

EEB BRANCH REVIEW

DATE: IN 6/4/82

OUT

8/5/82

FILE OR REG. NO. 3125-320

PETITION OR EXP. PERMIT NO.

DATE OF SUBMISSION 5-13-82

DATE RECEIVED BY HED 6-3-82

RD REQUESTED COMPLETION DATE 8-18-82

EEB ESTIMATED COMPLETION DATE 8-11-82

RD ACTION CODE/TYPE OF REVIEW 335/Amendment - New Food/Feed uses

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

DATA ACCESSION NO(S).

PRODUCT MANAGER NO. H. Jacoby (21)

PRODUCT NAME(S) Bayleton 50% wettable powder

COMPANY NAME MoBay Chemical Corporation

SUBMISSION PURPOSE Proposed conditional registration of pineapple use

SHAUGHNESSEY NO.

CHEMICAL, & FORMULATION

Z A.I.

100 Pesticide Label Information

100.1 Pesticide Use

The registrant, Mobay Chemical Corporation is requesting amendment of its Bayleton 50% W.P. fungicide label E.P.A. Reg. No. 3125-320) to include; 1) use on pineapple seed pieces in a pre-plant dip treatment and; 2) use on whole pineapples in a post-Harvest dip treatment: As a systemic fungicide for control of certain diseases in Pineapple.

100.2 Formulation Information

Bayleton 50% W.P. Contains a 50% active ingredient

100.3/ Application Methods, Directions, Rates Target Organisms**
100.4

AMENDMENT TO PREVIOUSLY REGISTERED LABELING

RECOMMENDED APPLICATIONS

CROP	DISEASE	Ounces BAYLETON 50% WP	COMMENTS
Pineapple (Fresh market only)	Fresh Fruit Rot (<u>Ceratocystis paradoxa</u>)	13 1/3	<u>Post-Harvest Treatment:</u> Apply specified dosage in 100 gallons of water to fruit after harvest. Fruit should be dipped or sprayed for thorough coverage and allowed to drain.
Pineapple	Pineapple Butt Rot (<u>Ceratocystis paradoxa</u>)	13 1/3	<u>Pre-plant Treatment:</u> Apply specified dosage in 100 gallons of water to seed pieces immediately before planting. Seed pieces should be dipped or sprayed for thorough coverage and allowed to drain.

100.5 Precautionary Labeling

The Registrant's product has the following precautionary Labeling:

** - See Appendix I for Complete Label.

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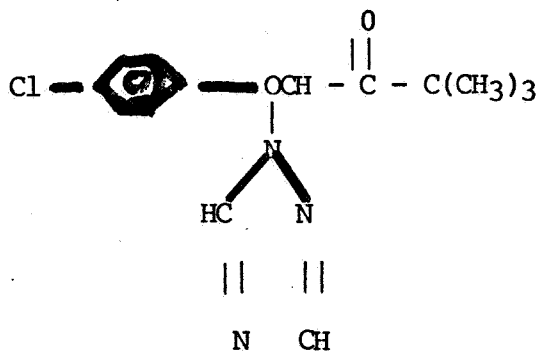
. Keep out of lakes, streams, ponds. Do not contaminate water by cleaning of equipment or disposal of wastes. Apply this product only as specified on this label. Do not make applications when weather conditions favor drift from target area.

101 Physical and Chemical Properties
See previous review by R. Balcomb dated 1/27/82.

101.1 Chemical Name:

1-(4-Chlorophenoxy)-3,3-dimethyl-1-(1H-1,2,4-triazol-1-yl)-2-butanone

101.2 Structural Formula



101.3 Common Name: Triadimefon (Bay 8364, MEB 6447)

101.4 Trade Name: Bayleton 50% W.P.

101.5 Molecular Weight
293.7

101.6 Physical State

White to tan crystals, odorless to mild aromatic

101.7 Solubility (from 12/22/80 EEB Review)

Water	260 ppm	@ 20°C
Cyclohexanone	35%	
Toluene	25%	
Isopropanol	17%	
Methylene Chloride	>150%	
Ligroin	25%	

102 Behavior in the Environment (Review by Balcomb 1/82)

102.1 Soil

In laboratory studies, the half-life of triadimefon was six days in aerobic soil and 15 days in anaerobic soil. Since there was no degradation in sterile soils, microbial action on triadimefon seems a likely route of degradation. In field studies the average half-life was five days, but the half-life of triadimefon plus its primary degrade (KWG-0519) was 225 days. KWG-0519 is considered persistent.

"Aged" soil residues of triadimefon were substantially mobile in sandy clay loam and silty clay soils in column leaching and soil TLC experiments. In the column part, 73% of the original ^{14}C activity was found below 5 cm. However, relatively low leaching ability of "fresh" triadimefon was noted in a different soil TLC study. Lack of experimental procedures prevented ascribing different results to aging or use of differently labeled parent compounds.

102.2 Water

Triadimefon is stable to hydrolysis at pH 3, 6, and 9 and temperatures of 25°C, 35°C, and 45°C. It will photolyze in water with a half-life of 10-12 hours. Addition of 2% acetone accelerated the half-life to 5.5 hours. 1,2,4-Triazole and CO_2 were the major photoproducts from triazole- and benzene ring-labeled studies.

In a simulated pond environment, triadimefon has a half-life of 6-8 days in the water and 18-20 days in the silt. The major degradate was again KWG-0519.

102.3 Plant

In barley plants and seeds, KWG-0519 is the primary metabolite.

102.4 Animal

Triadimefon accumulated in 28 days in catfish to levels of 6.5-7.6X in two flow-through tests at 10 and 100 ppb. Approximately 96% of activity was eliminated in the first seven to ten days of withdrawal.

From J.M. Worthington, RCB, 3/2/81 "In conclusion the three animal metabolism studies demonstrate that Bayleton is rapidly metabolized and excreted with little or no tendency to concentrate in tissues. We consider the fate of Bayleton in animals adequately delineated for the purpose of the proposed temporary tolerances. KWG 0519, KWG 0519 acid, KWG 1323 and KWG 1342 are the principal metabolites found in animal tissues." (This reference concerns cow, pig and poultry metabolism studies.)

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102.5 Soil Microorganisms

There is little inhibition of several soil microbes by triadimefon. However, when nitrogen-fixing symbionts in soybean nodules were exposed to 0.5 ppm triadimefon for four weeks, the plants showed a 60% decrease in shoot length, 21% decrease in plant flesh weight and 29% decrease in nodule fresh weight as compared to controls. On the other hand, actual nitrogen-fixation (as measured by acetylene reduction on LC) was not affected.

103 Toxicological Properties (Review by Balcomb 1/82)

103.1 Mammal

(Reference: Toxicology Branch memo by J. D. Doherty, 2/15/78).

Acute Oral LD50

<u>Species</u>	<u>Formulation</u>	<u>LD50 (mg/kg)</u>
Rat (male)	92 % Technical	568 mg/kg
Rat (female)	92 % Technical	363 mg/kg
Mouse (male)	92 % Technical	987 mg/kg
Mouse (female)	92 % Technical	1071 mg/kg
Rabbit	Technical	500 mg/kg
Dog	Technical	500 mg/kg
Rat (male)	50 % WP	812 mg/kg
Rat (female)	50 % WP	1470 mg/kg
Rat (male)	25 % WP	2828 mg/kg
Rat (female)	25 % WP	3668 mg/kg

Teratology

Three studies (oral in rats, inhalation in rats, and oral in rabbits) showed no indication of embryo toxicity or teratogenesis at 50 mg/kg.

103.2 Fish and Wildlife (Combined from previous EEB reviews)

<u>Species</u>	<u>Test Type</u>	<u>Formulation</u>	<u>Toxicity</u>	<u>Status</u>
Mallard	Acute Oral LD50	Technical	>4,000 mg/kg	Core
Mallard	Dietary LC50	Technical	>10,000 ppm	Core
Bobwhite	Dietary LC50	Technical	>4,640 ppm	Core
Bluegill	96-Hour LC50	Technical	11 ppm	Core
Rainbow trout	96-Hour LC50	Technical	14 ppm	Core
Channel Catfish	96-Hour LC50	Technical	15 ppm	Core
<u>Daphnia magna</u>	48-Hour EC50	Technical	1.6 ppm	Core

103.3 Beneficial Invertebrates

Honey Bees (Apis mellifera)

Contact and oral LD50 - - - both greater than 25 ug/bee.

Stevenson. 1978. Plant Pathol. 27(1):38-40.

Reviewed by: A. Vaughan, 11/5/79

Reviewer's conclusions: This study is scientifically sound.

104 Hazard Assessment

- 104.1 Acute Oral and short term dietary studies (Section 103.2) indicate that Bayleton is practically non-toxic to avian species, moderately-slightly toxic to mammalian species, slightly toxic to aquatic species, and moderately toxic to invertebrates.

Preplant Treatment

Bayleton utilized as a pre-plant fungus preventative is applied solely to the seed piece and is devoid of any direct application to soil or additional flora and fauna. This makes Bayleton accessibility to wildlife remotely limited.

Post Harvest Dip treatment

There is little or no reason to suspect any adverse effects to wildlife since Bayleton 50% WP in this capacity, a post harvest fungus preventative, is applicable only after harvest and is applied exclusively to the pineapple.

In light of the relatively low toxicity Data, (overall) and the limited accessibility of Bayleton (Due to it's use patterns) Bayleton Poses no significant hazard to wildlife.

107.0 Conclusions

107.5 The following information is needed to complete an incremental risk assessment of Bayleton.

- a. An estimate of the number of seed pieces to be planted per acre.
- b. An estimate of the concentration of Bayleton/treated piece

107.7 EEB has completed an incremental risk assessment (3(c)(7) finding) of the proposed conditional registration of Bayleton for use on pineapple. Based upon the available data EEB concludes that the proposed uses provides for a significant increase in exposure, but not in acute risks to non-target organisms. Concurrence with proposed additional use is conditional upon the registrant's clarification of the points cited in 107.5.

Matthew P. Blackington

Matthew P. Blackington
Environmentalist, Section No. 2
Hazard Evaluation Division. (TS-769).

Date: 8/5/82

Norman Cook

Norman Cook
Head, Review Section No.2
Ecological Effects Branch
Hazard Evaluation Division (TS-769)

Date: 8.5.82

Clayton B. Bingham

Clayton Bingham, Chief
Ecological Effects Branch
Hazard Evaluation Division (TS-769)

Date: 8/6/82

Reason to Issue: To propose use on
pineapple.

U.S. LABEL

Date of Draft: 5/6/82 (Pre-Reg) (S)

PA Reg. No. 3125-320

(R)

BAYLETON

50% Wettable Powder

Systemic Fungicide

For Control of Certain Diseases of Pineapple

ACTIVE INGREDIENT:

1-(4-Chlorophenoxy)-3,3-dimethyl-1-(1H
-1,2,4-triazol-1-yl)-2-butanone 50%

AMENDMENT TO PREVIOUSLY REGISTERED LABELING

RECOMMENDED APPLICATIONS

ROP	DISEASE	Ounces BAYLETON 50% WP	COMMENTS
Pineapple (Fresh market only)	Fresh Fruit Rot (<u>Ceratocystis paradoxa</u>)	13 1/3	<u>Post-Harvest Treatment:</u> Apply specified dosage in 100 gallons of water to fruit after harvest. Fruit should be dipped or sprayed for thorough coverage and allowed to drain.
Pineapple	Pineapple Butt Rot (<u>Ceratocystis paradoxa</u>)	13 1/3	<u>Pre-plant Treatment:</u> Apply specified dosage in 100 gallons of water to seed pieces imme- diately before planting. Seed pieces should be dipped or sprayed for thorough coverage and allowed to drain.

BAYLETON

50% Wettable Powder Fungicide

IN WATER SOLUBLE PACKETS

FOR CONTROL OF CERTAIN DISEASES OF GRASSES GROWN FOR SEED, AND AZALEAS

Only for agricultural use, or for sale to, use, and storage by commercial applicators, and other servicepersons

ACTIVE INGREDIENT:

1-(4-Chlorophenoxy)-3,3-dimethyl-1-*H*-1,2,4-triazol-1-yl-2-butanone

INERT INGREDIENTS

ACCEPTED

50%
100%

APR 22 1982

EPA Reg. No. 3125-340 U.S. Pat. No. 3,912,752
EPA Est. 3125-MO-1

KEEP WATER SOLUBLE PACKETS IN THIS CONTAINER AND STORE IN A COOL, DRY PLACE BUT NOT BELOW FREEZING (32°F)

STOP—READ THE LABEL BEFORE USE

KEEP OUT OF THE REACH OF CHILDREN

WARNING

See Side Panel for Statements of Practical Treatment and Other Precautionary Statements

DEALERS SHOULD SELL IN ORIGINAL PACKAGES ONLY

CONTAINS EIGHT 8-OUNCE WATER SOLUBLE PACKETS TOTAL NET WEIGHT 4 POUNDS



Möbius Chemical Corporation
Agricultural Chemicals Division
Box 4913, Kansas City, MO 64120

PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

WARNING

Harmful if swallowed, inhaled, or absorbed through the skin. Causes eye irritation. Do not allow to get in eyes, on skin, or on clothing. Wash hands, arms and face thoroughly with soap and warm water after use and before eating or smoking. Wash all contaminated clothing with soap and hot water before reuse. Do not contaminate feed or food items. Keep out of reach of children.

STATEMENTS OF PRACTICAL TREATMENT

If swallowed, vomiting should be induced. Administer milk or water freely and induce vomiting by giving one dose (1/2 oz. or 15 ml.) of syrup of ipecac. If vomiting does not occur within 10 to 20 minutes, administer second dose. If syrup of ipecac is not available, induce vomiting by sticking finger down throat. Repeat until vomit fluid is clear. Never give anything by mouth to an unconscious person. Professional medical assistance should be secured immediately. If on skin, wash skin immediately with soap and water. If eyes are contaminated, wash with plenty of water for at least 15 minutes. Get medical attention. If inhaled, remove to fresh air. If not breathing, give artificial respiration, preferably mouth to mouth. Get medical attention.

SYMPTOMS OF POISONING: The compound does not cause any definite symptoms that would be diagnostic. Poisoning is accompanied by hyperactivity followed by sedation.

NOTE TO PHYSICIAN: No specific antidote. Treat symptomatically.

ENVIRONMENTAL HAZARDS

Do not use on crops grown for food or forage. Do not apply directly to water. Do not contaminate water by cleaning of equipment or disposal of wastes. Apply this product only as specified on this label. Do not make applications when weather conditions favor drift from target area.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. **IMPORTANT:** Read these entire Directions and Conditions of Sale before using BAYLETON 50% Wettable Powder Fungicide.

CONDITIONS OF SALE: THE DIRECTIONS ON THIS LABEL WERE DETERMINED THROUGH RESEARCH TO BE THE DIRECTIONS FOR CORRECT USE OF THIS PRODUCT. THIS PRODUCT HAS BEEN TESTED FOR A RANGE OF WEATHER CONDITIONS SIMILAR TO THOSE WEATHER CONDITIONS THAT ARE ORDINARY AND CUSTOMARY IN THE GEOGRAPHIC AREA WHERE THE PRODUCT IS USED. INSUFFICIENT CONTROL OF PESTS MAY RESULT FROM THE OCCURRENCE OF EXTRAORDINARY OR UNUSUAL WEATHER, OR FROM FAILURE TO FOLLOW LABEL DIRECTIONS IN ADDITION, FAILURE TO FOLLOW LABEL DIRECTIONS MAY CAUSE INJURY TO THE CROP TO WHICH THE PRODUCT IS APPLIED. OTHER CROPS, ANIMALS, MAN, OR THE ENVIRONMENT MOBBAY AND THE SELLER OFFER, AND THE BUYER ACCEPTS AND USES THIS PRODUCT SUBJECT TO THE CONDITIONS THAT EXTRAORDINARY OR UNUSUAL WEATHER, OR FAILURE TO FOLLOW LABEL DIRECTIONS ARE BEYOND THE CONTROL OF MOBBAY AND ARE, THEREFORE, THE RESPONSIBILITY OF THE BUYER.

BAYLETON 50% Wettable Powder Fungicide is recommended for control of leaf blight of azaleas. A single, properly timed application has given effective control for 4 weeks. BAYLETON is absorbed rapidly and works systemically from within the plant. Good coverage and wetting of the foliage is necessary. BAYLETON 50% Wettable Powder does not cause unsightly residues on foliage.

Rainfall or sprinkler irrigation, even as soon as 1/2 hour after application does not decrease effectiveness. Control, however, may be less effective on plants suffering from drought stress. Therefore, in order to achieve maximum control, azaleas should be maintained in a vigorously growing state through good cultural practices.

For maximum control, BAYLETON should be applied in the expanded bud stage (color showing). Earlier application may be less effective. Making the application when the first flowers open assures proper timing. Early and late blooming varieties may require treatment on different dates. If such varieties are closely interplanted, two applications may be made to the entire planting.

BAYLETON 50% Wettable Powder will effectively stop development of existing rust pustules on grasses grown for seed when applied as recommended. BAYLETON is absorbed rapidly and works systemically from within the plant. Good coverage and wetting of the foliage is necessary. For maximum yield protection early treatment of infections is necessary, since damage is limited to that which occurs before application. Control, however, may be less effective on plants suffering from drought stress.

MIXING: The enclosed packets are water soluble. Do not allow packets to become wet prior to mixing spray solution. Do not handle with wet hands. Reseal outer bag to protect remaining packets.

GROUND APPLICATION EQUIPMENT: The order of mixing is important and should be followed

1. The spray tank should be filled 1/4 to 1/3 full of water.
2. While recirculating and with the agitator running, add the required number of PVA packets, as determined under "Recommended Applications," into the spray tank, as you continue filling the tank to the desired level of water. One packet contains 8 ounces of wettable powder. If it is determined, under "Recommended Applications," that 2 pounds of BAYLETON 50% Wettable Powder should be added to the spray tank, add four 8-ounce packets. The PVA packets should be completely dissolved in 5 to 10 minutes. If an adjuvant is needed, add prior to addition of PVA packets to the spray tank.
3. The addition of other pesticides should be after the PVA packets are completely dissolved, but prior to completion of filling the tank.
4. As with any pesticide, maintain adequate agitation prior to and during spraying.

AERIAL APPLICATION EQUIPMENT: It is important to pre-mix the PVA packets and water before loading into the aerial spray tank. The mixing process should be made according to the same directions for ground application equipment.

CAUTION: Do not use PVA packets in a tank-mix with products that contain Boron or release free chlorine. The resultant reaction of PVA and Boron or free chlorine is a plastic which is not soluble in water or solvents such as diesel oils, kerosene, gasoline or alcohol.

Do not attempt to use the PVA packets directly in diesel oils or summer spray type oils as in ULV or LV uses. PVA packets are water soluble and oil soluble.

RECOMMENDED APPLICATIONS

CROP	DISEASE	BAYLETON 50% WP	REMARKS
ORNAMENTALS Azaleas	Azalea Leaf Blight (Oidium azaleae)	4 to 8	Mix specified dosage in 100 gallons of water and apply as a full coverage fog spray point of run-off. IMPORTANT: For best control application should be made during the "expanding" bud stage (color showing). Use the highest for maximum protection. A second application may be made if needed.
GRASSES GROWN FOR SEED Pregnant Hays Kentucky Bluegrass	Rusts (Puccinia species)	8 to 16	Apply specified dosage per acre in at least 20 gallons of water per acre with ground sprayers or in 7 to 10 gallons of water per acre by aircraft. Apply when rust pustules become readily noticeable and are increasing in number in late spring or early summer. Rust control is especially important during the period from early head emergence through last flowering. Under severe rust pressure use high rates (12 to 16 ounces per acre) and/or more frequent applications to maintain control until the grass seed matures, but DO NOT APPLY A TOTAL OF MORE THAN 2 POUNDS OF BAYLETON 50% WP PER ACRE PER YEAR. DO NOT GRAZE TREATED FIELDS OR USE ANY PART OF CROP OR CROP WASTES FOR FEED OR BEDDING PURPOSES. DO NOT PLANT FOOD OR FORAGE CROPS ON TREATED LAND WITHIN 18 MONTHS AFTER APPLICATION.

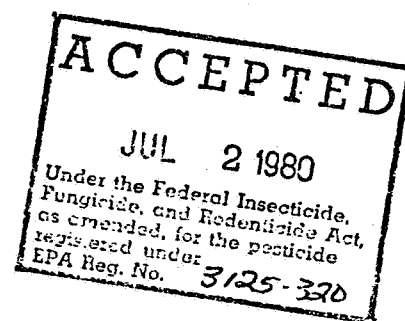
STORAGE AND DISPOSAL

1. **PROHIBITIONS:** Do not contaminate water, food, or feed by storage or disposal. Open dumping is prohibited.
2. **PESTICIDE DISPOSAL:** Pesticide, spray mixture, or rinsate that cannot be used or chemically reprocessed should be disposed of in a landfill approved for pesticides or buried in a safe place away from water supplies.
3. **CONTAINER DISPOSAL:** Dispose of in an incinerator or landfill approved for pesticide containers, or bury in a safe place.
4. **GENERAL:** Consult federal, state or local disposal authorities for approved alternative procedures such as limited open burning.

BAYLETON is a Reg. TM of the Parent Company of Farbenfabriken Bayer GmbH, Leverkusen.

SUPPLEMENTAL LABELING

©BAYLETON
50% Wettable Powder
FUNGICIDE
EPA Reg. No. 3125-320



RECOMMENDED APPLICATIONS

BAYLETON 50% Wettable Powder will effectively stop development of existing rust pustules on grasses grown for seed when applied as recommended. For maximum yield protection early treatment of infections is necessary, since damage is limited to that which occurs before application.

CROP	DISEASE	Pounds BAYLETON 50% WP	REMARKS
GRASSES GROWN FOR SEED			Apply specified dosage per acre in at least 20 gallons of water per acre with ground sprayers or in 7 to 10 gallons of water per acre by aircraft. Apply when rust pustules become readily noticeable and are increasing in number in late spring or early summer. Rust control is especially important during the period from early head emergence through last flowering. Under severe rust pressure, use high rates (¾ to 1 pound per acre) and/or more frequent applications to maintain rust control until the grass seed matures, but DO NOT APPLY A TOTAL OF MORE THAN 2 POUNDS OF BAYLETON 50% WP PER ACRE PER YEAR. DO NOT GRAZE TREATED FIELDS OR USE ANY PART OF CROP OR CROP WASTES FOR FEED OR BEDDING PURPOSES. DO NOT PLANT FOOD OR FORAGE CROPS ON TREATED LAND WITHIN 18 MONTHS AFTER APPLICATION.
Perennial Ryegrass Kentucky Bluegrass	Rusts (Puccinia species)	¾ to 1	

IMPORTANT: This supplemental labeling is not intended to provide full information for use of this product. Before using BAYLETON 50% Wettable Powder, read and carefully observe caution statements, directions for use, restrictions and disposal information on the label.



Mobay Chemical Corporation
Agricultural Chemicals Division
Box 4913, Kansas City, MO 64120

