Shaughnessy Number: 109901

Date Out of EFGWB: SEP 19 1989

TO: D. Stubbs/L. Pemberton
Product Manager 41
Registration Division (H7505C)

FROM: W. Martin Williams, Hydrologist
Ground-Water Technology Section
Environmental Fate & Ground-Water Branch/EFED (H7507C)

THRU: Henry Jacoby, Chief (Acting)
Environmental Fate & Ground-Water Branch/EFED (H7507C)

Attached, please find the EFGWB review of:

Reg./File #: 88-CA-13

Chemical Name: Triadimefon

Type Product: Fungicide

Company Name: Mobay Corporation

Purpose: Evaluate ground-water concerns for crisis exemption under FIFRA Section 18 for use on tomatoes in California.

Date Received: not given

Date Completed: 9/15/89

Monitoring study requested: ____

Monitoring study voluntarily: ____

ACTION CODE: 510

EFGWB #(s): 80965

Total Review Time: 1 day

Deferrals To: ____ Biological Effects Branch

____ Science Integration & Policy Staff, EFED

____ Non-Dietary Exposure Branch, HED

____ Dietary Exposure Branch, HED

____ Toxicology Branch, HED

REGISTRATION DIVISION DATA REVIEW RECORD

Confidential Business Information — Does Not Contain National Security Information (E.O. 12065)

43128 HED

1. CHEMICAL NAME: Triadimefon

2. IDENTIFYING NUMBER	3. ACTION CODE	4. ACCESSION NUMBER
88-CA-13	512	229,920

TO BE COMPLETED BY PM

5. RECORD NUMBER: 247,691
6. REFERENCE NUMBER:
7. DATE RECEIVED (EPA):
8. STATUTORY DUE DATE:
9. PRODUCT MANAGER (PM): Stubbs / Tompkins
10. PM TEAM NUMBER: 41

TO BE COMPLETED BY PCB

11. DATE SENT TO HED/TSS: 2-15-88
12. PRIORITY NUMBER: 6
13. PROJECTED RETURN DATE: Feb 1, 1989

14. CHECK IF APPLICABLE

- ☐ Public Health/Quarantine
- ☐ Minor Use
- ☐ Substitute Chemical
- ☐ Part of IPM
- ☐ Seasonal Concern
- ☐ Review Requires Less Than 4 Hours

AH

15. INSTRUCTIONS TO REVIEWER

A. HED
- ☐ Total Assessment - 3(c)(5)
- ☐ Incremental Risk Assessment - 3(c)(7) and/or E.L. Johnson memo of May 12, 1977.

B. SPRD (Send Copy of Form to SPRD PM)
- ☐ Chemical Undergoing Active RPAR Review
- ☐ Chemical Undergoing Active Registration Standards Review

C. ☐ BFSD
D. ☐ TSS/RD
E. ☐ Other

F. INSTRUCTIONS: Please review for groundwater Concerns

16. RELATED ACTIONS:

17. 3(c)(1)(D)
- ☐ Use Any or All Available Information
- ☐ Use Only Attached Data
- ☐ Use Only the Attached Data for Formulation and Any or All Available Information on the Technical or Manufacturing Chemical.

18. REVIEWS SENT TO
- ☐ TB
- ☐ EEB
- ☐ EF
- ☐ PL
- ☐ RCB
- ☑ EFB
- ☐ CH
- ☐ BFSD

19.	To	TYPE OF REVIEW	NUMBER OF ACTIONS: Registration	Petition	EUP	SLN	Sec. 18	Inert	MNR. USE	Other
HED		TOXICOLOGY								
HED		ECOLOGICAL EFFECTS								
HED		RESIDUE CHEMISTRY								
HED	✓	ENVIRONMENTAL FATE					1			
RD/TSS		CHEMISTRY								
RD/TSS		EFFICACY								
RD/TSS		PRECAUTIONARY LABELING								
BFSD		ECONOMIC ANALYSIS								

20. ☐ Label Submitted with Application Attached

21. ☐ Confidential Statement of Formula

22. ☐ Representative Labels Showing Accepted Uses Attached

23. Date Returned to RD (to be completed by HED)

24. Include an Original and 4 (four) Copies of This Completed Form for Each Branch Checked for Review.

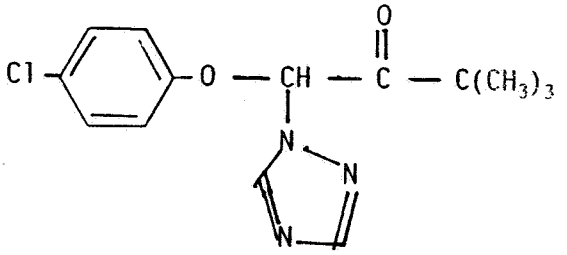
EPA Form 8570-13 (Rev. 11-81) PREVIOUS EDITIONS ARE OBSOLETE.

2

APPLICATION FOR EXEMPTION UNDER FIFRA SECTION 18

1. CHEMICAL:

Chemical name: 1-(4-chlorophonoxy-3,3-dimethyl-1-(1H-1,2,4-trizol-1-yl)-2-butanone
Common name: Triadimefon (Bayleton)
Structure:



2. TEST MATERIAL:

Not Applicable.

3. STUDY/ACTION TYPE:

Review of application for specific exemption in accordance with FIFRA Section 18 to control powdery mildew on tomatoes in California.

4. STUDY IDENTIFICATION:

Letter with attachment dated January 15, 1988 to Mr. Donald Stubbs, EPA/OPP/RD from Regina Sarracino, Supervisor of Registration, Pesticide Registration Branch, California Department of Food and Agriculture.

Identifying No.:	88-CA-13
Action Code:	510
Record Number:	222,359
Date Sent to EFED:	not given

5. REVIEWED BY:

W. Martin Williams Signature: _____
Hydrologist
OPP/EFED/EFGWB/Ground-Water Technology Section Date: 9/16/89

6. APPROVED BY:

Patrick W. Holden Signature: _____
Section Head
OPP/EFED/EFGWB/Ground-Water Technology Section Date: 9/19/89

7. CONCLUSIONS:

1) Baytan, the biological degradation product of Bayleton, has the potential to leach and persist in ground water that is used for drinking water. If leached beyond the root zone, the persistence of Baytan is considerably longer than the 8-9 month aerobic soil metabolism half-life.

2) Repeated applications can result in a build-up of residues in soil and ground water.

2) No persistent chemical is desired outside of its target area - regardless of toxicity. As such, actions to prevent migration into less microbial active environments should be implemented should the subject Specific Exemption be granted.

8. RECOMMENDATIONS:

1) The subject Specific Exemption should not be granted annually to avoid build-up of residues in soil and ground water.

2) Advisory label statements cautioning users should be included in the protocol should the subject Specific Exemption be granted as proposed below:

"This chemical can travel (seep or leach) to ground water that is used for drinking water.

Users are advised to be careful in mixing and handling this chemical to avoid spills.

This product must not be mixed/loaded, or used within 50 feet of sink holes or wells, including abandoned wells and drainage wells."

Do not use in hydrogeologically vulnerable conditions defined as having very permeable (sandy) soils, ground water less than 30 feet, and/or soil conditions conducive to preferential flow conditions (e.g., karst terrain).

Do not over irrigate. Avoid use during periods of heavy rain."

9. BACKGROUND:

Bayleton is a systemic fungicide used against powdery mildew affecting deciduous fruit, cereals and vegetables; azalea petal blight; rust diseases of cereals and coffee; seed grasses and pine; and pineapple disease on sugarcane and pineapple. Formulations include: wettable powder, emulsifiable concentrate, suspension concentrate, and paste.

This Specific Exemption is for use against powdery mildew on tomatoes in California. This Specific Exemption had been granted in 1983 and 1987.

10. DISCUSSION:

A maximum of 44,000 acres of tomatoes are to be treated under the subject Specific Exemption. A maximum of 8 ground or aerial applications consisting a maximum rate of 2.5 ounces a.i. per acre at 10-21 day intervals will be made. This results in a maximum total of 55,000 lbs of active ingredient (44,000 acres x 8 applications x 2.5 oz. / 16 oz/lb).

Bayleton is moderately mobile but relatively non-persistent in the environment as shown in Table 1. The major mode of degradation is aerobic and anaerobic soil metabolism. The only significant products of metabolism are carbon dioxide and Baytan (EAB #5024). Baytan is a separately registered pesticide (Shaughnessy #127201) and is slightly more mobile in the environment than Bayleton and considerably more persistent (also shown in Table 1). Based on the relatively rapid oxidation of parent triadimefon, Baytan is the compound of potential concern.

4

HED should be contacted regarding the toxicity of Bayleton and Baytan in drinking water. Preliminary information indicates that neither Bayleton nor Baytan have significant chronic health risks in drinking water. Reference Doses (RfDs) are on the order 0.025 and 0.038 mg/kg/day, respectively (HED/Toxicology Branch RfD Tracking Report February 1989).

Application rates of the subject Specific Exemption are very low (maximum of 2.5 oz a.i./acre). However, up to 8 repeat applications at 10 to 21 day intervals, are in the protocol. Given the degradation rates of Baytan, leaching assessments must consider that up to 1.25 lbs active ingredient (8 x 2.5 oz / 16 oz/lb) may be applied per acre over an 80 to 168 day period. Given 8 to 9 month aerobic metabolism half-lives, this application rate and schedule is unlikely to result in significant residues in soil.

The major concern for this chemical is persistence of Baytan should the compound leach below the root zone and into ground water where anaerobic half-lives are significantly greater than 8-9 months. No persistent chemical is desired outside of its target area - regardless of toxicity. As such, actions to prevent migration into less microbial active environments should be implemented for all uses (see Section 8, "Recommendations").

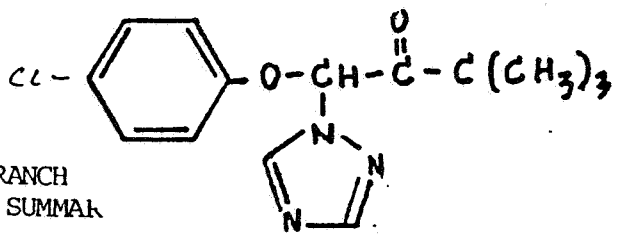
TABLE 1
LEACHING ASSESSMENT FOR TRIADIMEFON

Property	Bayleton[1]	Baytan[2]	Guidelines[3]
Adsorption Partition Coefficient	3.5 - 9.3	0.5 - 3.7	<5.0, <1.0 or 2.0
Solubility (ppm)	70 @ 20° C	49 - 95° C >30 ppm	
Hydrolysis half-life	relatively stable	stable	>25 weeks
Photolysis half-life	stable soil <1 day aqueous	stable soil 36 hr aqueous	>1 week
Aerobic Soil half-life	6-18 days	8-9 months	>2-3 weeks
Anaerobic Soil half-life	15 days	>>8-9 months	>2-3 weeks

[1]EFGWB Pesticide Environmental Fate One Line Summary, 6/22/89.

[2]EFGWB Pesticide Environmental Fate One Line Summary, 1/27/84.

[3]Cohen, S.Z., S.M. Creeger, R.F. Carsel, and C.G. Enfiel, "Potential Pesticide Contamination of Groundwater from Agricultural Uses, in Treatment and Disposal of Pesticide Wastes", ACS Symposium Series #259, R.F. Krueger and J.N. Seiber, ed., American Chemical Society, Washington, D.C., 1984.



ENVIRONMENTAL FATE & GROUND WATER BRANCH
PESTICIDE ENVIRONMENTAL FATE ONE LINE SUMMARY

Common Name: TRIADIMEFON
Date: 06/22/89
Chem. Name : 1-(4-CHLOROPHENOXY)-3,3-DIMETHYL-1-(1H-1,2,4-TRIAZOL-1-YL)-
: 2-BUTANONE
Synonym : BAYLETON; AMIRAL
Shaugh. # : 109901
CAS Number: 43121-43-3
Type Pest. : FUNGICIDE (SYSTEMIC)
Formulation: WP; EC; SUSP. CONCENTRATE; PASTE; DRY FLOWABLE
Uses : AGAINST POWDERY MILDEW AFFECTING DECIDUOUS FRUIT, CEREALS
: AND VEGETABLES; RUST DISEASES OF CEREALS, COFFEE, SEED
: GRASSES; DISEASES ON SUGARCANE,PINEAPPLE, ORNAMENTALS

Empir. Form: $C_{12}H_{14}ClN_3O_2$
Mol. Weight: 267.5
Solub.(ppm): 70 @ 20 C

VP (Torr): <E-6
Log Kow : 2.99
Henry's :

Hydrolysis (161-1)
pH 5:[ ]
pH 7:[ ]
pH 9:[ ] 95% REMAINS AFTER 28 WKS
pH 3:[ ] 97% " " " "
pH 6:[ ] 95% " " " "
pH :[ ]

Photolysis (161-2, -3, -4)
Air :[ ]
Soil :[*] STABLE
Water:[ ] 10-12 HOURS
:[ ]
:[ ]
:[ ]

MOBILITY STUDIES (163-1)

Soil Partition (Kd)

	s	s	c	CEC	%OM	K
1.[ ]						
2.[ ]	46	36	18	27.6	3	9.3
3.[ ]	4	53	43	28.6	2.1	3.5
4.[ ]	92	7	1	26.6	3.7	5.9
5.[ ]						
6.[ ]						

Rf Factors

	%s,	s,	c	%OM	Rf
1.[ ]					
2.[ ]	91	1	1	0.8	0.27
3.[ ]	74	14	13	2.8	0.16
4.[ ]	56	21	23	0.6	0.20
5.[ ]	18	57	25	5.1	0.26
6.[ ]	0	41	59	0.5	0.20

METABOLISM STUDIES (162-1,2,3,4)

Aerobic Soil (162-1)

	SOIL	%s,	s,	c	%OC	T1/2
1.[ ]						
2.[ ]	SiCl	0	66	34	2.4	6 DA
3.[ ]	SL	74	16	10	17.1	18 "
4.[ ]						
5.[ ]						
6.[ ]						
7.[ ]						

Anaerobic Soil (162-2)
1.[ ] SiCl 15 DAYS (STERILE CON-
2.[ ] DITIONS INHIBIT BREAKDOWN)
3.[ ]
4.[ ]
5.[ ]
6.[ ]
7.[ ]

Aerobic Aquatic (162-4)
1.[ ]
2.[ ]
3.[ ]
4.[ ]

Anaerobic Aquatic (162-3)
1.[ ]
2.[ ]
3.[ ]
4.[ ]

[*] - Acceptable Study. [#] = Supplemental Study

6

Common Name: TRIADIMEFON Date: 06/22/89

VOLATILITY STUDIES (163-2,3)

[ ] Laboratory.
[ ] Field:

DISSIPATION STUDIES (164-1,2,3,5)

Terrestrial Field (164-1)

		% s, s, c	%OM		0-6"	6-12"
1.[ ]	SOIL					
2.[ ]	FLA.SAND	88 9 3	7.6	TRIAD.	5.5 MOS.	8.7 MOS
3.[ ]				KWG	6.0 "	6.5 "
4.[ ]	CA LOAM	55 35 10	0.5	TRIAD	4.5 "	17 "
5.[ ]				KWG	24 "	
6.[ ]	OR LOAM	41 45 14	4.5	TRIAD	8.0 "	23 "

Aquatic (164-2)
1.[ ]
2.[ ]
3.[ ]
4.[ ]
5.[ ]
6.[ ]

Forestry (164-3)
1.[ ]
2.[ ]

Other (164-5)
1.[ ]
2.[ ]

ACCUMULATION STUDIES (165-1,2,3,4,5)

Confined Rotational Crops (165-1)
1.[ ]
2.[ ]

Field Rotational Crops (165-2)
1.[ ] 1 YR ROTATION FOR SMALL GRAINS, BLACK-EYED PEAS.
2.[ ] 1 MONTH ROTATION FOR RADISHES.

Irrigated Crops (165-3)
1.[ ]
2.[ ]

Fish (165-4)
1.[ ] CHANNEL CATFISH, 6.5-7.6 EDIBLE
2.[ ]

Non-Target Organisms (165-5)
1.[*] CLOVER PLANTS STUNTED @ 50 PPM; NITROGEN FIXATION
2.[ ] BY CLOVER APPARENT AT 10 PPM.

Common Name: **TRIADIMEFON** Date: 06/22/89

GROUND WATER STUDIES (158.75)

1.[ ]
2.[ ]
3.[ ]

BAYTAN
DEGRADATION PRODUCTS

1. KWG (HALF-LIFE IN SOIL = 9-12 MONTHS)
2. TRIAZOLE
3. HYDROXY TRIAZOLE
4.
5.
6.
7.
8.
9.
10.

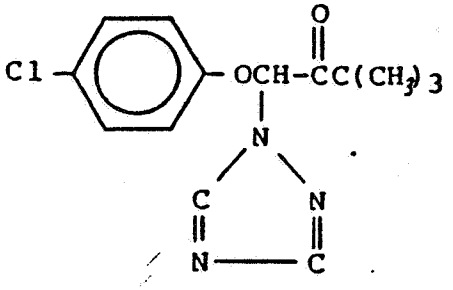
COMMENTS

AGED RESIDUES ARE MODERATELY MOBILE AND HAVE THE POTENTIAL TO LEACH INTO GROUND WATER.

THE DEGRADATE, KWG 0519, HAS A HALF-LIFE OF 9-12 MONTHS IN SOI

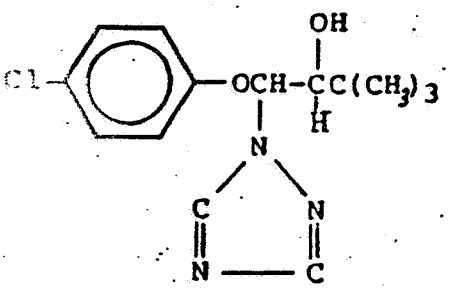
References:
Writer : J. HANNAN

9



BAYLETON

[TRIADIMEFON]



KWG 0519

[BAYTAN]

FILE COPY

Date: 1/27/84
Initials: NKW

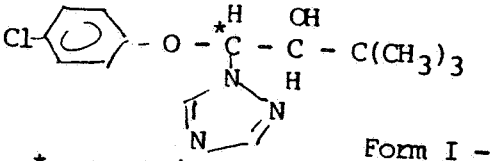
EXPOSURE ASSESSMENT BRANCH ONE LINER

EAB FILE NO: 127201

TYPE PESTICIDE: Fungicide

COMMON NAME: Baytan

STRUCTURE:



CHEMICAL NAME: 1-(4-chlorophenoxy)-3,3-dimethyl-1-(H-1,2,4-triazole-1-yl)-2-butanol

Form I - D
* asymetric carbon = Form II- L

CHEMICAL PROPERTIES:

Molecular Weight	Aqueous Solubility	Vapor Pressure
	Form I 95 ppm Form II 49 ppm	

Partition Coefficients:

Octanol/Water (K_{ow})
Form I 794
Form II 1305

Soil Adsorption

Soil Type:	% Soil O.M.	Coefficients K	Coefficients K_{oc}	TLC R_f
Mobility Class: 2				
Kansas loam	3.0	5.26		
Hagerstown Silty Clay	2.1	2.37		
Florida Sand	3.7	4.05		
Kansas silty clay	0.5			0.16
Oregon sandy loam	2.3			0.58

Hydrolysis		Photolysis	Degradation	
pH	Half-Life	Half-Life	Lab Half-Life	Field Half-Life
4.5	stable	Soil: stable	Soil Aerobic: 8-9 months	Soil:
7.1	stable			
9.2	stable	Water: 36 hr photo-sensitzd: 17 hr. (acetone)	Anaerobic: >>8-9 mos. Aquatic Aerobic:	Aquatic:
			Anaerobic:	

FISH BIOACCUMULATION FACTORS

Species	Tissue: Edible	Tissue: Viscera	Whole Fish	Depuration Half-Life
	X	X	X	

FOUND IN GROUND WATER? ESTABLISHED REENTRY INTERVAL ROTATIONAL CROP RESTRICTIONS

COMMENTS: for seed treatment, field dissipation, rotational crop and fish acc. were waived.

REFERENCES: files

10

FILE COPY

Data Requirement	Terrestrial Satisfied	Aquatic Satisfied	Comments
HYDROLYSIS	6/22/83		
PHOTODEGRADATION soil	1/27/84		
water	1/27/84		
SOIL METABOLISM aerobic	6/22/83		
anaerobic			
LEACHING column	6/22/83		
batch	1/27/84		
TLC	6/22/84		
FIELD DISSIPATION soil			waived for seed treatment 6/22/83
water			
forest			
ROTATIONAL CROP			waived for seed treatment 6/22/83
IRRIGATED CROP			
FISH ACCUMULATION			waived for seed treatment 6/22/83
AQUATIC NON-TARGET			

BPYTAN

11

STATE OF CALIFORNIA

GEORGE DEUKMEJIAN, Governor

DEPARTMENT OF FOOD AND AGRICULTURE
1220 N Street
Sacramento, CA 95814

7

January 15, 1988

RECEIVED
1-20-88

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:

Subject: Section 18 Emergency Exemption Reissuance Request
Bayleton/Tomatoes/To Control Powdery Mildew

The California Department of Food and Agriculture requests the reissuance of the subject specific exemption. The 1987 specific exemption (EPA File Symbol 87-CA-16) expires February 28, 1988 and without effective alternative materials, the emergency situation and the potential for severe losses due to powdery mildew is present again.

The justification of the need for the 1988/1989 use season is the same as that previously outlined in the 1983 and the 1987 specific exemption requests.

Copies of the February 6, 1987 specific exemption request; the March 25, 1987 authorization telegram from EPA; and the March 27, 1987 Section 18 label are enclosed for reference.

Two changes are necessary to update the 1988/1989 treatment program. It is requested that the maximum number of acres treated be increased from 44,000 to 70,000. The 1986 county pesticide use reports have shown that serious infections of powdery mildew have infected an area greater than the original number of acres requested. In order to accurately reflect the extent to which the powdery mildew disease has spread the number of acres treated needs to be increased. The second change is to include an additional product for use under this emergency exemption. The use of Bayleton 50% Dry Flowable Fungicide, EPA Reg. No. 3125-320-ZA is needed in order to ensure an available supply of product throughout the State. This product is identical to the product currently on the emergency exemption, Bayleton 50% Wettable Powder Fungicide, EPA Reg. No. 3125-320-AA. The 1987/88 specific exemption will expire on February 28, 1988. The county pesticide use reports will be submitted after that date.

12

Currently, a petition towards residue tolerance, #4F-3148, for the use of Bayleton on tomatoes has been submitted by the manufacturer. An action level is requested for tomatoes treated under this exemption. This exemption is necessary from February 29, 1988 through February 28, 1989.

The total value of the tomato crop in recent years is listed as follows:

*Year	Acres (1000)	1,000 Short Tons	$ Million
1985	268.3	6,491.2	541.8
1984	269.1	6,901.1	584.6
1983	263.0	6,325.4	525.6
1982	262.3	6,533.0	569.2
1981	234.5	5,287.0	464.8

These figures were taken from California Agriculture - 1981-1985.
*Statewide figures.
Bayleton was available for use during all of the years listed.

The following economic information is provided by Yolo County and is representative of tomato growing areas statewide.

Fresh Market	Total Acres	Yield Per Acre	Total Production	Price	Value
1984	27,900	267 cwt.	7,452,000 cwt.	$25.3 cwt.	$188,576,000
1985	28,600	272 cwt.	7,783,000 cwt.	19.4 cwt.	150,627,000
1986	28,600	278 cwt.	7,950,800 cwt.	20.7 cwt.	164,581,000
1987	28,600	275 cwt.	7,865,000 cwt.	19.1 cwt.	150,000,000
Processing					
1984	239,700	27.50 tons	6,591,750 tons	$64.8/ton	$427,145,000
1985	217,000	28.12 tons	6,102,040 tons	64.1/ton	391,141,000
1986	210,500	30.50 tons	6,480,320 tons	63.8/ton	410,000,000
1987	213,000	31.50 tons	6,701,376 tons	64.3/ton	430,898,470

Bayleton was available for use during all of the years above.

Additional economic information, such as crop loss with and without the proposed material, costs of the pesticide treatment, and production costs, have been thoroughly outlined in the 1986/87 specific exemption request (enclosed).

B

This Section 18 emergency exemption use pattern was previously reviewed by the Department's toxicology, worker safety, and chemistry staff. The manufacturer, Mobay Chemical Corporation, of Bayleton has been notified of this specific exemption request and is in concurrence. In addition, the appropriate state agencies are also being notified of this action through routine weekly notices which the California Department of Food and Agriculture distributes. Comments received after the submission of this request will be forwarded to the EPA as soon as they are received.

Mr. Gene Miyao, Yolo County Cooperative Extension, Woodland, CA, may be contacted as a knowledgeable expert. His telephone number is (916) 666-8140.

Thank you for your help with this exemption. If you should have any questions, please contact Margaret Reiff at (916) 322-3685.

Sincerely,

Margaret Reiff

for Regina Sarracino
Supervisor of Registration
Pesticide Registration Branch

DEPARTMENT OF FOOD AND AGRICULTURE
1220 N Street
Sacramento, CA 95814

GEORGE DEUKMEJIAN, Governor

February 6, 1987

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

Dear Don:

Subject: Section 18 Emergency Exemption Reissuance Request
Bayleton/Tomatoes/To Control Powdery Mildew

The California Department of Food and Agriculture requests the reissuance of the subject specific exemption. The 1986 specific exemption has expired and without effective alternative materials, the emergency situation and the potential for severe losses due to powdery mildew is present again. This emergency exemption is not intended to circumvent the Section 3 registration requirements, but to alleviate a critical pest problem where the registered alternatives are not effective.

Copies of the January 8, 1986 specific exemption request; the March 3, 1986 specific exemption request; the March 3, 1986 authorization telegram from EPA; the March 6, 1986 Section 18 label and the May 23, 1986 amended Section 18 label are enclosed for reference.

No changes are necessary to update the emergency justification discussed in the 1983 specific exemption request. Powdery mildew has become a very serious problem for California growers of tomatoes. The systemic action of Bayleton is needed in order to achieve effective control of this disease. Without Bayleton, growers could be facing economic disaster. Several articles are enclosed which discuss the powdery mildew problem in California.

No changes are necessary to update the 1987 treatment program. The 1986 specific exemption has expired. The results of the county pesticide use reports will be forwarded to the Agency as soon as they are received. A preliminary estimate of these results has shown that approximately 40,000 acres were treated in 1986. Excellent control was achieved using Bayleton and there were no reported adverse effects.

A petition for residue tolerance, #4F-3148, for the use of Bayleton on tomatoes has been submitted to the EPA. In 1986, additional data was asked to be provided by the company. According to the manufacturer, the gathering of this data has been completed and is expected to be submitted to the EPA sometime soon.

This exemption is necessary from March 1986 through February 1987.

SURNAME					
					15

The total value of the tomato crop in recent years is listed as follows:

*Year	Acres (1000)	1,000 Short Tons	$ Million
1985	268.3	6,491.2	541.8
1984	269.1	6,901.1	584.6
1983	263.0	6,325.4	525.6
1982	262.3	6,533.0	569.2
1981	234.5	5,287.0	464.8

These figures are taken from California Agriculture - 1981, 1982, 1983, 1984, and 1985.

*Statewide figures.
Bayleton was available for use during all of the years listed.

The following economic information is provided by the county of Yolo and is representative of tomato growing areas statewide:

Fresh Market	Total Acres	Yield Per Acre	Total Production	Price	Value
1982	28,700	249 cwt.	7,154,000 cwt.	$19.7 cwt.	$140,705,000
1983	29,300	277 cwt.	8,114,000 cwt.	$19.5 cwt.	157,942,000
1984	27,900	267 cwt.	7,452,000 cwt.	$25.3 cwt.	188,576,000
1985	28,600	272 cwt.	7,783,000 cwt.	$19.4 cwt.	150,627,000
1986*	27,000	270 cwt.	7,290,000 cwt.	$20.7 cwt.	151,000,000
Processing					
1982	232,000	26.50 ton	6,148,000 ton	$68.5/ton	$421,138,000
1983	233,500	25.58 ton	5,972,930 ton	$65.7/ton	392,422,000
1984	239,700	27.50 ton	6,591,750 ton	$64.8/ton	427,145,000
1985	217,000	28.12 ton	6,102,040 ton	$64.1/ton	391,141,000
1986*	216,000	29.80 ton	6,428,500 ton	$63.8/ton	410,000,000

*Estimate
Bayleton was available for use during all of the years listed.

The yield per acre, with the use of Bayleton, has been shown to be approximately 27.5 tons/acre for processing and 267 cwt for fresh market. Without the use of Bayleton losses would range from 0 to 19 ton per acre. Powdery mildew produces such a sharp decline in tonnage by causing the leaf of the plant to die, resulting in defoliation, fruit exposure and sunburn.

The market price of the tomato crop is variable depending upon supply, demand, area and tomato variety.

The approximate cost of the treatment with Bayleton for the control of powdery mildew is $37.50 per acre, with $22.50 per acre for material costs and $15.00 per acre for application costs.

Total production costs are given as follows:

	Fresh Market	Processor
Land Preparation (Equipment, Fertilizer)	$250.35	$140.20
Growing (Labor, herbicide, weed, insect, disease control)	966.09	635.97
Total Preharvest (Including Overhead)	1,642.41	1,093.31
Harvesting	4,320.00	525.00
Total All Cost	$5,962.41	$1,618.31

This Section 18 emergency exemption use pattern was previously reviewed by the Department's toxicology, worker safety, and chemistry staff. The manufacturer, Mobay Chemical Corporation, of Bayleton has been notified of this specific exemption request and is in concurrence. In addition, the appropriate state agencies are also being notified of this action through routine weekly notices which the California Department of Food and Agriculture distributes. Comments received after the submission of this request will be forwarded to the EPA as soon as they are received.

Mr. Gene Miyao, Yolo County Cooperative Extension, Woodland, CA, may be contacted as a knowledgeable expert. His telephone number is (916)666-8140.

Thank you for your help with this exemption. If you should have any questions, please contact Margaret Reiff at (916) 322-3685.

Sincerely,

Reginia Sarracino
Supervisor of Registration
Pesticide Registration Branch

Enclosures

17

On At 15:02 03/25/87 EST

To: OCL (EPA1451)
To: PTS/REG.IX (EPA9945)
To: CA/DFA/ISU (EPX1475)
From: RSERB (EPA7356) Posted: Wed 25-Mar-87 14:56 EST Sys 63 (82)
Subject: Section 18 CA/Bayleton/Tomato

California Department of Food and Agriculture
1220 N. Street
Sacramento CA 95814+

Attention: Ms. Regina Sarracino

The Environmental Protection Agency hereby grants a specific exemption under the provisions of section 18 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended, to the California Department of Food and Agriculture for use of Bayleton (triadimefon) to control powdery mildew on tomatoes. This specific exemption is subject to the following conditions and restrictions:

1. The California Department of Food and Agriculture is responsible for ensuring that all provisions of this specific exemption are met. It is also responsible for providing information in accordance with 40 CFR 166.32. This information must be submitted to EPA Headquarters.

2. The products Bayleton 50% WP Fungicide (EPA Reg. No. 3125-320) and Bayleton 50% WP Fungicide in water soluble packets (EPA Reg. No. 3125-340) may be used. All applicable precautions, directions and restrictions on the EPA-registered product labels must be followed.

3. A maximum rate of 2.5 ounces active ingredient per acre per application may be used.

4. A maximum of 8 applications is authorized.

5. Applications will be made at 10- to 21-day intervals.

6. All applications will be made with ground or air application equipment using a minimum of 20 gallons of water per acre.

7. A 24-hour pre-harvest interval will be observed.

8. A maximum of 44,000 acres of tomatoes may be treated.

9. Applications made in accordance with the above provisions are not expected to result in residues of triadimefon and its metabolites containing chlorophenoxy and triazole moieties (expressed as the fungicide) in or on tomatoes and all tomato processing fractions in excess of 2 ppm. Secondary residues are not expected to exceed already established levels.

18

Analytical methodology is available from Residue Chemistry Branch, HED (TS-769C), EPA, 401 M. Street, SW, Washington, DC 20460; the method has been forwarded for publication in PAM-II. The Food and Drug Administration, DHHS, has been advised of this action.

10. The EPA shall be immediately informed of any adverse effects resulting from use of Bayleton in connection with this program.

11. A final report summarizing the results of this program must be submitted by June 1, 1988.
12. This specific exemption expires on February 28, 1988. Any future correspondence in connection with the exemption should refer to file symbol: 87-CA-16.

This is the 5th year that this use has been requested under section 18 of FIFRA. The decision of whether future requests for this use are approved will depend, in part, on progress made towards registration. It would be to your advantage to keep current on such progress.

E. F. Tinsworth for

Douglas. D. Campt, Director
Office of Pesticide Programs

Date: 3/23/87

STATE OF CALIFORNIA

GEORGE DEUKMEJIAN, Governor

DEPARTMENT OF FOOD AND AGRICULTURE

1220 N Street
Sacramento, CA 95814

Reg. No. 87-48

March 27, 1987

TO: COUNTY AGRICULTURAL COMMISSIONERS

SUBJECT: Section 18 Emergency Exemption No. 87-5
Bayleton/Tomatoes/To Control Powdery Mildew
EPA Reg. No. 3125-320
EPA Reg. No. 3125-340

The California Department of Food and Agriculture has reissued the subject emergency exemption, effective March 27, 1987.

This is the 5th year that this use has been requested under Section 18 of FIFRA. The decision of whether future requests for this use are approved by EPA will depend, in part, on the progress made towards registration by the manufacturer.

Enclosed is a copy of the supplemental label listing the directions for use, precautions and restrictions.

If you should have any further questions, please contact Margaret Reiff at (916) 322-3685.

Sincerely,

Regina Sarracino

Regina Sarracino
Supervisor of Registration
Pesticide Registration Branch
(916) 322-3685

cc: Dr. Douglas Spilker, Mobay Corporation
Ed Kurtz, Agricultural Consultant - EAK Ag., Inc.

STATE OF CALIFORNIA
GEORGE DEUKMEJIAN, Governor

DEPARTMENT OF FOOD AND AGRICULTURE
1220 N Street
Sacramento, CA 95814

March 27, 1987

No. 87-5

CALIFORNIA AUTHORIZATION FOR PESTICIDE USE UNDER EPA SECTION 18
SPECIFIC EXEMPTION FOR DISTRIBUTION AND USE ONLY WITHIN CALIFORNIA

Pursuant to authority granted under Section 18 of the Federal Insecticide, Fungicide and Rodenticide Act and 40 CFR, Part 166, approval is granted to use the pesticide shown below to control specified emergency.

Product: 1. Bayleton 50% Wettable Powder Fungicide Reg. No.: 1. 3125-320-AA
2. Bayleton 50% Wettable Powder Fungicide in Water Soluble Packets 2. 3125-340-AA
Location: Statewide
Crop/Site/Commodity: Fresh market and processing tomatoes
Target Pest/Problem: Powdery mildew
Dosage: Apply 2 to 5 ounces of product per acre (1 to 2.5 ounces a.i. per acre).
Dilution Rate: Apply using a minimum of 20 gallons of water per acre
Method of Application: Ground or aerial
Frequency/Timing of Application: Maximum of 8 applications at 10-21 day intervals.
Worker Safety Reentry Interval: Do not enter treated areas until spray residues have dried.
Preharvest Interval: 24 hours
Effective Date: March 27, 1987
Expiration Date: February 28, 1988

Other Requirements:

1. As stated on the federal label, all crops may be planted 12 months or later after the last application of BAYLETON without any restrictions with the following exceptions:

   a. Small grains, corn, sorghum, soybeans, beans, peas and cucurbits may be planted 35 days after the last application of BAYLETON; however, forage or vines from these crops may not be used for food or feed.

   b. Root crops may be planted 120 days after the last application of BAYLETON but tops must not be used for food or feed.

2. An action level of 2 ppm has been established for triadimefon and its metabolites on tomatoes and processed fractions. Tomatoes and processed fractions with residues greater than this shall not enter the channels of trade.

3. A maximum of 44,000 acres of tomatoes may be treated.

24

This exemption does not constitute a recommendation of the Department of Food and Agriculture and will not prevent quarantine action if illegal residues are found in or on any crop. Neither the Department nor the county agricultural commissioner, manufacturer or formulator makes any warranty of merchantability, fitness of purpose, or otherwise, expressed or implied, concerning the use of a pesticide in accordance with these provisions. The user and/or grower acknowledges the preceding disclaimer and accepts liability for any possible damage or nonperformance resulting from this use.

Regina Sarracino

Regina Sarracino
Supervisor of Registration
Pesticide Registration Branch
(916) 322-3685