

PROTOCOL FOR MONITORING OF THE 1983
GYPSY MOTH ERADICATION GROUND
SPRAY PROGRAM

I. Objective

To monitor the environmental levels of the pesticides applied during the 1983 gypsy moth eradication program.

II. Personnel

The monitoring of the gypsy moth eradication ground spray program will be conducted by personnel in the Environmental Hazards Assessment Program (EHAP) under the overall supervision of Ronald J. Oshima. All inquiries regarding the progress and/or results of any facet of the monitoring program should be directed to Ron Oshima in Sacramento (phone 916-322-2395 or ATSS 492-2395).

Tom Mischke - Responsible for selection of sampling methodology, field storage and transport of collected samples, and liaison to CDFA Chemistry Laboratory Services. Questions concerning all aspects of the chemical analysis of collected samples should be directed to him (phone 916-322-2395 or ATSS 492-2395).

Monitoring in affected counties will be assigned to specific EHAP personnel. The following individuals will be responsible for liaison with state, county, and local officials involved with the local eradication program.

San Mateo Co. - Muffet Wilkerson

Alameda Co. - Joe Franz

Marin Co. - Roger Sava

Contra Costa Co. - Randy Segawa

Santa Clara Co. - Fran Zalkin

Los Angeles Co. - Dave Duncan

III. Study Timetable

Field monitoring will coincide with the implementation of the gypsy moth eradication efforts on an area by area basis. A single treatment will be monitored in each selected area to

insure that pesticide levels remain in the ranges previously documented in Santa Barbara, 1982.

IV. General Monitoring Plan

Monitoring will be implemented in each county but limited to 6 of the 9 infestation areas currently under consideration for the gypsy moth eradication ground spray program. Monitoring treatment areas within San Mateo, Alameda, Santa Clara, and Los Angeles counties will attempt to quantify the presence or absence of detectable pesticide concentrations in air and natural bodies of water. One private residence, whose property is being sprayed will be selected as a sample site within each treatment area.

Air will be sampled by high volume air samplers(HV). HV's utilizing an adsorbant resin bed and electronic flow controllers, will operate at a flow rate of 30 cubic feet per minute (CFM). Samples will be collected from outside the residence during each of the following periods: 6 hr. background, spray plus 1/2 hr., and for 6 hrs post spray. (4 x 2 x 3 = 24)

Monitoring in the two remaining counties is described in the Intensive Monitoring Section.

V. Sensitive Sites

a) Duplicate water samples will be drawn once from any exposed public drinking water reservoirs or treatment plants located within the treatment area prior to pesticide release and again immediately following pesticide release in the area.

b) Duplicate water samples will be drawn once from any stream or creek flowing through a treatment area. These will include a background sample downstream of the treatment area and post spray samples from downstream and upstream of the treatment areas.

c) Duplicate runoff samples will be drawn above and below the treatment area following the first significant rainfall. These samples will be collected from the streams, creeks and/or drainage systems draining the treatment area.

d) Duplicate water samples will be drawn from a maximum of two swimming pools chosen from within the treatment areas designated for intensive monitoring. Background and post spray periods will be sampled at each pool site.
(2 x 2 x 2 = 8 samples)

VI. Intensive Monitoring Areas

Area I.

Truck mounted mist blowers are under consideration for use in the gypsy moth eradication program. In the event that mist blowers are used within the Clayton eradication area, (Contra Costa Co.) more intensive monitoring will be done to define the environmental impact of this procedure.

a) A maximum of 14 high volume (HV) air samplers will be employed to characterize pesticide levels in air. Samples will be taken during the following periods: 6 hr background, spray plus 1/2 hr., and 6 hr. post spray. (max. $14 \times 3 = 42$)

b) At each of the above outside HV air sampler sites a 1 square foot plastic backed absorbant fallout card along with a 4"x5" Kromekote card will be employed to measure mass deposition and particle size respectively during the spray period. (max. 12 samples).

e) Turf samples will be taken at one treatment property to quantify the concentration of pesticide deposition on grass. Two 1 square foot samples will be taken at each of the following times: background, immediately upon completion of a spray, 24 hours post spray, 72 hrs post spray, and 6 days post spray. ($2 \times 5 = 10$ samples).

f) Tree foliage - to determine pesticide levels over time on tree foliage, a host tree will be chosen at one treatment property immediately adjacent to the mist blower treatment area. Duplicate samples consisting of a minimum 20-30 leaves will be taken during each of the following periods: background, spray, and every other day up to the third spray. Additional samples will be taken on later dates if deemed necessary. ($2 \times 10 = 20$)

g) Soil samples will be taken from the surface of the soil at one property adjacent to the treatment area to quantify the concentration of pesticide present. Duplicate samples will be collected at each of the following times: background, spray, 24 hrs post spray, 72 hours post spray, and 6 days post spray. ($2 \times 5 = 10$ samples).

Area II

Mist blowers are also under consideration for use in an area composed of rough terrain with a dense canopy located near Novato

(Marin Co.).

a) A maximum of 12 high volume (HV) air samplers will be employed to characterize pesticide concentrations in air. Samples will be taken during each of the following periods: 6 hr. background, spray plus 1/2 hr., and 6 hr. post spray.

VII. Tank samples will be collected during or following all monitored applications.

VIII. Handling and Storage of samples

All sampling media and containers will be prepared and pre-numbered at the California Department of Food and Agriculture Laboratories in Sacramento. Each device or container will be shipped to the sampling sites with an accompanying Chain of Custody Record. The Chain of Custody Record will be filled out by all parties handling or storing the sampling media or sample containers from the time they leave the Sacramento CDFA lab until they are returned to the lab for analysis. The Chain of Custody Record also contains an internal chain of custody record for use by the laboratory.

All samples will be collected by EHAP personnel, sealed in glass containers and stored in the following manner until and during transport to the CDFA laboratory in Sacramento.

On dry ice (-70C)
air samples
foliage samples
soil samples

On Ice (4C)
tank samples
water samples

IX Analysis of Samples

All samples will be analyzed by CDFA Chemistry Laboratory Services in Sacramento. Quality control duplicate samples will be analyzed by CDFA and another approved laboratory. Approximately ten percent of the total number of each type of sample collected will have duplicate analysis performed as part of the quality control program. Brief details of the analytical methods for each type of sample are available if requested.