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

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

December 14, 1998

Subject: Cloransulam-Methyl Amended Registration For EPA Reg. # 62719-275. Addition of Post-Emergence Application Rate Up To 0.6 oz formulation/A (0.5 oz ai/A).
S549473/D249972. Letter Dated 9/18/98.
Field Residue Studies - MRID # 436689-30; MRID # 446322-01

To: Jim Stone, Team 25
Herbicide Branch, RD 7505C

From: Philip V. Errico, Chemist
Herbicide Branch, RD 7505C

Dow Elanco has requested an amended registration for FirstRate (cloransulam-methyl) to increase the post application rate from 0.3 oz formulation/A (0.25 oz ai/A) to 0.6 oz formulation/A (0.5 oz ai/A). The soil application (preplant or pre-emergent) rate up to 0.75 oz/A (0.63 oz ai/A), a maximum seasonal rate (soil or/and post-emergence applications) of 1.05 oz formulation (1 oz ai/A), a PHI of 14 days for harvested soybean forage or hay, and a PHI of 65 days for harvested soybean seed remain unchanged. According to the letter of 9/18/98 the increase rate of 0.6 oz formulation/A post-emergence will provide control for sicklepod and extend control of ragweed.

Two studies were provided for the review of this amended registration request. One with MRID # 436689-30, which was also submitted with PP# 5F4560 (J.Garbus, 8/29/96). The other study with MRID# 446322-01, is titled "Magnitude of Residue of DE-565 Applied Post-emergence to Soybeans", H.G. Bolles and A.M. Phillips, Study ID - RES96028, May 16, 1997.

Study with MRID # 436689-30

Field residue data on soybean seed, only, were submitted from Arkansas, Georgia, Iowa, Illinois, Indiana, Minnesota, Mississippi, North Dakota, Ohio, and Wisconsin. Soybeans were treated with a formulation containing 83.9% cloransulam-methyl. Two samples represented preplant soil treatment at 43.2 and 44 g ai/ha (0.63 oz ai/A). The PHI's were 145 and 147 days. respectively. One sample each represented treatment post-emergence to soybeans at 51.5 and 86.9 g ai/ha (0.74 and 1.24 oz ai/A). The PHI's were 92 days. The remaining samples were treated post-emergence to soybeans at 17.2 - 17.8 g ai/ha (0.25 oz ai/A). and had reported PHI's of 92 - 118 days.

Samples were analyzed for parent only using the enforcement. The tolerance expression includes the parent compound and its acid, cloransulam. Conversations with the analytical chemists at the EPA Analytical Chemistry Laboratory, Beltsville, indicate that the acid was not validated using the cloransulam-methyl enforcement method, but the acid should also be determined using this method. But the only way to be sure would be to run an analytical method validation using the acid compound. The Registrant stated in a telephone conversation (12/11/ 98) with this reviewer, that the enforcement method was only developed for cloransulam-methyl. The acid was not included, because the free acid was not seen in plants (<10%). It is found in soil. The acid was found in plants as the homoglutathione conjugate. Sample recoveries for the parent compound were reported as 75 - 110% for soybean grain samples spiked with cloransulam-methyl at 0.01 to 0.25 ppm. The LOD is 0.003 ppm, and the LOQ is 0.01 ppm. Representative chromatograms were submitted.

Samples were stored for 330 - 369 days before analysis. No storage stability data was submitted with this request to support the reported storage period. A review dated 10/23/97 (ID# 62719-ETL, Brenda Tarplee) stated that submitted storage stability data for soybean forage, hay and seed indicated that cloransulam-methyl was stable under frozen storage conditions for up to 375 days.

Soybean grain had no detectible residues (<0.003 ppm).

Study with MRID# 446322-01

The second study submitted with this action, MRID # 446322-01, titled 'Magnitude of Residue of DE-565 Applied Post-emergence to Soybeans' by H.G. Bolles and A.M. Phillips, Study ID: RES96028, and dated May16, 1997. Global Environmental Chemistry Laboratory, Indianapolis, IN 46268-1053 was the performing laboratory.

The registrant has submitted magnitude of the residue results for soybean seed generated from 20 sites in 15 soybean producing States. No data for forage or hay was submitted in this study. The States represented are AR, IL, IN, IA, KS, LA, MI, MN, MS, MO, NE, NC, OH, SC, and WI. Soybeans were treated postemergence to soybeans at growth stages V2 - V3 to V7 - V8 and R1 to R4. Plant height varied from 6 inches to 44 - 46 inches. The postemergent application rate was reported as 34 to 36 g a.i./ha (0.49 to 0.51 oz a.i./A). The spray solution contained cloransulam-methyl, X-77 (approximately 0.125% v/v) and urea ammonium nitrate (2.5% v/v) in water. The compound was applied at the majority of sites in 17.3 - 22.1 gal mix/A. At one site 10.2 gal mix/A was used, at another site 25 gal mix/A was used. PHI's were reported as 70 to 87 days, with three sites at 90 - 105 days PHI. Samples were stored 102 to 149 days before analysis. Storage stability data has previously been submitted showing that cloransulam-methyl is stability for this storage period (J.Garbus, PP#5F4560, 8/29/96, and B. Tarplee, ID# 062719-ETL, 10/23/97). Samples were analyzed using the enforcement method with the LOD = 0.003 ppm, and the LOQ = 0.01 ppm. Recovers were reported as 55 - 90% for samples spiked at 0.01, 0.05, and 0.1 ppm cloransuam-methyl. Representative chromatograms were submitted. All treated samples were reported as < 0.003 ppm.

For this chemical, it is reasonable to assume that the postemergent use, especially in the vegetative stage of plant growth, will be the major contributor to any potential residue on harvested crop. No

field residue data was submitted with this amended registration request or was previously reviewed in prior actions on this chemical which reflect the requested postemergence use up to 0.504 oz a.i./A and PHI's of 14 days for soybean forage and hay, and 65 days for soybean grain. However, the field residue data reviewed above, and field residue data with MRID# 436689-29 submitted in PP#5F4560 (J. Garbus, 8/29/96) for soybean grain could support this higher postemergence rate for the established tolerance of 0.02 ppm if the present PHI is increased from 65 days to 70 days. The submitted field residue data could also support the requested higher postemergence rate for soybean forage and hay with the established tolerances of 0.1 ppm in/on soybean forage and 0.2 ppm in/on soybean hay, if the present PHI is raised from 14 days to 25 days.