Shaughnessy No: 109901

Date Out of EAB: MAY 10 1985

To: Donald Stubbs
Product Manager 41
Registration Division (TS-767)

COPY

From: Samuel M. Creeger, Chief
Environmental Chemistry Review Section 1
Exposure Assessment Branch
Hazard Evaluation Division TS-769c

Attached, please find the EAB review of:

Reg./File # : 85-CA-07

Chemical Name: Triadimefon

Type Product : Fungicide

Product Name : BAYLETON

Company Name : California Department of Food and Agriculture (Mobay)

Purpose : Emergency exemption for use on caneberries in California.

Action Code : 510

EAB #(s) : 5398

Date Received : 2/25/85

TAIS Code: 21

Date Completed: 4/30/85

Reviewing Time: 0.8 days

Deferrals to:

_____ Ecological Effects Branch

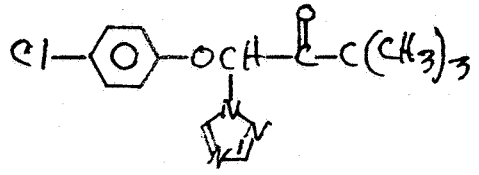
_____ Residue Chemistry Branch

_____ Toxicology Branch

1. CHEMICAL: triadimefon, 1-(4-chlorophenoxy-3,3-dimethyl-1-(1H-1,2,4-triazol-1-yl)-2-butanone, 50% ai.

Trade Name- BAYLETON 50% Wettable Powder FUNGICIDE
BAYLETON 50% Wettable Powder FUNGICIDE in Water Soluble Packets.

Chemical Structure-



2. TEST MATERIAL: Not applicable. No new data submitted.

3. STUDY/ACTION TYPE: Request by the California Department of Food and Agriculture for a reissuance of the Emergency Exemption (Section 18) to use triadimefon (BAYLETON) on caneberries in CA.

4. STUDY IDENTIFICATION: Not applicable. No new data were submitted.

5. REVIEWED BY:

Herbert L. Manning, Ph.D.
Microbiologist
EAB/HED

Signature: Herbert L. Manning
Date: 10 May 1985

6. APPROVED BY:

Samuel M. Creeger
Chief, Section 1
EAB/HED

Signature: Samuel M Creeger
Date: MAY 10 1985

7. CONCLUSIONS:

See RECOMMENDATIONS below.

8. RECOMMENDATIONS:

Soil aged residues of BAYLETON have the potential to leach. In the absence of information on depth to the water table in the areas where BAYLETON will be applied, we cannot determine if residues will reach groundwater when used as proposed.

Other data requirements have been met for the proposed use on caneberries.

9. BACKGROUND:

A. Introduction

See Section 3 of this review.

B. Directions for Use

There was no supplemental label with this submission. There are no changes from the 1984 exemption program.

10. DISCUSSION OF INDIVIDUAL TESTS OR STUDIES:

A. Study Identification

Not applicable. No new data were submitted.

11. COMPLETION OF ONE-LINER:

No data were submitted.

12. CONFIDENTIAL APPENDIX:

There was no CBI in this submission.

STATE OF CALIFORNIA

GEORGE DEUKMEJIAN, Governor

# DEPARTMENT OF FOOD AND AGRICULTURE

1220 N Street
Sacramento
95814

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RECEIVED
FEB 12 1985

February 8, 1985

Mr. Donald Stubbs
Emergency Response Section, Room 716
Registration Division (TS-767C)
Environmental Protection Agency
Crystal Mall, Building 2
1921 Jefferson Davis Highway
Arlington, Virginia 22202

Dear Don

The California Department of Food and Agriculture requests the reissuance of the specific exemption to use Bayleton on caneberries to control powdery mildew. Powdery mildew will still present a control problem during the 1985 season. In addition, an action level will be necessary for caneberries treated under this exemption. The emergency exemption does not circumvent Section 3 registration requirements. It does, however, provide a means of relieving a severe pest problem in the absence of federally registered alternatives.

Copies of the April 18, 1984 specific exemption request; the June 6, 1984 authorization telegram from EPA; and the June 5, 1984 Section 18 label are enclosed.

No changes are necessary to update the emergency justification discussed in the 1984 specific exemption request. Without effective alternative materials, the potential for severe losses due to powdery mildew is still present.

No changes are necessary to update the 1985 treatment program. The 1984 specific exemption has expired. The results of the county pesticide use reports are being submitted.

A petition for residue tolerance #4E-3088 for Bayleton on caneberries has been submitted to EPA. The exemption is necessary from March 1, 1985 to December 31, 1985.

The total value of the caneberry crop in recent years is listed below:

| Year | 1,000 Short Tons | $ Million |
|---|---|---|
| 1983 | 3.2 | 5.3 |
| 1982 | 4.0 | 3.9 |
| 1981 | 2.9 | 3.8 |
| 1980 | 5.3 | 5.1 |

These figures are taken from California Agriculture 1980, 1981, 1982, and 1983.

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In response to our recent telephone conversation, the following economic information is provided:

| | $ Losses to Powdery Mildew | Production | Price Received |
|---|---|---|---|
| 1984 | $16,632/acre | 2,479 crates/acre | $18.48/crate |
| 1983 | $19,116/acre | 2,192 crates/acre | $15.93/crate |

The projected yield for 1985, if Bayleton is made available, is approximately 3,400 crates/acre. If Bayleton is not available, yields are expected to be approximately 2,200 crates/acre.

A breakdown of production costs is projected below where Bayleton would be available (= 3,400 crates per acre production) vs. Bayleton unavailable (= 2,200 crates per acre).

| | Cost Per Crate | |
|---|---|---|
| Breakdown | With Bayleton (3400 c/a) | Without Bayleton (2200 c/a) |
| Crates & Baskets | 1.08 | 1.08 |
| Production Cost[1/] | 2.97 | 4.60 |
| Harvest Cost[2/] | 10.00 | 12.00 |

1/ This includes cultural costs over a 3-year period of $20,200/acre which includes land, chemicals, plants, trellising, equipment depreciation, irrigation, fertilizer, and all non-harvest labor cost. There are 2 production seasons in the 3-year period (the first year is preparation and plant establishment only).

2/ This includes all harvest cost except containers (listed separately). This includes harvest labor, supervision, hauling, and benefits. Harvest cost without Bayleton (= 2,200 crates/acre) is higher because harvesters are paid on an hourly plus crates picked incentive. Without Bayleton, yields are lower and fruit quality poorer which slows picking operation, resulting in reduced harvest workers' income and higher-per-crate costs.

These figures were compiled for Santa Cruz County only, but are representative of the costs in caneberry-producing counties statewide.

The total cost of Bayleton treatment for the control of powdery mildew is $33.30/acre, with $13.30 per acre for material costs, and $20 per acre for application costs.

Mr. Ron Tyler, Farm Advisor for Santa Cruz County, may be contacted as a knowledgeable expert. His telephone number is (408) 724-4734.

Thank you for your help with this exemption. If you should have any questions, please contact Margaret Reiff at (916) 322-5130.

Sincerely

Barry Cortez

Barry Cortez
Supervisor of Registration
Pesticide Registration and
Agricultural Productivity
(916) 322-5130

Enclosures

OF CALIFORNIA
GEORGE DEUKMEJIAN, Governor
DEPARTMENT OF FOOD AND AGRICULTURE

1220 N Street
Sacramento
95816

April 26, 1983



Mr. Donald Stubbs
Emergency Response Section, Room 716
Registration Division (TS-767) C
U.S. Environmental Protection Agency
Crystal Mall, Building 2
1921 Jefferson Davis Highway
Arlington, Virginia 22202

Dear Don

The California Department of Food and Agriculture requests a specific exemption to use triadimefon on caneberries for control of powdery mildew. In addition, the Department requests an action level for caneberries treated with this product. This emergency exemption is not intended to circumvent the Section 3 registration requirements, but to alleviate a critical pest problem where registered alternatives are not effective. The justification for this emergency exemption request follows:

## The Disease Problem

California growers of caneberries will experience severe crop losses due to powdery mildew this season unless suitable materials are made available for control. Powdery mildew has always been a problem in California caneberries. Recent introduction into commercial production of several new high-yielding berry varieties have shown high susceptibility to powdery mildew. These high-yielding varieties are making it economically feasible to continue caneberry production in California.

## The Pest

Powdery mildew on caneberries is caused by the fungus, Sphaerotheca macularis (Wallr. ex Fries). This ascomycete flourishes in areas with cool, foggy mornings and warm, dry afternoons. The fungal haustoria invade the berry plants through the stomata, natural openings in the stems and leaves. Direct crop losses occur when the terminal shoots which bear the developing floral parts, or the individual berries themselves, are infected. Indirect losses occur through reduced plant vigor from foliar infections. Fields that have experienced heavy infections in past years tend to have the most serious problems due to the abundance of overwintering inoculum present in these plantings. Wind-borne spores provide inoculum for rapid spread of this disease to previously uninfected fields, and create the possibility of multiple cycles of infection occurring throughout the season.

Powdery mildew is monitored by weekly inspection of the plants. Mycelial growth on the surface of the leaves is readily visible, and confirmation of the casual organism is done by microscopic examination. Any level of infection requires immediate treatment since control is most readily accomplished during the early stages of disease. Prompt treatment also decreases the likelihood of secondary infection cycles.

## The Crop

Caneberries (raspberries, boysenberries, and blackberries) are grown throughout California with approximately 1,500 acres in production. Estimates of critically affected acreage are at 800 acres, primarily located in Santa Cruz, Monterey, Stanislaus, Merced, and San Joaquin Counties where weather conditions have been conducive to the development of powdery mildew.

Fruit harvest for raspberries extends from May through December; blackberries and boysenberries have a shorter harvest period of four to six weeks from late June through August.

Approximately 75 percent of the raspberries grown in California are marketed as fresh berries, with 25 percent sold to processors. Boysenberries and blackberries are primarily used in processing, with only 10 percent sold as fresh fruit.

## Alternative Control Measures

The only currently registered material for use on caneberries to control powdery mildew is sulfur which is very phytotoxic, resulting in serious vine and fruit burning. In addition, the efficacy of sulfur treatments is marginal under heavy disease pressure. There are no other materials registered for this use on caneberries, and triadimefon has been shown to be effective in controlling this disease.

## Economic Effects

The following chart provides an economic profile of the disease problem:

| | 1982 | 1981 | 1980 | 1979 | 1978 |
|---|---|---|---|---|---|
| Crop Value ($1,000) | $4,608 | $3,820 | $5,143 | $5,027 | $5,569 |
| Production (1,000 Tons) | 3.0 | 2.9 | 5.3 | 3.5 | 3.9 |
| Harvested Acres | 1,300 | 1,000 | 1,100 | 900 | 900 |
| Crop Loss (Percent) | 10-15 | 5-10 | 5-10 | 5-10 | 5-10 |

Losses in 1983 due to powdery mildew are expected to reach 30 percent without effective control materials. Crop losses with the use of triadimefon would be virtually eliminated.

The Proposed Program

The proposed program is outlined in the enclosed supplemental label. The label includes directions for use, precautions, and restrictions. Residue data which support an action level for this use are enclosed for your review. Treatments will be needed beginning in mid-June and continuing for one year after the date of issuance of this specific exemption.

Mr. Paul LeVine, University of California Agricultural Extension Service, may be contacted as a knowledgeable expert. His telephone number is (209) 571-6654.

Thank you for your help with this exemption. If you have any questions, please contact Eileen Mahoney at (916) 322-5130.

Sincerely

Barry Cortez

Barry Cortez, Supervisor of Registration
Pesticide Registration and
Agricultural Productivity
(916) 322-5130

Enclosures