

US EPA ARCHIVE DOCUMENT

123301
SHAUGHNESSEY NO.

2
REVIEW NO.

EE BRANCH REVIEW

DATE: IN 1-31-84 OUT 2-9-84

FILE OR REG. NO. 359-706

PETITION OR EXP. PERMIT NO. _____

DATE OF SUBMISSION 11-2-83

DATE RECEIVED BY HED 1-27-84

RD REQUESTED COMPLETION DATE 4-11-84

EEB ESTIMATED COMPLETION DATE 4-4-84

RD ACTION CODE/TYPE OF REVIEW 335/Amendment

TYPE PRODUCT(S): I, D, H, F, N, R, S Fungicide

DATA ACCESSION NO(S). _____

PRODUCT MANAGER NO. H. Jacoby (21)

PRODUCT NAMES(S) Aliette

COMPANY NAME Rhone-Poulenc Inc.

SUBMISSION PURPOSE Proposed registration of foliar applications to
pineapple

SHAUGHNESSEY NO.	CHEMICAL, & FORMULATION	% A.I.
<u>123301</u>	<u>Aluminum tris (o-ethyl phosphonate)</u>	<u>80</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

Ecological Effects Branch Review

PESTICIDE NAME Fosetyl=Al

100 Submission Purpose and Label Information

100.1 Submission Purpose and Pesticide Use

The addition of foliar applications to the pineapple use.

100.2 Formulation Information

ACTIVE INGREDIENT:

Aluminum tris (0-ethyl phosphonate)80%
 INERT INGREDIENTS20%

100.3 Application Methods, Directions, Rates

Foliar sprays should be applied to established plants, when aggravating (promoting fungi growing) environmental conditions (i.e. excessive rainfall) occur or are anticipated.

Pest	Application	lbs/100 gals	GPA	TREATMENT
Heart Rot (<u>Phytophthora parasitica</u>)	Foliar	1.25	300	A maximum of 4 sprays per year may be applied. Do not apply within 9 months of harvest.

100.4 Target Organisms

Pineapple Heart Rot (Phytophthora parasitica)

100.5 Precautionary Labeling

"ENVIRONMENTAL HAZARDS

Do not apply directly to water or wetlands.
 Do not contaminate water by cleaning of equipment or disposal of wastes."

101 Hazard Assessment

101.1 Discussion

Fosetyl-Al is the only active ingredient (a.i.) of the product, Aliette. The Fosetyl-Al Registration Standard applied to the ornamentals and dipping of pineapple crowns. The dipping of the crowns required an application rate of 2 lbs of a.i./A. This submission for foliar application to pineapples would increase the exposure dramatically. First, the application rate is 33% larger 3 lbs/A. However, 4 applications or also allowed as opposed to one for crown dipping.

101.2 Likelihood of Adverse Effects to Non-target Organisms

Exposure

Applications of fosetyl-Al at the maximum suggested rate of 3 lbs a.i. per acre provides for the following maximum expected residues, developed per the articles of Hoerger and Kenaga (1972) and Kenaga (1973).

Food Items

<u>Vegetation Type/ Insect/Soil Surface</u>	<u>Expected Concentration from 3 lbs a.i./A (ppm)</u>
Sparse foliage (shortgrasses)	720
Long grasses	330
Leafy situations	375
Dense foliage/small insects	174
Pods/seeds/large insects	36
Fruits	21
Soil (0.1 inch depth)	66

To determine the concentration in six (6) inch acre-layer of water after direct application, the chart designed by Dr. DeWitt of Patuxent Wildlife Research Center was consulted. For the 3 lbs/A rate, a concentration of 2.2 ppm of fosetyl-Al would be expected in water. In addition to direct application the contribution from runoff was calculated using the following assumptions:

- Assumptions:
1. Application rate = 3 lbs/A
 2. Size of the drainage basin = 1 Acre
 3. Percent runoff = 1%
 4. Surface area of the body of water = 1A
 5. Average depth = 0.5 ft

Formula:

$$\text{EEC} = \frac{\text{Maximum application rate (lbs/A)} \times \text{Size of the drainage basin (A)} \times \text{Percent runoff(decimal)}}{\text{Surface area of body of water (A)} \times \text{Average depth (ft)} \times 43,560 \text{ ft}^2/\text{A} \times 62.36 \text{ lbs/ft}^3}$$
$$\text{EEC} = \frac{3 \text{ lbs./A} \times 1\text{A} \times .01}{1\text{A} \times 0.5 \text{ ft} \times 43,560 \text{ ft}^2/\text{A} \times 62.36 \text{ lbs./Ft}^3}$$

EEC = .022 ppm Runoff Concentration

An additional factor not addressed by this EEC is the dynamic breakdown of fosetyl-Al by aerobic soil bacteria. Aerobic studies indicate soil with bacteria have a half-life of 1- 1/2 hours in loamy sand, silt loam, and clay loam soils and 20 minutes in sandy loam. Therefore, the amount of chemical available for runoff would be nil. Similarly, the contribution from spray drift would be expected to be minimal. Although direct application concentration is relatively high, the labeling prohibits direct application to water and wetlands and drift from the application height needed for pineapple would be expected to be minimal.

Hazard

Fosetyl-Al is practically non-toxic to the tested species. The most sensitive aquatic organism is the grass shrimp with an LC₅₀ of 3.6 mg/l (2.1 = 6.1 mg/l). The lowest acute testing value for all the bird studies was the Japanese Quail LD₅₀ of 4997 mg/kg. For mammals, the rabbit LD₅₀ of 2500 mg/kg was lowest value. As shown under Exposure minimal amounts of the chemical are expected relative to these acute toxicity values. In addition, the octanol/water coefficient indicates bioaccumulation is not likely. Based on these factors adverse effects are not expected to nontarget organisms from this use.

101.3 Endangered Species Considerations

As concluded in the previous section, minimal hazard is expected for normal wildlife populations. The margin a safety, the difference between exposure levels and toxicity, would be expected to be sufficient for protected species. Due to the high dosage levels of the previously registered ornamental use it appears plants are quite tolerant of the chemical, however, no scientific information is available to EEB addressing this issue.

101.4 Adequacy of Toxicity Data

The EEB chemical profile indicates requirements for the six basic wildlife studies have been fulfilled. No further studies are indicated as this time for this use on pineapple.

101.5 Adequacy of Labeling

The submitted labeling is sufficient for the use on pineapples (foliar application).

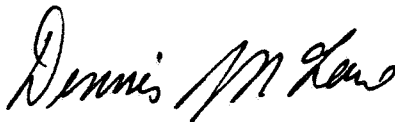
102. Classification

The submitted use would not change the classification of Aliette® Fungicide (EPA Reg. No. 359-706).

103 Conclusions

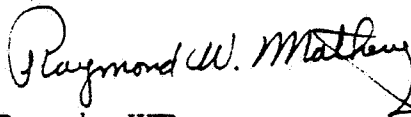
EEB has completed an incremental risk assessment (3(c)(7) finding) of the proposed conditional registration of fosetyl-Al for use on pineapple (foliar application). Based upon the available data EEB concludes that the proposed use provide for a significant increase in exposure, but not in risks to nontarget organisms.

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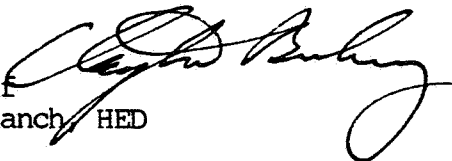
Date: 2 - 14 - 84

Raymond W. Matheny
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Date: 2/14/84

Clayton Bushong, Chief
Ecological Effects Branch, HED



Date: 2/14/84