



8-15-94

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

AUG 15 1994

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: REVIEW OF AIR MONITORING STUDY FOR CHLORPYRIFOS AND  
CYFLUTHRIN FOGGERS USED IN GREENHOUSES

FROM: David Jaquith  
Special Review and Registration Section I  
Occupational and Residential Exposure Branch  
Health Effects Division (7509C)

TO: George LaRocca  
PM 13  
Registration Division (7505C)

THRU: Steve Knott, Section Head  
Special Review and Registration Section I  
Occupational and Residential Exposure Branch  
Health Effects Division (7509C)

*many Clerk for*

Larry Dorsey, Chief  
Occupational and Residential Exposure Branch  
Health Effects Division (7509C)

Please find below the OREB review of ....

DP Barcode: D197759 Pesticide Chemical Code: 128831

EPA Reg. No.: 499-GAU

Deferral to:

PHED: N/A



Recycled/Recyclable  
Printed with Soy/Canola Ink on paper that  
contains at least 50% recycled fiber

## 1.0 INTRODUCTION

Whitmire Research Laboratories has submitted a study measuring air levels of chlorpyrifos and cyfluthrin in greenhouses after treatment with their product Whitmire PT® 1900 Total Release Insecticide Aerosol Generator. The study was not required by the Agency but rather submitted by the registrant for the Agency's information. The material is to be used in garden centers, greenhouses, hobby greenhouses, interiorscapes, landscapes, and nurseries. The product is packaged as a 1 pound unit containing 1 percent chlorpyrifos and 0.2 percent cyfluthrin as the active ingredients. The product is applied at a rate of 1 unit per 3,000 ft<sup>2</sup>. For thrips and leafminers the application rate is 1 can per 1,500 ft<sup>2</sup>. It is recommended that the material be applied in the early evening when foliage is dry and the temperature is between 60 and 80 °F. Exhaust fans are to be turned off and all windows, doors, and ventilators closed. The greenhouse is to remain closed for 8 hours. Humans and pets are to be removed prior to treatment and the greenhouse is to be ventilated prior to reentry.

## 2.0 CONCLUSIONS

The submission consists of an explanation of the analytical method used to determine the amounts of chlorpyrifos and cyfluthrin in the air after actuation of a total release fogger. The details of the study, such as number and types of areas treated, ventilation procedures, durations of sampling intervals, sampling rates, and storage stability were not provided. The registrant reports the following concentrations of chlorpyrifos and cyfluthrin after treatment.

Air Concentrations of chlorpyrifos and Cyfluthrin in Air After Treatment with a Total Release Fogger.

| Time (Hours) | Chlorpyrifos Conc.<br>(µg/L) |                   | Cyfluthrin Conc.<br>(µg/L) |        |
|--------------|------------------------------|-------------------|----------------------------|--------|
|              | Disk                         | Tube <sup>1</sup> | Disk                       | Tube   |
| 0            | <0.0001                      | <0.0001           | <0.001                     | <0.001 |
| 4            | 0.0194                       | 0.0027            | 0.002                      | 0.007  |
| 8            | 0.0193                       | 0.0010            | <0.001                     | <0.001 |
| 10.5         | 0.0167                       | 0.0008            | <0.001                     | <0.001 |
| 24           | 0.0066                       | 0.0005            | <0.001                     | <0.001 |

<sup>1</sup> Tube was arranged in tandem as a backup to the sampling disk.

The above table indicates that little of the test material is present after aeration of the facility. However, without the documentation necessary to define the test procedures more adequately, the study cannot be used to provide a quantitative estimate of respiratory exposure to the residues from this product. OREB notes that the study did not attempt to determine dermal exposure to these compounds which could be the major route when workers reenter a greenhouse or similar facility. The study cannot be used for quantitative exposure or risk assessment. If such an assessment becomes necessary, an additional study will be needed. In this case the registrant is urged to submit a study design to OREB for comment prior to the conduct of the study.

cc: Chlorpyrifos file  
Cyfluthrin file  
Correspondence file