on the adequacy of tolerance on soybeans. Once the methodology question is resolved the residue data on soybeans will be evaluated in light of revised use pattern for soybeans.

3. Once the questions on plant metabolism and analytical methodology are resolved, residue data on reserve soybean hay samples should be submitted to decide if tolerances are adequate on soybean hay and forage.

4. The request on establishment of a tolerance on soybean forage should be reconsidered. Based on the 90-day PHI required and the 53 days for soybeans to grow from planting to the third-node stage and the maturity time of 126 to 158 days, the proposed tolerance on soybean forage is impractical. The grazing and feeding restrictions on soybean forage and ensilage should be returned to the proposed label.

5. We consider a tolerance on soybean hay to be practical.

6. The mode of application (aerial and/or ground) on soybeans and alfalfa plots is needed.

7. An alfalfa forage sample coded 503 (Illinois) has a residue of 38 ppm at the proposed PHI of 7 days and was allowed to dry prior to analysis. Since dried alfalfa hay can be considered dried alfalfa hay this sample seems to be for alfalfa hay. A further explanation on the residue level in this sample is needed.

8. Under the "Restrictions and Limitations" of the proposed alfalfa label we suggest the following be used.

   Do not apply Poast within 7 days of feeding, grazing, or harvesting when used alone. Do not apply Poast and 2,4-DB as a tank mix unless the 60-day feeding, grazing, and harvesting restrictions on the 2,4-DB label can be observed.

9. A final decision on the adequacy of the proposed tolerances on alfalfa forages and hay will await resolution of nature of residue and analytical methodology deficiences.

10. The recoveries of BAS 9052H and its metabolites from stored samples are surprisingly much higher than the recoveries of standards/residues from samples that were fortified at time of analysis. This difference must be explained.

11. The nature of the residue in animals is not adequately understood for the establishment of tolerances on crops involving feed items.

a. A new lactating animal metabolism study is needed at a feeding level between 50-100 ppm ^{14}C-BAS 9052H parent compound.

b. Results from a poultry metabolism study carried out at a feeding level between 10-20 ppm ^{14}C-BAS 9052H.

c. For both studies all attempts (acid, base hydrolysis, etc.) to extract and characterize possible polar and bound residues. Methanol, the solvent used on analytical methodology for plant and animal commodities, extracted only about 33% of weathered residues on soybeans harvested 35 days after application.

12. The analytical method used will have to be verified.

13. A final decision on adequacy of the established meat, milk, poultry and egg tolerances will await resolution of deficiences with the animal metabolism data and analytical method. After resolution of these deficiencies we may reanalyze some of the reserve meat, milk, and poultry and egg samples from previously submitted feeding studies.

Further action will await reply the above comments and completion of the toxicology review.

Sincerely,

Robert J. Taylor
Product Manager (25)
Fungicide-Herbicide Branch
Registration Division (TS-767C)

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