PROTOCOL FOR MONITORING THE APPLE MAGGOT PROJECT, 1987

I. OBJECTIVE

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

II. PERSONNEL

Monitoring of the suppression 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

A. Residential Properties

Monitoring will take place in areas of different climatic conditions. Coastal areas (Del Norte and/or Humboldt Counties) will be compared to inland areas (Shasta and/or Siskiyou Counties). Three residential properties (1 coastal, 2 inland) will be sampled once a week for fruit, soil, and foliage. Monitoring will be initiated at the same time as the treatment program and continue for an eight week period.

B. Drinking Water Facilities

A total of two surface water intake areas will be monitored. Samples will be collected once a week for the first eight weeks of the treatment program.

IV. SAMPLING METHODS

A. Fruit - At two properties, one fruit sample will be collected at random from several trees. Each sample will be comprised of approximately 15 apples, and analyzed for total residue. At the third property, one sample per tree will be collected from three separate trees.

B. Soil - At two 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 beneath treated areas. At the third property, one sample per tree will be collected from three trees.

C. Foliage - At two properties, two replicate leaf samples will be collected and analyzed for dislodgeable residue. Each sample will be comprised of approximately 30 leaves, collected at random from several trees. At the third property, one sample per tree will be collected from three trees.

D. 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 with one sample analyzed. The replicate sample will be analyzed if the first is found positive.

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 site 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

The chemical analysis will be performed by the CDFA Chemistry Laboratory Services, North Coast Laboratories, and other laboratories as necessary.

A. Fruit - analyzed for phosmet, phosmet oxygen analog, and moisture. Results will be reported in ppm, fresh weight basis.

B. Soil - analyzed for phosmet, phosmet oxygen analog, and moisture. Results will be reported in ppm, dry weight basis.

C. Foliage - analyzed for dislodgeable phosmet, and phosmet oxygen analog. Results will be reported in ug/sample. Samples will be kept intact and returned refrigerated to EHAP for weight and area determination.

D. Water - analyzed for phosmet and phosmet oxygen analog. Results will be reported in ppb.

VII. LABORATORY QUALITY CONTROL

A. Methods Development

1. Matrix Spikes - These consist of a known amount of pesticide added to the sample and analyzed normally. Five replicate spiked samples at each of two concentrations will be analyzed for each media (fruit, soil, foliage, water).
2. Replicate Extract Injections - These are multiple injections of an extract into the gas chromatograph. Five replicate injections of one spiked sampled for each media will be conducted.

B. Continuing Quality Control

1. Solvent Blanks - These are normal analyses without any sample matrix. One solvent blank will be analyzed with each set of samples.
2. Matrix Spikes - One matrix spike sample will be analyzed with each set of samples.
3. Replicate Extract Injections - Three replicate injections for one positive sample in each set will be run.
4. Split Matrix Samples - These are samples which are split into two aliquots, with each aliquot analyzed by a different lab. Five percent of the samples will be split.

6/9/87

STATE OF CALIFORNIA
DEPARTMENT OF FOOD
AND AGRICULTURE

APPLE MAGGOT 1987
CHAIN OF CUSTODY RECORD
(use ball point pen only)

ENVIRON. MONITOR. & PEST MGMT.
ENVIRON. HAZARDS ASSESSMENT
1220 N STREET, ROOM A-149
SACRAMENTO, CA 95814

Study #	Sample #	Date Sampled: Mo	Day	Yr	Time	Person Collecting	County	Location	Spray No.	Post Appl. Days	Sample Type	Replicate No.	pH	
6 4				8 7										
1 2 3 4	5 6 7 8	9 10	11 12	13 14	15 16 17 18	19 20	21 22	23 24	25	26 27	28 29 30	31 32 33 34	35 36 37	38 39 40

% Moisture				Lab Code
41 42 43 44	45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64	65 66 67 68 69 70	71 72 73 74 75 76	77 78 79 80

Partner: Location:

Remarks:

Lab Results: Save extracts

For Foliage Only MDL

Dislodgeable

Phosmet

Phosmet OA

% Moisture

Analyzing Lab:

Chemist: Date:

KEY

Col. 21-22: (counties)

08 = Del Norte
12 = Humboldt
23 = Mendocino
45 = Shasta
53 = Trinity
47 = Siskiyou
49 = Sonoma
17 = Lake

Col. 23-24: (location)

01 =
02 =
03 =

Col. 25: (spray no.)

1, 2, 3, etc.

Col. 26-27: (post appl. days)

-B = background
00 = spray
01 = 1 day post

Col. 28-30: (Sample Type)

SOI = soil
WAT = water
FRU = fruit
LEA = leaf
TAN = tank

Col. 77-80: (lab code)

4323 = Food & Ag
3334 = North Coast Labs

Relinquished for Lab by: (Signature)	Date/Time	
Received by: (Signature)	Relinquished by: (signature)	Date/Time
Received by: (Signature)	Relinquished by: (Signature)	Date/Time
Received for Lab by: (Signature)	Date/Time	Lab #

Results Recieved by: (Signature)	Date/Time

Report under Prop 65: ☐ YES ☐ NO

APPLE MAGGOT '87 COC INFORMATION

SITES:

Name:	County & County number	Location Code
Castle Crags State Park, Lippencott Meadows (Castella)	Shasta-45	01
United States Forest Service (Trinity Center)	Trinity-53	02
H.B.M.W.D. Park #4 (Arcata)	Humbolt-12	03
Coffee Creek (Trinity Center)	Trinity-53	04
Mad River, HBMWD, Park #1 (Arcata)	Humbolt-12	05

Location Code:	Sample type at each location
01	Fruit, Leaves ~~(Replicate)~~, Soil ~~(Replicate)~~ Individual tree
02	Fruit, Leaves (Replicate), Soil (Replicate) Composition
03	Fruit, Leaves (Replicate), Soil (Replicate) Composition
04	Water (Replicate & field blank)
05	Water (Replicate & field blank)

REMARKS:

FRUIT: (FRU) approx 15 apples/tree. No replicates
Note whether the sample is a individual or composite sample.
Indicate how many apples comprise the sample, and from how many trees

LEAVES: (LEA) Two replicates, approx 18 leaves/sample.
Individual or composite sample, How many leaves from how many trees.
Indicate replicate numbers
Write " SAVE LEAVES & REFRIGERATE " on the COC and sample jar.

SOIL: (SOI) Two replicates, approx 30 soil plugs/sample
Individual or composite sample, how many plugs from how many trees
Indicate replicate numbers

WATER: (WAT) Two replicates with a field blank
Write site location, Mad river or Coffee creek
River temperature
River flow rate ___?___ (after pump)
Indicate replicate numbers and field blank number
pH adjusted to ___?___ with ___?___ drops of H_2SO_4
Field Blank: Write " Field Blank" on the COC and Dot sample jar lid and all copies of COC.