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This DER was originally prepared under contract by Dynamac Corporation (1910 Sedwick Rd., Building 100, Suite B; Durham, NC 27713; submitted 2/20/2006). The DER has been reviewed by the HED and revised to reflect current OPP policies.

STUDY REPORTS:

44107103 Robinson, N. (1996) Acetochlor: Method for the Determination of Residues Containing the Common Moieties 2-Ethyl-6-methylaniline (EMA) and 2-(1-Hydroxyethyl)-6-methylaniline (HEMA) in Crops: Lab Project Number: RAM 280/01: RJ2075B. Unpublished study prepared by Zeneca Agrochemicals. 40 p.

44107104 Bolygo, E. (1996) Acetochlor: Validation of a Method for the Determination of Residues Containing the Common Moieties 2-Ethyl-6-methylaniline (EMA) and 2-(1-Hydroxyethyl)-6-methylaniline (HEMA) in Crops: Lab Project Number: 95JH225: RJ2075B: RAM 280/01. Unpublished study prepared by Zeneca Agrochemicals. 56 p.

45322102 Robinson, N. (1998) Standard Operating Procedure (RAM 280/02) Acetochlor: Method for the Determination of Residues Containing the Common Moieties 2-Ethyl-6-Methylaniline (EMA) and 2-(1-Hydroxyethyl)-6-Methylaniline (HEMA) in Crops: Lab Project Number: RAM280/02: 852-523. Unpublished study prepared by Zeneca Agrochemicals. 43 p.

EXECUTIVE SUMMARY:

A method description and validation data were provided for a GC/mass selective detector (MSD) method for determining EMA- and HEMA-type metabolites in plant commodities. This method (RAM 280/01 or 02) was used for the determining EMA and HEMA residues in sweet corn field trials, and rotational crop field trials and processing studies.

For this method, residues are extracted with acetonitrile:water (80:20, v/v), concentrated, and base hydrolyzed to yield EMA and HEMA, by refluxing with saturated potassium hydroxide and

0



methanol. The resulting hydrolysate is diluted with water and saturated sodium chloride, and residues of EMA and HEMA are partitioned into toluene. Residues are acylated with heptafluorobutyric acid anhydride, and partitioned against a sodium bicarbonate solution to remove the derivatizing agent. Residues are then analyzed by GC/MSD operating in the selective ion monitoring (SIM) mode, and using the 162 and 314 ions for quantifying EMA and HEMA, respectively. Residues are quantified by comparison to external standards. The LOQ is 0.01 ppm for both EMA and HEMA, or 0.02 ppm when expressed as acetochlor equivalents. The LOD was not reported.

EMA method validation average recoveries at the method LOQ of 0.01 ppm (0.02 ppm acetochlor equivalents) were $84\% \pm 24\%$ in sugar beet roots, $90\% \pm 9.0\%$ in sweet corn (kernel plus cob with husks removed), $100\% \pm 7.2\%$ in sweet corn forage, and $102\% \pm 7.0\%$ in soybean seed. Of the 16 individual samples at the LOQ, all were within the 70% - 120% acceptable recovery range with the exception of a single sugar beet root sample at 50%. Further, for the 32 method validation samples fortified with EMA at 0.05 ppm to 0.20 ppm in sugar beet and sweet corn matrices, recoveries were all within the acceptable 70% to 120% range for both individual samples and for fortification level averages. In addition, a total of 67 samples were fortified with EMA in conjunction with field trials on corn, sugar beets, dried peas, dried beans, sunflowers and potatoes. Corn grain (9), corn forage (12), corn stover (7), sugar beet roots (8), sugar beet tops (8), dried peas (4), dried beans (5), sunflower seeds (6), and potato tubers (8) were fortified at 0.2 - 0.10 ppm acetochlor equivalents. For all samples, recoveries were within the acceptable range of 70% - 120% with the exception of a single corn stover sample fortified with EMA at 0.1 ppm acetochlor equivalents with a recovery of 62%.

HEMA method validation average recoveries at the method LOQ of 0.01 ppm (0.02 ppm acetochlor equivalents) were $68\% \pm 10\%$ in sugar beet roots, $79\% \pm 7.3\%$ in sweet corn (kernel plus cob with husks removed), $69\% \pm 9.6\%$ in sweet corn forage, and $98\% \pm 5.3\%$ in soybean seed. Of the 16 individual samples at the LOQ, all were within the 70% - 120% acceptable recovery range with the exception of two sugar beet root samples with recoveries of 56% and 64% and two sweet corn forage samples with recoveries of 56% and 69%. Further, for the 32 method validation samples fortified with HEMA at 0.05 ppm to 0.20 ppm in sugar beet and sweet corn matrices, recoveries were all within the acceptable 70% to 120% range for both individual samples and for fortification level averages. In addition, a total of 67 samples were fortified with HEMA in conjunction with field trials on corn, sugar beets, dried peas, dried beans, sunflowers and potatoes. Corn grain (9), corn forage (12), corn stover (7), sugar beet roots (8), sugar beet tops (8), dried peas (4), dried beans (5), sunflower seeds (6), and potato tubers (8) were fortified at 0.2 - 0.10 ppm acetochlor equivalents. For all samples, recoveries were within the acceptable range of 70% - 120% with the exception of a corn forage sample fortified at 0.02 ppm acetochlor equivalents with a recovery of 63%, a corn forage sample fortified at 0.1 ppm acetochlor equivalents with a recovery of 46%, a sugar beet top sample fortified at 0.02 ppm acetochlor equivalents with a recovery of 61% and a sunflower seed sample fortified at 0.1 ppm acetochlor equivalents with a recovery of 65%.



No radiovalidation data was provided; however, the extraction scheme employed is significantly similar to the current enforcement method. Therefore, no additional radiovalidation data is required. RAM 280 has been adequately validated for data collection on a variety of plant matrices, including: corn grain, kernels plus cob with husks removed, forage, and stover, sugar beet roots and tops, soybean seeds, dried peas and beans, sunflower seeds, and potato tubers.

STUDY/WAIVER ACCEPTABILITY/DEFICIENCIES/CLARIFICATIONS:

Under the conditions and parameters used in the study, the analytical method residue data are classified as scientifically acceptable. The acceptability of this study for regulatory purposes is addressed in the forthcoming U. S. EPA document entitled *Acetochlor: Petitions for Tolerances on Sweet Corn and Rotational Crops of Nongrass Animal Feeds (Group 18), Sugar Beets, Dried Shelled Beans and Peas (Subgroup 6C), Sunflowers, Potatoes, Cereal Grains (Group 15), and Forage, Fodder, and Straw of Cereal Grains (Group 16). Summary of Analytical Chemistry and Residue Data.* (D. Davis, D230310).

COMPLIANCE:

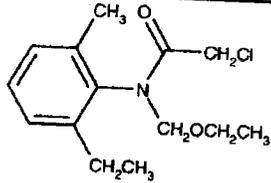
Signed and dated GLP, Quality Assurance and Data Confidentiality statements were provided. No deviations from regulatory requirements were reported.



A. BACKGROUND INFORMATION

Acetochlor is a chloroacetanilide herbicide used for preemergence control of weeds in corn. In the United States, acetochlor is conditionally registered for use on corn to the Acetochlor Registration Partnership (ARP), which is comprised of Monsanto and Dow AgroSciences. Acetochlor is formulated as a variety of emulsifiable concentrate (EC), emulsion in water (EW), microencapsulated (Mcap), or granular (G) formulations that can be applied to corn as a preplant, preemergence, or early postemergence application using only ground equipment. Tolerances are established for the combined residues of acetochlor and its ethyl methyl aniline- (EMA) and hydroxyethyl methyl aniline- (HEMA) producing metabolites, expressed as acetochlor equivalents [40 CFR §180.470]. Tolerances range from 0.05 to 1.5 ppm in/on corn commodities resulting from the direct use of acetochlor and from 0.02 to 1.0 ppm in commodities from rotational crops of sorghum, soybean, or wheat.

The ARP has submitted a petition (PP#6F4791) proposing the use of acetochlor (EC) on sweet corn and requesting tolerances on sweet corn commodities and tolerances for inadvertent residues in rotated non-grass animal feeds. The ARP has also proposed (PP#1F6263) tolerances for inadvertent residues in rotated dried peas and beans (subgroup 6C), sugar beets, sunflowers, potatoes, cereal grains (group 15, except corn and rice), and the forage, fodder, and straw of cereal grains (group 16, except corn and rice). In conjunction with these petitions, ARP has submitted a GC/MSD method for determining EMA and HEMA residues in crops.

Chemical structure	
Common name	Acetochlor
Molecular Formula	$C_{14}H_{20}ClNO_2$
Molecular Weight	269.8
IUPAC name	2-chloro-N-ethoxymethyl-6'-ethylacet-o-toluidide
CAS name	2-chloro-N-(ethoxymethyl)-N-(2-ethyl-6-methylphenyl)acetamide
CAS #	34256-82-1
PC Code	121601
End-use Product	7.5 lb/gal EC



Parameter	Value	Reference
Boiling point/range	163 °C at 10 mm Hg; decomposition occurs before the boiling point at atmospheric pressure; (calculated by extrapolation of vapor pressure at lower temperature)	Acetochlor HED Chapter of the TRED, 3/1/06
pH	4.41, 1% solution in acetone:water (1:1, v:v)	
Density at 20 °C	1.123 g/mL	
Water solubility at 25 °C	223 mg/L	
Solvent solubility at 25 °C	Infinitely soluble in acetone, benzene, carbon tetrachloride, ethanol, chloroform, and toluene	
Vapor pressure at 25 °C	0.045 µHg (4.5×10^{-5} mm Hg)	
Dissociation constant, pK_a	Not applicable because acetochlor is neither an acid nor a base.	
Octanol/water partition coefficient	970 or 1082	
UV/visible absorption spectrum	Not available	

Metabolite Type	Structure
EMA-type metabolites	
HEMA-type metabolites	



B. MATERIALS AND METHODS

B.1. Data-Gathering Method

A GC/MSD method (Zeneca Method RAM 280/01 and 02) was used for determining residues of acetochlor metabolites containing the EMA and HEMA moieties in the sweet corn field trials and field rotational crop trials. The method is described in MRIDs 44107103 and 45322102, and the original method validation data are reported in MRID 44107104.

B.1.1. Principle of the Method

Residues are extracted with acetonitrile (ACN):water (80:20, v/v), filtered or centrifuged, and concentrated. Residues are then base hydrolyzed by refluxing in saturated aqueous potassium hydroxide and methanol for 30-60 minutes to yield EMA and HEMA. After cooling, the hydrolysate is diluted with water and saturated sodium chloride, and residues of EMA and HEMA are partitioned into toluene. Residues are derivatized with heptafluorobutyric acid anhydride to acylate the EMA and HEMA. The derivatizing agent is removed by partitioning with a sodium bicarbonate solution, and residues are then analyzed by GC/MSD operating in the SIM (selected ion monitoring) mode. Residues are detected by scanning for the m/z (mass to charge ratio) 331 and 162 ions for EMA residues and 329 and 314 m/z ions for HEMA residues. Residues were quantified using 162 and 314 ions for EMA and HEMA residues, respectively, by comparison with acylated EMA and HEMA standards. The LOQ is 0.01 ppm for both EMA and HEMA, or 0.02 ppm when expressed as acetochlor equivalents. The LOD was not reported.

TABLE B.1.1. Summary Parameters for the Analytical Method Used for the Quantitation of Residues of Acetochlor Common Moieties EMA and HEMA in Plant Matrices.

Method ID	RAM 280/01 or 02
Analytes	Metabolites containing the EMA or HEMA moieties
Extraction solvent/technique	extract with ACN-water, and base hydrolyzed by refluxing with saturated potassium hydroxide and methanol
Cleanup strategies	Saturated sodium chloride and water are added to the hydrolysate, and residues of EMA and HEMA are then partitioned into toluene
Instrument/Detector	GC using fused silica capillary column, Rtx200 (25-m x 0.25-mm id, 0.25- μ m film thickness), with mass selective (MS) detection operating in the SIM mode. The m/z 331 and 162 ions are monitored for EMA and the m/z 329 and 314 ions are monitored for HEMA.
Standardization method	External standards
Stability of std solutions	Standard solutions are to be stored frozen (<-10°C); standards are reportedly stable under these conditions and were used prior to the labeled expiration date.
Retention times	Approximately 10.8 minutes for EMA and 8.3 minutes for HEMA.



B.1.2. Method Validation

For the method validation trial, control samples of sugar beet roots, sweet corn, sweet corn forage, and soybean seeds were separately fortified with EMA- and HEMA-type metabolites at 0.01, 0.05, 0.10 and 0.20 ppm. The metabolites used for fortification were sodium 2-sulfonato-*N*-ethoxymethyl-6'-ethylacet-*o*-toluidide (EMA-type metabolite) and 2-hydroxy-*N*-ethoxymethyl-6'-(1-hydroxyethyl)acet-*o*-toluidide (HEMA-type metabolite). The fortified samples were analyzed along with control samples using the procedures described above.

In addition, the above method was also validated in conjunction with the sweet corn field trials and the rotational crop field trials using control samples fortified with each type of metabolite at 0.02-0.20 ppm.

B.2. Enforcement Method

A tolerance enforcement method is available for determining residues of acetochlor and its EMA and HEMA producing metabolites in corn commodities. The method is an HPLC method using an oxidative coulometric electrochemical detector (OCED) and is listed as Method I in PAM Vol. II (180.470).

For this method, residues are solvent extracted into aqueous acetonitrile, concentrated, and base hydrolyzed to yield EMA and HEMA. The resulting residues are steam-distilled into dilute acid, adjusted to a basic pH, and partitioned into methylene chloride. HEMA is methylated using acidic methanol and residues of EMA and methylated HEMA (MEMA) are separated and determined using HPLC/OCED. Residues of EMA and HEMA are expressed in acetochlor equivalents and the validated method LOQ is 0.02 ppm for each analyte.

C. RESULTS AND DISCUSSION

C.1. Data-Gathering Method

EMA method validation average recoveries at the method LOQ of 0.01 ppm (0.02 ppm acetochlor equivalents) were 84% ± 24% in sugar beet roots, 90% ± 9.0% in sweet corn (kernel plus cob with husks removed), 100% ± 7.2% in sweet corn forage, and 102% ± 7.0% in soybean seed. Of the 16 individual samples at the LOQ, all were within the 70% - 120% acceptable recovery range with the exception of a single sugar beet root sample at 50%. Further, for the 32 method validation samples fortified with EMA at 0.05 ppm to 0.20 ppm in sugar beet and sweet corn matrices, recoveries were all within the acceptable 70% to 120% range for both individual samples and for fortification level averages. In addition, a total of 67 samples were fortified with EMA in conjunction with field trials on corn, sugar beets, dried peas, dried beans, sunflowers and potatoes. Corn grain (9), corn forage (12), corn stover (7), sugar beet roots (8), sugar beet tops (8), dried peas (4), dried beans (5), sunflower seeds (6), and potato tubers (8) were fortified at 0.2 - 0.10 ppm acetochlor equivalents. For all samples, recoveries were within the acceptable



range of 70% - 120% with the exception of a single corn stover sample fortified with EMA at 0.1 with a recovery of 62%.

HEMA method validation average recoveries at the method LOQ of 0.01 ppm (0.02 ppm acetochlor equivalents) were 68% ± 10% in sugar beet roots, 79% ± 7.3% in sweet corn (kernel plus cob with husks removed), 69% ± 9.6% in sweet corn forage, and 98% ± 5.3% in soybean seed. Of the 16 individual samples at the LOQ, all were within the 70% - 120% acceptable recovery range with the exception of two sugar beet root samples with recoveries of 56% and 64% and two sweet corn forage samples with recoveries of 56% and 69%. Further, for the 32 method validation samples fortified with HEMA at 0.05 ppm to 0.20 ppm in sugar beet and sweet corn matrices, recoveries were all within the acceptable 70% to 120% range for both individual samples and for fortification level averages. In addition, a total of 67 samples were fortified with HEMA in conjunction with field trials on corn, sugar beets, dried peas, dried beans, sunflowers and potatoes. Corn grain (9), corn forage (12), corn stover (7), sugar beet roots (8), sugar beet tops (8), dried peas (4), dried beans (5), sunflower seeds (6), and potato tubers (8) were fortified at 0.2 - 0.10 ppm acetochlor equivalents. For all samples, recoveries were within the acceptable range of 70% - 120% with the exception of a corn forage sample fortified at 0.02 ppm acetochlor equivalents with a recovery of 63%, a corn forage sample fortified at 0.1 ppm acetochlor equivalents with a recovery of 46%, a sugar beet top sample fortified at 0.02 ppm acetochlor equivalents with a recovery of 61% and a sunflower seed sample fortified at 0.1 ppm acetochlor equivalents with a recovery of 65%.

HED notes that the extraction scheme employed for this method is substantially similar to the approved enforcement method extraction scheme; therefore, no radiovalidation is needed to demonstrate this analytical method's ability to extract field weathered residues.

Individual sample recoveries for EMA and HEMA are shown in the table below.

TABLE C.1.1. Recovery Results from Method Validation of Plant Matrices using the GC/MSD Data-Gathering Analytical Method (RAM 280/01).

Matrix	Spiking Level (ppm)	Sample size	EMA		HEMA	
			Recoveries (%)	Mean Recovery ± SD	Recoveries (%)	Mean Recovery ± SD
Method Validation¹						
Sugar beet roots	0.01	4	50, 84, 92, 108	84 ± 24	56, 64, 74, 79	68 ± 10
	0.05	2	78, 98	n/a	83, 84	n/a ⁴
	0.10	2	88, 100	n/a	84, 87	n/a
	0.20	2	95, 103	n/a	96, 102	n/a
Sweet corn, kernels plus cob with husks removed	0.01	4	79, 91, 91, 101	90 ± 9.0	72, 76, 78, 89	79 ± 7.3
	0.05	2	85, 87	n/a	72, 86	n/a
	0.10	2	88, 94	n/a	85, 97	n/a



TABLE C.1.1. Recovery Results from Method Validation of Plant Matrices using the GC/MSD Data-Gathering Analytical Method (RAM 280/01).

Matrix	Spiking Level (ppm)	Sample size	EMA		HEMA	
			Recoveries (%)	Mean Recovery \pm SD	Recoveries (%)	Mean Recovery \pm SD
Sweet corn forage	0.20	2	91, 91	n/a	94, 98	n/a
	0.01	4	92, 97, 101, 109	100 \pm 7.2	56, 69, 79, 72	69 \pm 9.6
	0.05	2	93, 100	n/a	74, 89	n/a
	0.10	2	96, 99	n/a	76, 89	n/a
	0.20	10	92, 95, 87, 88, 87, 80, 97, 75, 99, 90	89 \pm 7.4	90, 98, 91, 86, 84, 77, 95, 73, 97, 92	88 \pm 8.3
Soybean seeds	0.01	4	96, 99, 101, 112	102 \pm 7.0	93, 95, 102, 104	98 \pm 5.3
	0.05	2	85, 106	n/a	85, 89	n/a
	0.10	2	93, 101	n/a	103, 116	n/a
	0.20	2	81, 92	n/a	112, 116	n/a
Concurrent Method Recovery ^{2,3}						
Corn grain	0.02	3	71, 74, 82	76 \pm 5.7	86, 71, 90	82 \pm 10
	0.05	3	86, 87, 79	84 \pm 4.3	118, 80, 99	99 \pm 19
	0.10	3	84, 50, 84	73 \pm 20	120, 80, 96	99 \pm 20
Corn forage	0.02	4	102, 91, 72, 104	92 \pm 15	73, 72, 63, 81	72 \pm 7.3
	0.05	4	76, 95, 93, 104	92 \pm 12	76, 78, 77, 87	80 \pm 5.1
	0.10	4	82, 94, 93, 108	94 \pm 11	81, 46, 96, 96	80 \pm 24
Corn stover	0.02	2	104, 74	n/a	78, 103, 86	89 \pm 13
	0.05	5	83, 84, 77, 78, 114	87 \pm 15	76, 106, 94, 88, 94	92 \pm 11
	0.10	4	90, 62, 84, 90	82 \pm 13	85, 80, 78, 101	86 \pm 10
Sugar beet roots	0.02	4	116, 89, 77, 81	91 \pm 18	75, 80, 89, 100	86 \pm 11
	0.10	4	104, 85, 84, 113	96 \pm 14	89, 111, 87, 91	94 \pm 11
Sugar beet tops	0.02	4	87, 88, 71, 99	86 \pm 12	61, 71, 79, 96	77 \pm 15
	0.10	3	92, 83, 118	98 \pm 18	72, 81, 109	87 \pm 19
	0.20	1	107	n/a	90	n/a
Dried peas	0.02	2	71, 79	n/a	80, 79	n/a
	0.10	2	103, 127	n/a	99, 109	n/a
Dried beans	0.02	2	89, 105	n/a	78, 85	n/a
	0.05	2	109, 92	n/a	96, 89	n/a



TABLE C.1.1. Recovery Results from Method Validation of Plant Matrices using the GC/MSD Data-Gathering Analytical Method (RAM 280/01).

Matrix	Spiking Level (ppm)	Sample size	EMA		HEMA	
			Recoveries (%)	Mean Recovery \pm SD	Recoveries (%)	Mean Recovery \pm SD
Sunflower seed	0.10	1	115	n/a	105	n/a
	0.02	3	86, 84, 82	84 \pm 2.0	72, 95, 80	82 \pm 12
	0.10	3	79, 74, 85	79 \pm 5.5	65, 88, 80	78 \pm 12
Potato tuber	0.02	4	77, 91, 88, 92	87 \pm 6.9	83, 91, 93, 89	89 \pm 4.3
	0.10	4	86, 89, 90, 95	90 \pm 3.7	89, 88, 93, 93	91 \pm 2.6

¹ Spiking levels for the method validation are expressed as either EMA or HEMA concentrations

² Spiking levels for the concurrent fortifications are expressed as acetochlor equivalents.

³ The concurrent method recovery data for all plant matrices are identical to those submitted with the field trial studies and field rotational crop studies (46010501.DER through 46010509.DER).

⁴ n/a is "not applicable"



TABLE C.1.2. Characteristics for the Data-Gathering Analytical Method Used for the Quantitation of Acetochlor Residues in Plant Matrices.

Analytes	Metabolites containing the EMA or HEMA moieties
Equipment ID	Hewlett-Packard Model 5890 GC and 5970 or 5971 MSD; Rtx200 column with a retention gap (30m x 0.25 mm id, 0.25 µm film thickness)
Limit of quantitation (LOQ)	0.01 ppm for EMA and HEMA; or 0.02 ppm, expressed in acetochlor equivalents
Limit of detection (LOD)	Not reported
Accuracy/Precision	Average method recoveries were 90-97% for EMA and 81-102% for HEMA, with relatively low standard deviations ($\pm 6-17\%$) for sugar beet roots, sweet corn kernels, sweet corn forage, and soybean seeds.
Reliability of the Method/ [ILV]	An independent laboratory method validation [ILV] of the proposed data collection method has not been conducted to verify the reliability of the method for the determination of residues of EMA and HEMA in plant commodities. However, the concurrent recovery values obtained in the sweet corn field trials and rotational crop field trials indicate that the method is reliable.
Linearity	Example standard curves for EMA and HEMA at concentrations of 0.01-0.20 µg/mL had correlation coefficients of >0.999 .
Specificity	The control chromatograms generally have no peaks above the chromatographic background and the spiked sample chromatograms contain only the analyte peak of interest. Peaks were well defined and symmetrical. There appeared to be no carryover to the following chromatograms.

C.2. Enforcement Method

The HPLC/OECD enforcement method for plant commodities has been adequately validated by the Agency, and is available in PAM Vol. II (180.470).

C.3. Independent Laboratory Validation

An independent laboratory validation (ILV) of the data collection method has not been conducted. The method was used only for data collection and is not being proposed for enforcing tolerances. Therefore, an ILV trial is not required.

D. CONCLUSION

EMA method validation average recoveries at the method LOQ of 0.01 ppm (0.02 ppm acetochlor equivalents) were $84\% \pm 24\%$ in sugar beet roots, $90\% \pm 9.0\%$ in sweet corn (kernel plus cob with husks removed), $100\% \pm 7.2\%$ in sweet corn forage, and $102\% \pm 7.0\%$ in soybean seed. Of the 16 individual samples at the LOQ, all were within the 70% - 120% acceptable recovery range with the exception of a single sugar beet root sample at 50%. Further, for the 32 method validation samples fortified with EMA at 0.05 ppm to 0.20 ppm in sugar beet and sweet corn matrices, recoveries were all within the acceptable 70% to 120% range for both individual samples and for fortification level averages. In addition, a total of 67 samples were fortified with EMA in conjunction with field trials on corn, sugar beets, dried peas, dried beans, sunflowers



and potatoes. Corn grain (9), corn forage (12), corn stover (7), sugar beet roots (8), sugar beet tops (8), dried peas (4), dried beans (5), sunflower seeds (6), and potato tubers (8) were fortified at 0.2 – 0.10 ppm acetochlor equivalents. For all samples, recoveries were within the acceptable range of 70% - 120% with the exception of a single corn stover sample fortified with EMA at 0.1 ppm acetochlor equivalents with a recovery of 62%.

HEMA method validation average recoveries at the method LOQ of 0.01 ppm (0.02 ppm acetochlor equivalents) were $68\% \pm 10\%$ in sugar beet roots, $79\% \pm 7.3\%$ in sweet corn (kernel plus cob with husks removed), $69\% \pm 9.6\%$ in sweet corn forage, and $98\% \pm 5.3\%$ in soybean seed. Of the 16 individual samples at the LOQ, all were within the 70% – 120% acceptable recovery range with the exception of two sugar beet root samples with recoveries of 56% and 64% and two sweet corn forage samples with recoveries of 56% and 69%. Further, for the 32 method validation samples fortified with HEMA at 0.05 ppm to 0.20 ppm in sugar beet and sweet corn matrices, recoveries were all within the acceptable 70% to 120% range for both individual samples and for fortification level averages. In addition, a total of 67 samples were fortified with HEMA in conjunction with field trials on corn, sugar beets, dried peas, dried beans, sunflowers and potatoes. Corn grain (9), corn forage (12), corn stover (7), sugar beet roots (8), sugar beet tops (8), dried peas (4), dried beans (5), sunflower seeds (6), and potato tubers (8) were fortified at 0.2 – 0.10 ppm acetochlor equivalents. For all samples, recoveries were within the acceptable range of 70% - 120% with the exception of a corn forage sample fortified at 0.02 ppm acetochlor equivalents with a recovery of 63%, a corn forage sample fortified at 0.1 ppm acetochlor equivalents with a recovery of 46%, a sugar beet top sample fortified at 0.02 ppm acetochlor equivalents with a recovery of 61% and a sunflower seed sample fortified at 0.1 ppm acetochlor equivalents with a recovery of 65%.

No radiovalidation data was submitted, however, the extraction scheme employed is substantially similar to that in the current enforcement method; therefore, additional radiovalidation data are not required.

The GC/MSD method (RAM 280/01 or 02) has been adequately validated for collecting data on residues of EMA- and HEMA-type metabolites in plant commodities.

E. REFERENCES

DP Barcode: D292336
Subject: **ACETOCHLOR**. Revised HED Chapter of the Tolerance Reassessment Eligibility Decision (TRED) Document.
From: A. Protzel
To: F. Fort
Dated: 6/1/06
MRID(s): None



F. DOCUMENT TRACKING

RDI: D. Davis (3/13/06); T. Goodlow (3/16/06)
Petition Number(s): 6F4791 and 1F6263
DP Barcode(s): D230310 and D275019
PC Code: 121601