

DATA EVALUATION RECORD

STUDY IDENTIFICATION:

Smith, K. L. 1992. SAN-582 H 7.5L/Corn Terrestrial Dissipation/Field Conditions. Field Contracting by Stewart Agricultural Research Services, Inc., Clarence MO. Analyses by Sandoz Crop Protection Corporation, Des Plaines, IL. MRID No. 422662-03, vol 1.

Laban, S. C., and T. Bade. 1992. Determination of SAN 582 H and its Oxalamide Metabolite in Soil. Method AM-0865-0791-D. Residue Chemistry Group of Sandoz Agro, Inc., Des Plaines, IL. MRID No. 422662-03, vol. 2.

TYPE OF STUDY: Terrestrial Field Dissipation (164-1)

REVIEWED BY:

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CONCLUSIONS:

1. EFGWB concludes that the study submitted is acceptable and partially satisfies the data requirement for terrestrial field dissipation studies.

2. Based on the results of the study SAN 582 H applied at 1.5 lb ai/A to a silt loam soil in a field near Leonard, Missouri dissipated with a half-life of approximately 8 days. SAN 582 H detection was reported as high as 0.83 ppm on day 0 and no detections were reported after 56 days posttreatment. SAN 582 H was detected primarily in the 0-10 cm segment of soil samples. Oxalamide was detected at levels from 0.01-0.05 ppm and no detections were reported after 36 days posttreatment. All reported detections for oxalamide were in the 0-10 cm soil segments.

3. The limit of detection of SAN 582 H was 0.01 ppm.

MATERIALS AND METHODS:

SAN 582 H was applied preemergence on 10 June 1991 at 1.5 lb ai/A to three 50 x 90 ft plots of a silt loam soil located near Leonard, Missouri (see Table III for soil characteristics). The study site was tilled with a field cultivator on 7 May 1991 and a cultipacker on 10 June 1991 and planted to corn on 10 June 1991. A six nozzle CO₂ backpack sprayer equipped with Delevan 80-3R flat fan nozzles, was calibrated on 10 June 1991 to deliver 20.2 gal/A at a rate of travel of 55 ft/15 seconds, a spray width of 10 ft, and a pressure of 30 psi. The first precipitation occurred the day after application of SAN 582 H in the form of 0.20 inch of rain (see Table IV for meteorological summary). Within each plot, eighteen subplots, each 10 ft x 25 ft were established, one subplot for each sampling event. Buffer zones of 20 ft were maintained between the treatment plots. A check plot of similar size (50 ft x 90 ft) was selected 480 ft from the nearest treatment plot and subplots were also established. Subplots were randomized within each plot to create a random selection of samples for each treatment. The crop and pesticide use history for the site is shown in Table II.

Treatments were not applied until prequalifying samples analysis was completed and the site was shown to be free of SAN 582 H and its metabolite oxalamide. A Concord tractor-mounted hydraulic probe with clean acetate liners was used for core sampling and a Concord Excavation Sampler was used for surface samples. Check samples were collected just prior to and immediately after application and 1, 3, 7, 28, 36, 56, 91, 120, and 150 days after application. Eight soil samples were collected from randomized locations within each replicate plot at each sampling interval. Samples from treated plots collected prior to 91 days after treatment (DAT) were collected in two portions. A 2-1/4 inch diameter sample 10 cm deep was first taken and a 2 inch diameter core was then taken from the same spot down to 90 cm. Samples were transferred to a freezer maintained at or below 0°F within 3 hr of collection and remained frozen until shipment in a refrigerated carrier and then kept frozen at 10°F or lower until taken for analysis.

For surface samples, four of the eight samples collected at each sampling were combined into a composite sample. For core samples, four of the eight sample cores collected at each sampling were cut into 10 cm segments starting from the top. The sequential 10 cm soil core segments (0-10 cm, 10-20 cm, 20-30 cm, etc.) were combined by depth into composite samples, thoroughly mixed, and aliquots of each composite sample were taken for moisture determination and residue analysis and the remainder of the sample returned to the freezer. SAN 582 H and its oxalamide metabolite were analyzed using method AM-0865-0791-0 and for SAN-582 H only using BS-2304. The limit of determination was 0.01 ppm for SAN 582 H and its oxalamide metabolite. At least one fortified sample was extracted and processed with each batch of samples.

2

REPORTED RESULTS:

1. SAN 582 H dissipated with a reported half-life of about 8 days from the soil in a field in Missouri which was treated at 1.5 lb ai/A. SAN 582 H dissipated from a high recording at day 0 of 0.83 ppm to non detectable levels by 56 DAT in the 0-10 cm soil segment (Table XIV). No SAN 582 H was detected in any samples later than 56 DAT. In one set of samples at day 28 SAN 582 H was detected in all segments down to 40 cm. Oxalamide was found at ranges from 0.01 ppm (day 7) to 0.05 ppm (day 14) and no detections were reported 36 DAT. All reported detections of oxalamide were in the 0-10 cm segments.

2. The corrected recoveries from fortified samples ranged from 92.8% (fortified at 0.01 ppm) to 83.5% (fortification at 0.50 ppm) for SAN 582 H and averaged 91.1%. The corrected recoveries for oxalamide ranged from 60.0% (0.01 ppm fortification) to 96.0% (fortified at 0.20 ppm) with an average recovery of fortified samples being 80.7% (Table IX)

3. The analytical methods used for determining the residues of SAN 582 H in the soil had a limit of determination of 0.01 ppm.

DISCUSSION:

It should be noted that the corrected recovery of oxalamide was only 60% at a fortification of 0.01 ppm (2 of reported results above). The limit of determination was only 0.01 ppm. When the upper or lower limits are approached it is expected that there may be a wide variation.

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