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DATA EVALUATION RECORD

STUDY IDENTIFICATION:

Clouser, A. R. 1992. Reanalysis of Soil Samples from North Carolina, 1988 Season for Residues of SAN 582 H and Oxalamide. Field test contracted to Stewart Agricultural Research Services, Inc., Macon, Missouri. Laboratory analyses performed by the Analytical Sciences Section of Sandoz Crop Protection Corporation, Des Plaines, Illinois. MRID No. 422662-04, vol. 1-3.

TYPE OF STUDY: Terrestrial Field Dissipation

REVIEWED BY:

George Tompkins, Entomologist
Review Section 1, EFGWB, EFED

Signature: *George Tompkins*
Date:

APPROVED BY:

Paul J. Mastradone, Section Chief
Review Section 1, EFGWB, EFED

Signature: *Paul J. Mastradone*
Date:

CONCLUSIONS:

1. This study is satisfactory and partially satisfies the data requirements for a terrestrial field dissipation study.
2. SAN 582 H dissipated with a reported half-life of approximately 8 days from a field planted to corn in North Carolina that was treated with SAN 582 H preemergence at a rate of 1.27 lb ai/A. The SAN 582 H oxalamide metabolite was not detected in any samples at any sampled depth.
3. The information provided in this report indicates that SAN 582 H did not readily leach in this field dissipation study and that it degraded rapidly. Both SAN 582 H and its oxalamide metabolite appear to have little potential for accumulation or leaching in this soil.

MATERIALS AND METHODS:

Prequalifying soil cores from the proposed site near Lucama, North Carolina were analyzed by Sandoz Crop Protection Corporation (SCPC), Residue Chemistry for SAN 582 H. Treatments were applied only after prequalifying sample analysis was completed and the site was shown to be free of SAN 582 H. The

study site was disked to a depth of 6 inches on 18 April 1988 and tilled 18 inches deep with a chisel plow and disked 4 inches deep on 13 May 1988 and disked 4 inches again on 23 May 1988. On 26 May 1988 corn was planted on the plots at a rate of 21,000 seeds/acre using a row spacing of 36 inches. The study consisted of three treatment 20 ft x 42 ft plots and a control plot which had a sandy loam soil (58% sand, 14% clay, 28% silt, pH 6.4, and a CEC of 5.3 meq/100 g soil, organic content 2.5%; see Table I for soil characteristics at lower depths). SAN 582 H was applied preemergence to the treatment plots on 27 May 1988 at a rate of 1.27 lbs ai/acre to the surface of the soil using a CO₂ pressurized fixed boom backpack sprayer containing four 8002 LP flat fan nozzles which were spaced 18 inches apart. The nozzle tips were suspended 18 inches above the soil surface. The sprayer had been calibrated and adjusted on 3 May 1988 to deliver 20.6 gal/A at 3 mph, a spray width of 6 ft and a pressure of 18 psi.

Treated and check plots were divided into subplot matrices and soil samples were collected from randomly selected subplots. Samples were collected between the two rows of corn in each subplot. Soil samples were collected just prior to and immediately after application and on days 1, 3, 8, 15, 28, and 56 after application and 3, 4, 5, 12, and 18 months after treatment. Soil cores were taken down to 30 cm at early sampling intervals through the 28 day samples. At 56 days after treatment until 4 months 60 cm cores were taken and 90 cm cores were taken at 5, 12, and 18 months. A tractor mounted probe with clean plastic liners was used for the sampling.

Soil samples were cut into 10 cm pieces and combined by depth into composite samples. The soil from the corresponding sections of the sample cores was combined in a plastic bag and thoroughly mixed. An aliquot of each composite sample was taken for analysis. The samples were analyzed for SAN 582 H and oxalamide according to SCPC residue method AM-0865-0791-0 (Appendix IX). A check sample and a fortified check sample were analyzed with each batch of treated samples. Batches in which the recovery of SAN 582 H or oxalamide was below 68% or above 120% were reanalyzed for the compound which was not within the 68-120% recovery. Samples were analyzed by GC using a nitrogen phosphorous detector (NPD). Quantitation of samples in which interference peaks were present was confirmed by using GC using a mass selection detector (MSD).

REPORTED RESULTS:

1. SAN 582 H dissipated with a half-life of approximately 8 days from a field planted to corn in North Carolina that was treated with SAN 582 H preemergence at a rate of 1.27 lb ai/A. SAN 582 H was detected (detection limit 0.01 ppm) in the 0-10 cm soil depth segment until 56 days after treatment. SAN 582 H was detected at day 0 and day 3 in the 10-20 cm soil segment, but not on day 1. SAN 582 H was detected on day 3 in the 20-30 cm soil segment but not in the 0-10 or 10-20 cm soil segment (Table XIV).

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2. Oxalamide was not detected in any samples at any depth and this absence was confirmed by GC/MSD.

DISCUSSION:

1. The 28 day interval 0-10 cm check samples was found to be contaminated with SAN 582 H with background levels of 0.021 and 0.010 ppm found. The residue was confirmed to be SAN 582 H GC/MSD.

2. Check samples of SAN 582 H were fortified at levels of 0.1, 0.05, and 0.01 ppm. The average percent recovery was 88.3%. Two samples were fortified at the limit of detection (0.01 ppm) and recoveries of 99.5% and 82.8% were reported. Oxalamide was used to fortify check samples at 0.1 and 0.01 ppm. The average recovery was 90%. At the limit of detection (0.01 ppm) recoveries of 101 and 74.8% were reported.

3. SAN 582 H was detected at day 0 and day 3 after treatment in the 10-20 cm soil segment but not on day 1. On day 3 SAN 582 H was found in the 20-30 cm segment but not in the 0-10 or 10-20 cm soil segments. Reportedly these detections were considered as contamination of the lower soil segment by the probe as it passed through the top cm of soil and carried with it small amounts of high residue surface soil.

4. The information reported in this study indicates that SAN 582 H did not leach readily in this field study. SAN 582 H appeared to degrade rapidly and both SAN 582 H and its oxalamide metabolite appeared to have little potential for accumulation or leaching.

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