1/3

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

DEC 20 1990

OFFICE OF
PESTICIDES AND TOXIC
SUBSTANCES

MEMORANDUM:

SUBJECT: PP#9F3714. EPA Reg. No. 8340-GI. Fenoxaprop-ethyl in or on Wheat. Response to Analytical Chemistry Section's Comments and Revised Method for Wheat Grain and Straw. MRID No. 416982-01. CBTS No. 7442.

FROM: Joel Garbus, PhD., Chemist Joel Garbus
Permanent Tolerance Section III
Chemistry Branch I-Tolerance Support (H7509C)

THRU: Richard D. Schmitt, PhD., Chief Richard D Schmitt
Chemistry Branch I-Tolerance Support
Health Effects Division (H7509C)

TO: D. Marlow, Chief
Analytical Chemistry Branch
Biological and Economic Analysis Division (H7503C)

Hoechst Celanese Corporation has requested the registration of Tiller Herbicide, a pre-mix, multiple active ingredient product containing fenoxaprop-ethyl, and has proposed the establishment of permanent tolerances for the commodities wheat grain at 0.05 ppm (negligible) and wheat straw at 0.5 ppm for the combined residues of fenoxaprop-ethyl and its two major metabolites.

The method for use with these commodities, HRAV-4, has undergone validation by the Analytical Chemistry Section. [See memos to CBTS: E. H. Hayes and J. F. Negron, 9/5/90 (straw) and E. H. Hayes and J. F. Negron, 9/14/90 (grain)].

The Analytical Chemistry Section made the following comments:

The method submitted by the company is well written and easy to follow. However, there are a number of steps that make the method inefficient.

1a. The method is lengthy. Six hours are required to reflux the matrices and six more hours are required from step 6.1.2(d) to step 6.3, not counting steps 6.4 to 6.6 which will add another

Printed on Recycled Paper

hour. For gas chromatographic analysis using 40-60 min. per sample analysis time requires a total time of 6-8 hours assuming six samples and three standards are run. Laboratories that do not possess an autosampler would need approximately three days to complete a set of six samples.

1b. A longer hold time on the GLC is suggested as grain interferring extracts vary from commodity to commodity. Therefore, it is suggested to hold the GLC at upper temperature for at least 60 minutes.

2. With grain there is interference within the window of interest. A more interference-free window is recommended as the general chromatographs of peaks eluted are messy.

3. In section 5.1, there is insufficient direction given about finely grinding the wheat sample. Since the method emphasizes that it is critical that the sample be ground fine, but how fine: very fine, medium fine, coarse fine, flour like? Method should state mesh size for grinding.

4. ACL does not agree with the statement in 6.1.1(d). According to PAM Vol. 1, "Food and Feeds", Section 202.25 stated that wheat straw contains approximately 10% moisture. A 10g sample of straw will result in an equivalent of 1.0 ml of water. A 25g sample of grain will result in an equivalent of 2.5 ml water.

5. The memo from DEB states that standard fenoxaprop-ethyl and its metabolites are available from the EPA repository. Only fenoxaprop-ethyl is available not the metabolites. The metabolites need to be acquired from the registrant.

6. ACL used the wheat straw and grain provided by the company, except when the wheat straw and grain were depleted, we used USDA FGIS's wheat straw and grain.

7. Method makes no mention of where one could stop during the day before continuing the next day. Are there critical steps that must remain consistent with the progress?

8. The requested fortifications of 0.5 and 0.1 ppm [for wheat straw] are ten and twenty greater than the sensitivity of the method which was stated to be 0.05 ppm.

CBTS concluded that Method HRAV-4 for the determination of fenoxaprop-ethyl and its metabolites in/on wheat grain and straw appeared to be suitable for enforcement purposes as it is well described and resulted in acceptable recoveries. However, there were a number of steps in the method that could be revised to further the method's efficiency.

The Analytical Chemistry Section's comments have been brought to the attention of the petitioner. In the light of these comments the petitioner has revised the method to make it more efficient.

CBTS request that the Analytical Chemistry Section review the revised method designated as HRAV-4A and comment on its suitability for enforcement purposes.

CBTS will reserve its final recommendation as to the suitability of the method as an enforcement method until we receive The Analytical Chemistry Section's comments.

Attachment: Petitioners Response to EPA Dietary Branch Review Dated November 1, 1990 of the Fenoxaprop-Ethyl Wheat Analytical Method Validation and Revised Analytical Method HRAV-4A.

cc with attachment: D. Marlow

cc without attachment: R.F.; Circ.; S.F.; Garbus; PM-23; PP#9F3714; FOD/ISB (Furlow)
RDI:PE:12/19/90:RAL:12/19/90
H7509c:CBTS:JG:jg:12/19/90:CM#2:803a:(703) 557-1405