

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

PROTOCOL FOR MONITORING MALATHION IN THE
MEXICAN FRUIT FLY AERIAL TREATMENT PROGRAM,
SAN DIEGO COUNTY, 1990
MAY 11, 1990

I. INTRODUCTION

Mexican Fruit Fly has been eradicated in two prior infestations in Southern California: 1984 in Los Angeles County, and 1954 in San Diego County. The Environmental Hazards Assessment Program (EHAP) has been asked to monitor the current Mexican Fruit Fly aerial treatment program in San Diego County, starting May 21, 1990. This monitoring will be similar to that performed in Los Angeles and Orange counties during February, March and April of this year for the Med Fly treatment program.

II. OBJECTIVE

The objective of the monitoring program is to characterize the malathion application in the treatment corridor and to monitor sensitive areas surrounding the corridor for potential drift during the application.

Droplet size, mass deposition, air and water concentrations of malathion and malaaxon from aerial applications will be measured.

III. PERSONNEL

This study will be conducted by EHAP. Key personnel are listed below.

Project Leader - Randall Segawa

Senior Staff Scientist - Heinz Biermann

Field Operations - Bonnie Turner

Lab Liaison/Quality Control - Nancy Miller

Chemical Analysis - Jane Melvin

Data Analysis - Sally Powell

Information Officer - Connie Smith

Questions concerning this monitoring program should be directed to Connie Smith at (619) 694-2741.

IV. MONITORING PLAN

Malathion applications are scheduled to take place in the El Cajon corridor (16 sq. mi.) on May 21, June 4, and June 18. For each day monitored, the following samples will be collected:

Air - Four sites will be monitored to determine the amount of malathion and malaaxon in air. All sites will be monitored for both indoor and outdoor air concentrations. A series of four samples will be collected: background (24-h duration), spray sample during application (approx. 2-h duration), first post-spray immediately after application (24-h duration), and a second post-spray the day after application (24-h duration).

4 sites x 2 sampler locations x 4 intervals = 32 samples.

Water - Two sites within the treatment corridor will be monitored to determine water concentrations of malathion and malaaxon after direct application. Uncovered residential pools will be the most likely sampling sites. Four samples will be collected: 2 before and 2 after application.

2 sites x 2 sampling intervals x 2 reps = 8 samples

Mass Deposition - Fifteen sites within the treatment corridor will be sampled during application to determine the amount of pesticide reaching the ground. Air and water monitoring sites will be used for sites as well as other private residences, parks and commercial establishments.

15 sites x 1 sampling interval = 15 samples

Droplet Size - Droplet size cards will be placed at the mass deposition sites to determine the size distribution of droplets reaching the ground.

15 sites x 1 sampling interval = 15 samples

Additional Monitoring

Additional samples will be collected outside of the treatment corridor described above. This monitoring may require the cooperation of other agencies. Ecologically "sensitive" areas will be monitored by collecting water, mass deposition and droplet size samples. The location and number of these sites will be determined after consultation with the appropriate state and federal agencies.

V. SAMPLING METHODS

The same general methods of Oshima, et al. (1982) will be used.

VI. CHEMICAL ANALYSIS

All samples will be analyzed for malathion and malaaxon (oxidation product) by the CDFA Chemistry Laboratory Services Branch. Standard EHAP quality control measures will be used (Environmental Hazards Assessment Program, 1988).

VII. DATA ANALYSIS

Air and water concentration, mass deposition, and droplet size distribution for each application monitored will be presented graphically and in a written report. Comparison with previous malathion applications may be made when all applications are completed.

VIII. TIMETABLE

The timetable below is tentative and subject to change:

Locate monitoring sites	May 18
Begin field sampling	May 20
Begin chemical/droplet size analysis	May 23
Begin data analysis	June 1
Report first set of results	June 8
Complete field sampling (3rd application)	June 21
Complete chemical/droplet analysis	July 6
Complete data analysis	July 20
Complete report	August 30

IX. REFERENCES

Environmental Hazards Assessment Program. Chemistry Laboratory Quality Control Guidelines. California Dept. Food Agric. 1988.

Oshima, R.J., et al. A Characterization of Sequential Aerial Malathion Applications in the Santa Clara Valley of California, 1981. California Dept. Food Agric. 1982.