PROTOCOL FOR MONITORING THE APPLE MAGGOT ERADICATION PROJECT, 1986

I. OBJECTIVE

To monitor the environmental levels of the pesticide used for the Apple Maggot Eradication Project.

II. PERSONNEL

Monitoring of the spray program will be conducted by the California Department of Food and Agriculture's (CDFA) Environmental Hazards Assessment Program (EHAP). This monitoring program will be under the overall supervision of Don Weaver. Other key EHAP personnel are listed below.

Randy Segawa - supervision of all aspects for the Apple Maggot monitoring program.

Mary Brown - responsible for the dissemination of monitoring results, and liaison for other agencies, public and media.

ALL QUESTIONS CONCERNING THIS PROGRAM SHOULD BE DIRECTED TO MARY BROWN AT 916-324-8916 OR ATSS 454-8916.

III. MONITORING PLAN

Monitoring will take place in areas where the greatest amount of pesticide will be applied- Del Norte and Humboldt Counties. Monitoring will be initiated at the same time as the treatment program in mid-June, and will continue through a minimum of five applications.

A. Residential Properties

A maximum of three residential properties will be monitored. Samples will be collected according to the following timetable at each of the

monitored properties. In addition, background samples will be collected prior to the start of the treatment program.

1. Air - day before each application, during application, immediately after application, and the day after application.
2. Tank - 1 sample for each application
3. Fruit - day before, day after application, and 7 days after each application
4. Soil - 1, 5, 9, and 13 days after each application
5. Foliage - 1, 5, 9 and 13 days after each application

B. Sensitive Areas

1. Drinking Water Facilities

a. Exposed Surface Water - a maximum of 2 large (>200 connections) and 2 small (<200 connections) water systems will be monitored. The systems selected for monitoring will be based on amount of pesticide applied to the drainage area, and water flow. Sampling stations will be established immediately downstream of the treatment area and at the water intake. These stations will be sampled daily during each application, and during rainstorms every three hours. After the third treatment and rainstorm, only one large and one small system will be monitored.

b. Groundwater - two wells will be monitored in an area that has a high density of application and a high water table.

2. Sensitive Properties

A maximum of two "sensitive properties" such as hospitals, or day care centers will be monitored using the same protocols as residential properties.

IV. SAMPLING METHODS

A. Air - Replicate air samples will be collected with Anderson low-volume air samples at two properties. The samplers will be calibrated at 30 liters per minute, and use XAD-2 as the trapping medium. All background and post-application sampling periods will be three hours in duration; the application sampling period will coincide with the time of application to the property.

B. Tank - One sample of the pesticide mixture will be collected from the spray rigs at the time each monitored property is treated.

C. Fruit - At each of three properties, one fruit sample will be collected at random from each quadrant of several trees. Each sample will be comprised of approximately 15 apples, and analyzed for total residue.

D. Soil - At each of three properties, two replicate samples will be collected from the top 2.5 centimeters. Each sample will be comprised of approximately 500 grams of soil collected at random from each quadrant beneath treated trees.

E. Foliage - At each of three properties, two replicate leaf samples will be collected and analyzed for dislodgable residue. Each sample will be comprised of approximately 30 leaves, collected at random from each quadrant of several trees.

F. Water - Grab samples will be collected in glass containers. The pH will be measured, and adjusted if necessary to preserve the sample. Two replicate samples will be collected for one of the surface water sites, all others will be single samples.

V. SAMPLE STORAGE AND SECURITY

All sampling media and containers will be prepared and prenumbered at the CDFA Meadowview Operations Center. Each container will be shipped to the sampling sites with an accompanying chain of custody record. The chain of custody will be filled out by all persons handling the sample. This form will also be used to record sampling data and the results of the chemical analysis. After collection, all samples will be immediately cooled with wet or dry ice, and kept refrigerated or frozen until analysis.

VI. CHEMICAL ANALYSIS AND QUALITY CONTROL

The chemical analysis will be performed by the CDFA Chemistry Laboratory Services, North Coast Laboratories, and other laboratories as necessary. All samples will be analyzed for phosmet and its oxygen analog, with the following quality control measures:

A. Methods Development

1. Blank-Matrix Spikes - 5 replicate at each of 2 levels
2. Standards - 5 replicate injections

B. Continuing Quality Control

1. Solvent Spikes - 1 per extraction set
2. Blank Matrix Analyses - 1 per extraction set
3. Blank-Matrix Spikes - 1 per extraction set
4. Replicate Extract Injections - 5 replicate injections for 2% of samples
5. Split Matrix Samples - 5% of actual samples