3. DATA EVALUATION RECORD

March 11, 1983

(1) CHEMICAL: Alachlor (unspecified purity).

(2) CITATION: Shirasu, Y.; Moriya, M.; Kato, K.; Furuhashi, A.; and Kada, T. (1976) Mutagenicity Screening of Pesticides in the Microbial System. Mutation Research 40:19-30.

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(5) STUDY TYPE: Mutagenicity.

(6) ACCESSION NO: 248053

(7) MRID NO: 000GS-05.

(8) PROTOCOL:

1. Alachlor, 2-chloro-2'-6'-diethyl-N-(methoxymethyl) acetanilide, served as the test compound and was obtained through the courtesy of Dr. T. Suzuki of the Agricultural Chemicals Inspection Station of the Ministry of Agriculture and Forestry Kodaira-shi, Japan.

2. Strains used: Rec-assay - Bacillus subtilis H17 Rec^+ and M45 Rec^-.

3. Samples were dissolved in DMSO at a concentration of 1 mg/ml and 0.02 ml solution of sample was applied to a paper disc, which was placed on the cultured agar plate.

4. B. subtilis H17 Rec+ and M45 Rec-) were grown overnight in B-2 broth. Two cultures were streaked on the "dry" surface of B-2 agar and the "starting points" were covered with a paper disk (10 mm diameter) containing 0.02 ml solution of each sample. All the plates were incubated for 24 h at 37° C and the length of inhibition zones for each streak was measured.

(9) RESULTS

Alachlor was nonmutagenic in rec-assay and therefore it was not subjected to further reversion assays with auxotrophic strains of Escherichia coli and Salmonella typhimurium. Detailed data on pesticides giving negative results in mutagenicity tests were not reported.

(10) CONCLUSIONS

Alachlor was one of 166 pesticides subjected to mutagenicity screening. The screening procedure consisted of : "(a) prescreening of DNA-damage chemicals by the rec-assay, followed by, (b) determination of mutation specificities by reversion assays on plates." Metabolic activation was not provided in these tests of positive agents.

Based on the information presented in this study, it appears that Alachlor was not DNA-damaging in the rec-assay. However, without the supportive data e.g., the extent of the inhibitory zones produced by various dose levels and the control data, the conclusions presented can not be properly evaluated.

(11) CORE CLASSIFICATION/EVALUATION: Inconclusive.*

*This study was classified as inconclusive based on the fact that it is a summary, and adequate quantitative data were not submitted for review. Hence, the Toxicology Branch classify this study as Unacceptable

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REFERENCES

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Cline J.C., McMahon R.E. 1977. Detection of chemical mutagens: Use of concentration gradient plates in a high capacity screen. Res. Commun. Chem. Pathol. Pharmacol. 16:523-533.

McMahon R.E., Cline J.C., Thompson C.A. 1979. The assay of 855 test chemicals in 10 tester strains employing a new modification of the Ames test for bacterial mutagens. Cancer Res. 39:682-693.

Williams G.M. 1977. Detection of chemical carcinogens by unscheduled DNA synthesis in rat liver primary cell cultures. Cancer Res. 37:1845-1851.

Williams G.M., Bermudez R., Scaramuzzino D. 1977. Rat hepatocyte primary cultures. III. Improved dissociation and the ehnancement of survival by culture medium. In vitro 13:809-817.