

US EPA ARCHIVE DOCUMENT

PMSD/TSB



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

JUL 21 1988

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: Monsanto submission of proposed regulatory enforcement Method in response to Alachlor Registration Standard Method Validation Request for 2 Alachlor metabolites on corn grain and fodder, peanuts and peanut hay [MRID No. 405580-01, No RCB No.]

FROM: Susan V. Hummel, Chemist
Special Review Section II
Residue Chemistry Branch
Hazard Evaluation Division (TS-769)

Susan V. Hummel

THRU: Charles L. Trichilo, Ph.D., Chief
Residue Chemistry Branch
Hazard Evaluation Division (TS-769)

Charles L. Trichilo

TO: Donald A. Marlow, Chief
Chemical Operations Branch
Benefits and Use Division (TS-768)

Tolerances have been established for alachlor and its metabolites in or on peanuts and other commodities. Alachlor [2-chloro-2',6'-diethyl-N-(methoxymethyl) acetanilide] is the active ingredient in LASSO Herbicide. Alachlor metabolites include those containing the diethylaniline (DEA) moiety and those containing the hydroxyethylethylaniline (HEEA) moiety.

Monsanto Company has submitted proposed analytical enforcement methodology for alachlor and its DEA and HEEA metabolites on raw agricultural commodities in response to the Alachlor Registration Standard. Previously submitted analytical methodology used glassware which was not commercially available or a chromatographic detector which was not available in the EPA or FDA District Laboratories.

A method validation is requested for 2 chemicals on 4 commodities. These two chemicals are representative metabolites of alachlor.

DEA metabolite: sodium salt of 2-[(2,6-diethylphenyl) (methoxymethyl)amino]-2-oxoethane sulfonic acid (tertiary amide sulfonic acid metabolite, containing the 2,6-DEA moiety)
Monsanto Code # CP 108065
EPA Code No. E 0033

HEEA metabolite: N-[2(1-hydroxyethyl)-6-ethylphenyl]-N-(methoxymethyl)-2-(methylsulfonyl) acetamide (hydroxy ethyl tertiary amide sulfone metabolite containing 2,6-HEEA moiety)

Monsanto Code No. CP 101394

EPA Code No. E 0032

Standards of diethyl aniline (DEA, available from Aldrich Chemical) and hydroxyethylethylaniline (HEEA, EPA Code NO. E0705) are needed as well. A small quantity of DEA is also available from the EPA Repository (EPA Code No. E0346).

Samples should be run in duplicate at the requested fortification levels (See attached table). Two copies of the appropriate method(s) along with recoveries and sample chromatograms are attached.

Please return the requested information on the attached forms and any other information concerning the method validation that we should be aware of, including copies of chromatograms for representative controls and fortified samples, standard curves, and sample calculations.

The EPA Repository was contacted on 5/27/87 (FTS 629- 3951). The standards for the tertiary amide sulfonic acid metabolite and the hydroxyethyl tertiary amide sulfone metabolite are available. The Repository code numbers are given above.

A short turnaround time is requested for this Method Validation. FDA has expressed an interest in the results of this method validation.

Please forward results of this method validation directly to Edward Zager.

Attachment: Tables (2 pp): attached to all copies

Attachment: Analytical Method: attached to copies to addressee (2 copies), K. Kissler, W. Bontoyan, P. Corneliussen (FDA), PMSD/ISB

cc: RF, circu, S. Hummel, M. Bradley, R. Thompson, FDA, Alachlor Reg. Std File (Boodee), PM#25, K. Kissler, W. Bontoyan, P. Corneliussen (FDA), MTO F., PMSD/ISB

RDI:EZ:07/06/88:RDS:07/18/88

TS-769:RCB:SVH:svh:RM810:CM#2:x77324:07/20/88

USE SEPARATE FORM FOR EACH METHOD

METHOD: (Report No. and/or/Title, date)

"Regulatory Enforcement Method for the Determination of Alachlor Residues in Raw Agricultural Commodities," A. G. Hackett, L. R. Holden, and J. A. Graham, Monsanto Agricultural Company Report No. MSL-7601, Monsanto R. D. No. 861, March, 1988, EPA MRID No. 405580-01.

This analytical method is different from previously submitted methods. It does not require the use of any custom made glassware used in previous methods. The sample workup is similar to that used with the custom made distillation apparatus. In this method, the distillation apparatus is made of stock glassware pieces. Following steam distillation and separation of DEA and HEEA, the DEA and HEEA are cleaned up on a disposable aminosilica column, and collected as separate fractions. The DEA is not derivatized. The HEEA is derivatized with acetyl chloride. DEA and HEEA-acetate are quantitated by Gas Chromatography with nitrogen selective detection.

Do not use control values for recovery corrections.

Do not report control values as 0; for less than limit of detection, report as such.

<u>Commodity</u>	<u>Chemical Added</u>	<u>PPM added</u>	<u>PPM found</u>	<u>%Recovery</u>
Corn	DEA metabolite	0.010		
	DEA metabolite	0.10		
	DEA metabolite	0.50		
Corn	HEEA metabolite	0.010		
	HEEA metabolite	0.10		
	HEEA metabolite	0.50		
Corn Fodder	DEA metabolite	0.010		
	DEA metabolite	0.20		
	DEA metabolite	2.0		
Corn Fodder	HEEA metabolite	0.010		
	HEEA metabolite	0.20		
	HEEA metabolite	2.0		
Peanuts	DEA metabolite	0.010		
	DEA metabolite	0.10		
	DEA metabolite	0.50		

<u>Commodity</u>	<u>Chemical Added</u>	<u>PPM added</u>	<u>PPM found</u>	<u>%Recovery</u>
Peanuts	HEEA metabolite	0.010		
	HEEA metabolite	0.10		
	HEEA metabolite	0.50		
Peanut Hay	DEA metabolite	0.010		
	DEA metabolite	0.20		
	DEA metabolite	2.0		
Peanut Hay	HEEA metabolite	0.010		
	HEEA metabolite	0.20		
	HEEA metabolite	2.0		

Note:

DEA metabolite=sodium salt of 2-[(2,6-diethylphenyl)(methoxymethyl)amino]-2-oxo-ethane sulfonic acid (tertiary amide sulfonic acid metabolite, containing 2,6-DEA moiety)

HEEA metabolite=N-[2(1-hydroxyethyl)-6-ethylphenyl]-N-(methoxymethyl)-2-(methylsulfonyl) acetamide (hydroxyethyl tertiary amide sulfone metabolite containing 2,6-HEEA moiety)

USE SEPARATE FORM FOR EACH METHOD

Modifications to method (major or minor)

Special Precautions to be taken:

Source of analytical reference:

If derivatized standard used, give source:

Instrumentation for quantitation:

Instrument for confirmation:

If instrument parameters differ from method given, list parameters used:

Commercial Source for any special chemicals or apparatus:

Comments:

Chromatograms: