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

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OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: Sodium Acifluorfen. Peanut Storage Stability Study Progress Report.
Reregistration Case No. 2605. Chemical No. 114402 MRID #43290101
DP Barcode D205090 CBRS #13998

FROM: Steven A. Knizner, Chemist *St. A. Knizner*
Special Review Section I
Chemistry Branch II - Reregistration Support
Health Effects Division (7509C)

THRU: Andrew Rathman, Section Head *ARR*
Special Review Section I
Chemistry Branch II - Reregistration Support
Health Effects Division (7509C)

TO: Thomas Luminello, Jr., PM Team 52
Special Review and Reregistration Division (7508W)

In the Phase 4 Review (S.Funk, 2/14/91) of sodium acifluorfen, the Agency required storage stability data for peanuts and its processed commodities depicting residues of acifluorfen and its amine analog, the free acid, and the methyl ester. BASF, the registrant, has supplied a progress report (MRID #43290101) describing their activities in this regard. This interim report is reviewed below.

The due date for the peanut storage stability studies was June, 1994. The registrant stated that a time extension request has been submitted with a proposed due data of May 31, 1995 for the data on nutmeat, meal, and oils, and a proposed due date of April 30, 1996 for hulls. The request for time extension was justified based on analytical methodology problems encountered.

Conclusions

Storage stability data for an interval of 18 and 13 months respectively are required for the rac and peanut processed commodities. Based on the 3 and 6 month stability data, it appears



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that acifluorfen amine may not be stable in nutmeat, and based on the 6 month stability data, it appears that acifluorfen amine may also not be stable in peanut meal.

New peanut magnitude of the residue and processing studies may be required if acifluorfen and its related regulated compounds are not stable over 18 months in the rac or 13 months in peanut processed commodities.

CBRS has no objections to the requested time extensions. CBRS recognizes that the granting of time extensions is under the purview of SRRD.

Detailed Considerations

Studies depicting the magnitude of the residue in peanut racs were performed by Rohm and Haas, the original registrant. Initiation of storage stability studies in support of these magnitude of the residue studies was delayed when BASF analysts encountered apparent storage stability problems in rice and soybeans. Analysts were using an extraction procedure based on the Rhone-Poulenc enforcement analytical method. Using this method, recoveries of analytes were not adequate.

BASF representatives met with CBRS on 5/17/94 to describe the analytical problems and newly developed extraction schemes to overcome these problems (S.Knizner, 7/5/94, CBRS #13925). Briefly, the new extraction procedure (Method D9205) involves incorporation of a soaking step using 0.5 N NaOH prior to extraction with acidic acetonitrile. Acifluorfen and its methyl ester are determined jointly by GC analysis after methylation of the acid. The amine and methyl ester of the amine are determined directly by LC analysis using a fluorescence detector.

Preliminary Results

Table 1 summarizes storage stability results for acifluorfen and its related regulated compounds at up to 6 months of frozen storage. Based on the 3 and 6 month stability data, it appears that acifluorfen amine may not be stable in nutmeat, and based on the 6 month stability data, it appears that acifluorfen amine may also not be stable in peanut meal.

Table 1. Preliminary Results for Peanut Storage Stability Study. Matrices were fortified with the four analytes at 0.2 ppm each, except for crude oil which was fortified at 0.4 ppm.

Matrix	GC or LC	Analyte ^a	0 Day (% recovery)		3 Month (% recovery)		6 Month (% recovery)	
			Procedural	Stored ^b	Procedural	Stored	Procedural	Stored
Nutmeat	GC	1	77	85	87	85	76	81
		2	80	96	107	84	95	85
	LC	3	66	74	97	47	80	37
		4	69	89	87	67	102	81

Matrix	GC or LC	Analyte ^a	0 Day (% recovery)		3 Month (% recovery)		6 Month (% recovery)	
Meal	GC	1	103	95	92	84	71	64
		2	96	93	86	81	71	75
	LC	3	86	93	97	92	101	56
		4	79	82	88	77	95	82
Hulls	GC	1	76	84	76	64	76	58
		2	89	89	84	64	100	65
	LC	3	Method development in progress. Large interferences noted with LC analysis.					
		4						
Crude Oil	GC	1	69	71	77	72	87	66
		2	98	89	87	82	90	85
	LC	3	75	76	94	96 ^c	76	91
		4	90	94	88	86	103	98
Refined Oil	GC	1	76	83	67	60	e	
		2	100	95	79	75		
	LC	3	91	85	82	d		
		4	77	94	77	83		
^a Analyte 1 = acifluorfen, analyte 2 = acifluorfen methyl ester, analyte 3 = acifluorfen amine, analyte 4 = acifluorfen amine methyl ester. ^b Recoveries are the average of two replicates. ^c Value is from a single analysis. ^d Analysis must be repeated. ^e Not yet analyzed.								

cc: S.F., circ., R.F., List B File, S.Knizner
RDI: A. Rathman, 8/11/94 M.Metzger, 8/12/94 E.Zager, 8/12/94
7509C:CBRS:CM#2:305-6903:SAK:sak:Acifluor:8/11/94

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