

California Department of Food and Agriculture  
Environmental Monitoring & Pest Management  
1220 N Street, Room A-149  
Sacramento, CA 95814  
March 8, 1990

PROTOCOL FOR MONITORING OF THE 1990  
GYPSY MOTH ERADICATION PROGRAM

I. INTRODUCTION

The California Department of Food and Agriculture will be conducting an eradication program for gypsy moth in two areas of northern California in the spring of 1990. Part of the treatment will consist of two or more applications of diflubenzuron (Dimilin<sup>®</sup> wettable powder) sprayed on foliage in the immediate area of the infestation. The Environmental Hazards Assessment Program (EHAP) was asked to conduct monitoring of the environmental levels of diflubenzuron resulting from these sprays. Both the spray program and monitoring will proceed as in past years (Marade, et al., 1989).

II. OBJECTIVE

To monitor environmental concentrations of diflubenzuron in air, vegetation, and water following its application during the gypsy moth eradication program in Marin and Sacramento counties.

III. PERSONNEL

Sampling will be conducted by the California Department of Food and Agriculture's Environmental Hazards Assessment Program. Key EHAP personnel are listed below:

Bonnie Turner - Project leader

Nancy Carr - Field group coordinator

Nancy Miller - Laboratory liaison/quality control

Vince Quan - Chemical analysis

Public/Agency liaison - Gera Curry

All questions concerning this project should be directed to Gera Curry at 916-445-3588 or ATSS 485-3588.

#### IV. MONITORING DESIGN

Monitoring will take place at both treatment sites (Tiburon and Roseville) for each application that occurs. One air sample will be collected at each site 1 day prior to application (background), during, and 24 hours post-application. Two foliage samples will be collected at each site the day before and immediately after each application (after spray dries). Samples taken the day prior to the first spray will serve as background samples. Final foliage samples (two per site) will be collected 1 month following the last spray. Water samples will be collected from surface water bodies or streams in the treatment areas before and immediately after the spray is applied, and 7 days after application. Finally, one random tank sample will be taken at each site for each application.

#### V. SAMPLING METHODS

All sampling will be performed using standard EHAP procedures (Sava, 1986). Air samples will be collected using high volume air samplers drawing air at a rate of 1000 l/min. Glass fiber filters will serve as the trapping medium. Background, during-application, and 24 hour post-sampling periods will be 3 hours in duration. Samples will be frozen on dry ice until delivered to the laboratory for analysis. Replicate leaf samples will be collected at random from treated trees and placed in glass jars, then put on wet ice until delivered to the lab. Surface water samples will be collected in amber glass bottles, sealed, and put on wet ice until delivered to the lab. The tank

samples will be collected after the mixture is agitated for at least 5 minutes, then 1 pint of spray will be collected in wide-mouth quart jars. Tank samples will be sealed in plastic bags and stored on wet ice in a separate cooler. Chain of custody records will be kept to document sample handling from collection through analysis.

#### **VI. ANALYTICAL METHODS/QUALITY CONTROL**

Analysis will be performed by the CDFA laboratory using methods developed from earlier programs. Continuing quality control will consist of one blank matrix spike to be analyzed with each extraction set. Retention efficiency tests of glass fiber filters on high volume air samplers will be completed before any samples are analyzed.

#### **VII. DATA ANALYSIS**

Descriptive statistics will be computed from the data and will be presented graphically and in tabular form. Graphical comparisons between this year's and 1987 monitoring project will be presented.

#### **VIII. TIMETABLE**

Sampling period March - April 1990

Extraction/Chemical Analysis April - June 1990

Data Analysis/Report Preparation June - August 1990

Report for Peer Review September 1990

#### **IX. REFERENCES**

Marade, J., Bisbiglia, M., Quan, V. January 1989. Environmental Monitoring of the 1987 Gypsy Moth Eradication Project in Los Angeles County. California Department of Food and Agriculture. Sacramento, CA. 31 pp.

Sava, R. 1986. Guide to Sampling Air, Water, Soil and Vegetation for  
Chemical Analysis. California Department of Food and Agriculture.  
Sacramento, CA. 49 pp.