

Department of Pesticide Regulation
Environmental Monitoring and Pest Management
1220 N Street, Room A-149
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PROTOCOL TO MONITOR METHYL BROMIDE AIR
CONCENTRATIONS AT COLLOCATED SITES

I. Introduction

Methyl bromide air monitoring studies are being conducted in conjunction with efforts to reduce worker and public exposure during soil and commodity fumigations. While the methods appear to be valid, methyl bromide air monitoring can be problematic. As a quality control measure, independent checks of the sampling and analysis are needed.

II. Objective

To collocate and simultaneously sample methyl bromide air concentrations for the purpose of providing quality control.

III. Personnel

This study will be conducted by the Environmental Hazards Assessment Program (EHAP) under the general directions of Dr. Kean S. Goh, Acting Program Supervisor. Key personnel are listed below:

Project Leader: Randy Segawa
Senior Staff Scientist: Bruce Johnson
Study Design/Data Analysis: Terri Barry
Field Sampling: Carissa Gana and Dave Kim
Agency and Public Contact: Madeline Ames

Questions regarding this study should be directed to Madeline Ames, 916-654-1141.

IV. Sampling Plan and Equipment

The most critical sampling period is the first period during the fumigation. The most methyl bromide will be released at this time. Therefore, it is important to determine the wind direction during this sampling period in order to choose locations for the air samplers. All sample locations will be downwind from the fumigation.

The sampling design calls for 3 to 5 collocated sampling locations and 2 to 3 sampling periods. Run-time, sampling height, sample volume, and total sampling area will be matched with the methyl bromide study being checked. A total of 5 to 15 samples will be collected.

Air will be sampled with SKC personal sampling pumps using activated charcoal tubes. The SKC pumps will be calibrated to draw 11 liters of air during the run-time. After collecting the samples, the tubes will be capped, labelled with a sample number and placed on dry ice for shipment.

V. Chemical Analysis

Chemical analysis will be performed by the California Department of Food and Agriculture laboratory in the Worker Health and Safety Section. The methyl bromide samples will be extracted with ethyl acetate then analyzed by gas chromatography with an electron capture detector. To assure analytical integrity, method validation, matrix spikes and blind spikes will be used as quality control procedures.

VI. Data Analysis

Data obtained after chemical analysis will be compared with the data collected by the other monitoring group using linear regression.