

US EPA ARCHIVE DOCUMENT

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Due Date: 8/17/84

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To:

Product Manager # 21
Registration Division (TS-767)

From:

Joseph C. Reinert, Ph.D., Chief *Robert H. Hill for*
Special Review Section 2
Exposure Assessment Branch
Hazard Evaluation Division (TS-769c)

Attached please find the EAB review of...

Reg./File No.: 359-706

Chemical: Aliette

Type Product: soluble salt

Product Name: _____

Company Name: Rhone-Poulenc

Submission Purpose: Review of Exposure Protocol

ZBB Code: _____

ACTION CODE: 450

Date In: 8/5/84

EFB # 4464

Date Completed: 8/17/84

TAIS (level II) _____

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Deferrals To:

_____ Ecological Effects Branch

_____ Residue Chemistry Branch

_____ Toxicology Branch

Protocol Review

1. Title: Protocol for Measuring Exposure of Workers to Aliette® Fungicide During Planting of Pineapple in Hawaii
2. Chemical: Common Name--Fosethyl-Al
Trade Name--Aliette®
Chemical Name--Aluminum thris-o-ethyl phosphonate
3. Use: Systemic fungicide for pineapple
4. Application: Root and crown dip
5. Registrant: Rhone-Poulenc, Inc.
P.O. Box 125
Monmouth Junction, NJ 08852
6. Author: Orius Associates, Inc.
2329 Oak Drive
Ijamsville, MD 21754
7. Reviewed by: Harold R. Day, Chemist *HRD*
Exposure Assesment Branch
Hazard Evaluation Division (TS-769)

8. Introduction:

The registrant proposes to conduct a study in Hawaii to measure the human exposure from the use of Aliette for planting pineapple. This fungicide is claimed to have systemic action and to prevent heart rot in pineapples. Aliette is dissolved in water at the rate of two pounds AI per 100 gallons of water (about 0.25 % w/w), and the solution is used to dip pineapple seed pieces prior to planting.

They propose to monitor four persons in each of four different job functions: mixer-loader, dipper tender, planter, and truck driver.

9. Methods

a. Sampling media

The study proposes to use a multi-layer patch system to include multi-layer, pre-washed fabric, chromatography paper, and backing. These dosimeters have been designed with two specific purposes: to measure exposure to Aliette from use, and to measure effectiveness of different protective clothing.

The dosimeter will be placed in appropriate locations: head, shoulders, back, chest, forearms, thighs, and ankles. Total number of patches/individual is 11. Since four types of clothing material will be tested, each applicator will have 44 patches attached total. It is not clear if the testing will be done four times (see summary). The four types of clothing to be tested are: lightweight cotton, polyester cotton, coverall material, and Tyvek coverall material.

Additional sampling will be done on the person's facial area by alcohol swabbing a known area. Hand exposure will be measured twice a day with a water hand rinse followed by an alcohol hand rinse. The times will correspond to just before lunch and at the end of the work day.

Inhalation will be measured with personal air pumps operating at 2.3 liters/minute. Since Aliette is non-volatile, the air samplers are designed to trap dust and particles, not vapors.

Dislodgeable residues on the pineapple seed pieces will be measured to determine residues on the piece after drying. This is being done, apparently for interest, and may be related to transfer of residues to hands; also the registrant may be looking for data on seed piece coverage in treatment.

b. Analytical Methods:

The samples will be collected in the field, cooled with ice, and send to the registrant or contractor for analysis. The analytical methods will include the following:

1. A storage stability study
2. A recovery study at different concentration on each fabric.
3. Appropriate blanks
4. Actual residue analysis of the samples including hand washes, fabrics (including the underlying layers), facial swabs, and pineapple piece rinses,

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10. Comments on Study

- a. There is no analytical method listed. Does a reliable method exist and what instruments are used?
- b. According to the technical bulletin, the rate of 2 lbs. per 100 gallons of water is the recommended rate, not the maximum rate as mentioned on page 1.
- c. Air sampling at 2.3 liters/minute is only about 10% of the breathing rate. It is essential the air sampling be continued long enough during the work day to obtain a large enough sample.
- d. Are 44 patches going to be used at once or will the person wear only 11 patches in each test? The latter would be less confusing.
- e. The air sampling as designed would not catch vapors as stated, but spray/mist might occur. However, it would be expected that any mist would be trapped by the fiberglass or filter paper and the dried residues would be measured based on the description of the sampling apparatus.
- f. The protocol appears very comprehensive and there are no major errors or concerns. This protocol is adequate to measure the subject exposure.

cc: J. Heckman
Section 2 File