

California Department of Food and Agriculture
Environmental Monitoring and Pest Management
1220 N Street, Room A-149
Sacramento, CA 95814
September 12, 1990

**MONITORING OF ENDOSULFAN IN SEDIMENT
OF AGRICULTURAL DRAINS IN ONE CALIFORNIA COUNTY**

I. Introduction

The Environmental Hazards Assessment Program (EHAP) of the California Department of Food and Agriculture has reported the detection of endosulfan in sediment samples taken from agricultural drains in the Moss Landing drainage area of Monterey County (1). Two stereoisomers, endosulfan I and endosulfan II or the principal breakdown product, endosulfan sulfate were detected in 52% of the sediment samples taken from this region and contributed to the contamination of the natural drainage basin of that area. This finding suggests that endosulfan may also be found in other natural drainage basins.

II. Objective

The objective of this project is to determine if endosulfan I, endosulfan II, or endosulfan sulfate residues exist in sediment of agricultural drains in a previously unmonitored county where this product is heavily used.

III. Personnel

Sediment sampling will be conducted by the EHAP. Key project personnel are listed below:

Project Leader - Joe Marade

Senior Staff Scientist - Lisa Ross

Laboratory Liason - Nancy Miller

Chemist - Karen Hefner

Agency and Public Contact - Mark Pepple

ALL QUESTIONS CONCERNING THIS STUDY SHOULD BE DIRECTED TO
MARK PEPPLER AT (916) 324-8916, ATSS 454-8916.

IV. Study Plan

Endosulfan use for 1989 and 1990 will be reviewed and a county with high endosulfan use will be selected for this study. Potential monitoring sites will be identified from grower pesticide use reports with the assistance of the County Agricultural Commissioner's staff. Fields will be located and plotted on a map and visited to observe their proximity to agricultural drains or ditches. Fields that drain directly into an agricultural drain or ditch which leads to a natural drainage basin will be considered as potential sites. This information will be reviewed and two fields will be selected for sampling.

Five replicate samples, each consisting of five subsamples, will be collected from a drain leading from the selected fields. Subsamples will be collected randomly in areas of the drain where the water moves slowly and the sediment has deposited.

V. Sampling Methods

Sediment samples will be collected 5 cm deep using a Wildco[®] Instrument Model 2321-A10 sediment sampler. Samples will be placed in glass jars sealed with foil-lined caps and the sample containers will be placed on wet ice and kept refrigerated until analysis.

VI. Chemistry Methods

Each sample will be analyzed for endosulfan I, endosulfan II, and endosulfan sulfate by the Chemistry section of the CDFA.

VII. Timetable

Field Work: September 19-30, 1990

Chemical Analysis: October 15, 1990

Memo of Results: October 19, 1990

REFERENCES

1. Fleck, J.E., Ross, L. J., and Hefner, K. September 1988. Endosulfan and chlorthal-dimethyl residues in soil and sediment of Monterey County. California Department of Food and Agriculture. 21 pp.

VIII. Budget

Personnel:

Seasonal work hours (24 Hours x \$8.00/hour) = \$ 192.00

Operating Expenses:

Per diem (2 people x 2 nights x \$84) = \$ 336.00

Vehicle (250 miles x 0.26/mile) = \$ 65.00

\$ 401.00

Chemical analysis:

Primary analysis (10 samples x \$250/sample) = \$ 2,500.00

TOTAL OPERATING BUDGET

\$ 3,093.00