DP Barcode: D166979

PC Code No.: 109901

Date Out: AUG 23 1991

TO: Rebecca Cool/Susan Stanton
Product Manager #41
Registration Division (H7505C)

FROM: Akiva D. Abramovitch, Ph.D., Section Chief
Environmental Chemistry Review Section #3
Environmental Fate & Ground Water Branch/EFED (H7507C)

THRU: Hank Jacoby, Chief
Environmental Fate & Ground Water Branch
Environmental Fate and Effects Division (H7507C)

Attached, please find the EFGWB review of...

Reg./File # : Submission # S399372

Chemical Name: Triadimefon

Type Product : Fungicide

Product Name : BAYLETON 50% Dry Flowable Fungicide

Company Name : Texas Department of Agriculture

Purpose : Review request for EMERGENCY EXEMPTION (Section 18) to control Southwestern cotton rust.

Date Received: 7/31/91 EFGWB#: 91-0819 Time (days): 2.5

Deferrals to:

_____ EEB/EFED _____ DEB/HED _____ TB1/HED

_____ SIPS/EFED _____ OREB/HED _____ TB2/HED

DP BARCODE: D166979

CASE: 282669
SUBMISSION: S399372

DATA PACKAGE RECORD
BEAN SHEET

DATE: 07/29/91

* * * CASE/SUBMISSION INFORMATION * * *

CASE TYPE: EMERGENCY EXEMP ACTION: 510 SEC18-OC F/F USE
CHEMICALS: 109901 1-(4-Chlorophenoxy)-3,3-dimethyl-1-(1H-1,2,4-triaz

ID#: 91TX0030
COMPANY:
PRODUCT MANAGER: 41 REBECCA COOL 703-557-7717 ROOM: CM2 720
PM TEAM REVIEWER: SUSAN STANTON 703-557-7889 ROOM: CM2 716A
RECEIVED DATE: 07/12/91 DUE OUT DATE: 08/31/91

* * * DATA PACKAGE INFORMATION * * *

DP BARCODE: 166979 EXPEDITE: N DATE SENT: 07/29/91 DATE RET.: / /
CHEMICAL: 109901 1-(4-Chlorophenoxy)-3,3-dimethyl-1-(1H-1,2,4-triazol-1-yl)-
DP TYPE: 001 Submission Related Data Package
ADMIN DUE DATE: ~~08/28/91~~ 08/18/91 CSF: N LABEL: Y

ASSIGNED TO	DATE IN	DATE OUT
DIV : EFED	07/31/91	/ /
BRAN: EFGB	/ /	/ /
SECT:	/ /	/ /
REVR :	/ /	/ /
CONTR:	/ /	/ /

* * * DATA REVIEW INSTRUCTIONS * * *

Does the environmental fate database for triadimefon support its use on cotton in Texas under an emergency exemption? Please note: Applications are already being made under a crisis exemption issued by the state on June 27, 1991.

* * * ADDITIONAL DATA PACKAGES FOR THIS SUBMISSION * * *

DP BC	BRANCH/SECTION	DATE OUT	DUE BACK	INS	CSF	LABEL
166969	BAB	07/29/91	~~08/28/91~~	Y	N	Y
166974	EAB	07/29/91	~~08/28/91~~	Y	N	Y
166975	TB-2	07/29/91	~~08/28/91~~	Y	N	Y
166976	RSCB	07/29/91	~~08/28/91~~	Y	N	Y
166978	EEB	07/29/91	~~08/28/91~~ 08/18/91	Y	N	Y

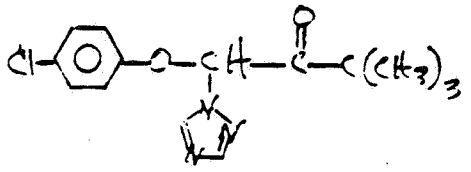
1.0 CHEMICAL:

Common Name- Triadimefon

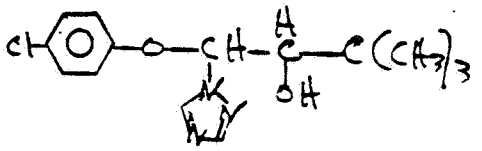
Chemical Name- 1-(4-chlorophenoxy-3,3-dimethyl-1-(1H-1,2,4-trizol-1-yl)-2-butanone

Trade Name- BAYLETON 50% Dry Flowable Fungicide

Chemical Structure-



triadimefon



triadimenol (Baytan)

2.0 TEST MATERIAL: Not applicable.

3.0 STUDY/ACTION TYPE:

The Texas Department of Agriculture requests an EMERGENCY EXEMPTION (Section 18) to use BAYLETON 50% Dry Flowable Fungicide (triadimefon) on cotton to control Southwestern cotton rust during the 1991 growing season.

4.0 DOCUMENT IDENTIFICATION:

1. Letter from Texas Department of Agriculture dated 27 June 1991 to Rebecca Cool (Program Manager) outlining the section 18 application.
2. An application for a specific exemption from Texas Dept of Agriculture dated 10 July 1991.
3. County maps of Texas.
4. Product data sheet (label).

5.0 REVIEWED BY:

Herbert L. Manning, Ph.D.
Section 3, EFGWB/EFED

Signature: Herbert L. Manning
Date: AUG 19 1991

6.0 APPROVED BY:

Akiva D. Abramovitch, Ph.D., Chief
Section 3, EFGWB/EFED

Signature: Akiva Abramovitch
Date: AUG 19 1991

7.0 CONCLUSION:

Although the environmental fate data for the Terrestrial Food Crop use of triadimefon in not totally complete (reviewed and acceptable according to our Guidelines) at this time, we do have supplemental information for all the data requirements for a field crop use (see the attached One-Liner). The application thoroughly describes our supplemental data, is aware of the potential for triadimefon and the degradate of concern (triadimenol) to leach to ground water, and has recommended ground water advisories be placed on the label (see pp. 8,9 of the application). EFGWB can concur with the granting of an Emergency Exemption (Section 18) to use triadimefon (BAYLETON 50% Dry Flowable Fungicide) to control cotton rust in the Trans-Pecos area of Texas provided ground water in the use sites are protected. The total acreage was increased to 13,000 and the amount of the active ingredient will total 13,000 pounds.

The registrant (Mobay Corp) has committed to doing all the studies needed to meet the data requirements (see the attached Data Table from the Phase 4 Review Package).

EFGWB concludes that the current status of the data requirements (Terrestrial Food crop use) is as follows:

DATA REQUIREMENTS	CURRENT STATUS
Hydrolysis	SWBSubmitted.
Photolysis in Water	SWBSubmitted.
Photolysis on Soil	SWBSubmitted.
Aerobic Soil Metabolism	SWBReviewed.
Anaerobic Soil Metabolism	SWBReviewed.
Adsorption/Desorption	Supp/Salv.
Lab Volatility	Not Required.
Soil Field Dissipation	SWBReviewed.
Long Term Field Dissipation	Reserved.
Accum. Confined Rotational Crop	SWBSubmitted.
Accum. Field Rotational Crop	Reserved.
Accumulation in Fish	SWBReviewed.
Spray Drift	Not Required.
Run-Off Monitoring	Reserved.
Grd Water Monitoring	Reserved.

7.6 Environmental Fate Assessment- See pp. 8,9 of attached application.

8.0 RECOMMENDATION:

8.1 Inform the registrant of EFGWB's conclusions in Sections 7.1-7.4, above.

9.0 BACKGROUND:

A. Introduction- See attached information.

B. Direction for Use- See the attached label.

10.0 DISCUSSION OF INDIVIDUAL STUDIES: Not applicable.

11.0 COMPLETION OF ONE-LINER: It is attached.

12.0 CBI APPENDIX: There is no CBI in this review.

Environmental Fate & Ground Water Branch
PESTICIDE ENVIRONMENTAL FATE ONE LINE SUMMARY
TRIADIMEFON
Last Update on December 18, 1990
[V] = Validated Study [S] = Supplemental Study

Common Name:TRIADIMEFON
Smiles Code:
PC Code # :109901 CAS #:43121-43-3 Caswell #:

Chem. Name : 1-(4-CHLOROPHENOXY)-3,3-DIMETHYL-1-(1H-1,2,4-TRIAZOL-1-YL)-2-BUTANONE
Action Type: FUNGICIDE (SYSTEMIC)

Trade Names:BAYLETON; AMIRAL
(Formul'tn):WP; EC; SUSP. CONCENTRATE; PASTE; DRY FLOWABLE
Physical State:

Use :TERRESTRIAL FOOD, NON-FOOD, FOOD+FEED, NON-FOOD+OUTDOOR,
Patterns :GREENHOUSE NON-FOOD, OUTDOOR RESIDENTIAL.
(% Usage) :
:

Empirical Form: $C_{14}H_{14}ClN_3O_2$
Molecular Wgt.: 291.73 Vapor Pressure: 1.5×10^{-7} Torr
Melting Point : °C Boiling Point: °C
Log Kow : 3.18 pKa: @ °C
Henry's : 1.11E -9 Atm. M3/Mol (Measured)

Solubility in ...				Comments
Water	64.00E	ppm	@20.0 °C	
Acetone	E	ppm	@ °C	
Acetonitrile	E	ppm	@ °C	
Benzene	E	ppm	@ °C	
Chloroform	E	ppm	@ °C	
Ethanol	E	ppm	@ °C	
Methanol	E	ppm	@ °C	
Toluene	E	ppm	@ °C	
Xylene	E	ppm	@ °C	
	E	ppm	@ °C	
	E	ppm	@ °C	

Hydrolysis (161-1)
[ ] pH 5.0:
[ ] pH 7.0:
[S] pH 9.0:95% REMAINS AFTER 28 WKS
[S] pH 3.0:97% " " " "
[S] pH 6.0:95% " " " "
[ ] pH :

Environmental Fate & Ground Water Branch
PESTICIDE ENVIRONMENTAL FATE ONE LINE SUMMARY
TRIADIMEFON
Last Update on December 18, 1990
[V] = Validated Study [S] = Supplemental Study

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

Aerobic Soil Metabolism (162-1)

	SOIL	%s, s, c	%OC	T1/2
[S]	SiCl	0 66 34	2.4	6 DA
[S]	SL	74 16 10	17.1	18 "

[ ]
[ ]
[ ]
[ ]

Anaerobic Soil Metabolism (162-2)
[S] SiCl 15 DAYS (STERILE CON-
[S] DITIONS INHIBIT BREAKDOWN)
[ ]
[ ]
[ ]
[ ]
[ ]

Anaerobic Aquatic Metabolism (162-3)
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]

Aerobic Aquatic Metabolism (162-4)
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]

Environmental Fate & Ground Water Branch
PESTICIDE ENVIRONMENTAL FATE ONE LINE SUMMARY
TRIADIMEFON
Last Update on December 18, 1990
[V] = Validated Study [S] = Supplemental Study

Soil Partition Coefficient (Kd) (163-1)
[S] 1.85 IN SANDY LOAM
[S] 2.4 IN SAND
[S] 2.6 IN CLAY LOAM
[S] 6.9 IN SILT LOAM
[ ]
[ ]

Soil Rf Factors (163-1)

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

Laboratory Volatility (163-2)
[ ]
[ ]

Field Volatility (163-3)
[ ]
[ ]

Terrestrial Field Dissipation (164-1)

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

[ ]
[ ]
[ ]
[ ]

Aquatic Dissipation (164-2)
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]

Forestry Dissipation (164-3)
[ ]
[ ]

Long-Term Soil Dissipation (164-5)
[ ]
[ ]

Accumulation in Rotational Crops, Confined (165-1)
[ ]
[ ]

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

Accumulation in Irrigated Crops (165-3)
[ ]
[ ]

Bioaccumulation in Fish (165-4)
[S] PARTIALLY ACCEPTED. BCF: 29 IN EDIBLE, 110 IN VISCERAL, 64 IN
[ ] WHOLE FISH. DEGRADATES NOT IDENTIFIED.

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

Ground Water Monitoring, Prospective (166-1)
[ ]
[ ]
[ ]
[ ]

Ground Water Monitoring, Small Scale Retrospective (166-2)
[ ]
[ ]
[ ]
[ ]

Ground Water Monitoring, Large Scale Retrospective (166-3)
[ ]
[ ]
[ ]
[ ]

Ground Water Monitoring, Miscellaneous Data (158.75)
[ ]
[ ]
[ ]

Environmental Fate & Ground Water Branch
PESTICIDE ENVIRONMENTAL FATE ONE LINE SUMMARY
TRIADIMEFON
Last Update on December 18, 1990
[V] = Validated Study [S] = Supplemental Study

Field Runoff (167-1)
[ ]
[ ]
[ ]
[ ]

Surface Water Monitoring (167-2)
[ ]
[ ]
[ ]
[ ]

Spray Drift, Droplet Spectrum (201-1)
[ ]
[ ]
[ ]
[ ]

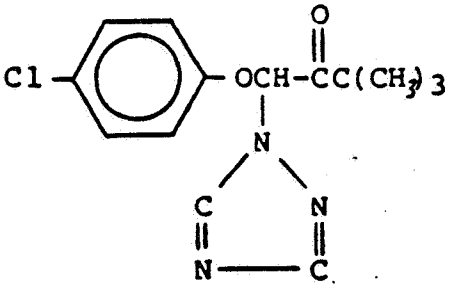
Spray Drift, Field Evaluation (202-1)
[ ]
[ ]
[ ]
[ ]

Degradation Products
KWG 0519 (Baytan) has T1/2 in soil of 9-12 months
Triazole
Hydroxy triazole

Environmental Fate & Ground Water Branch
PESTICIDE ENVIRONMENTAL FATE ONE LINE SUMMARY
TRIADIMEFON
Last Update on December 18, 1990
[V] = Validated Study [S] = Supplemental Study

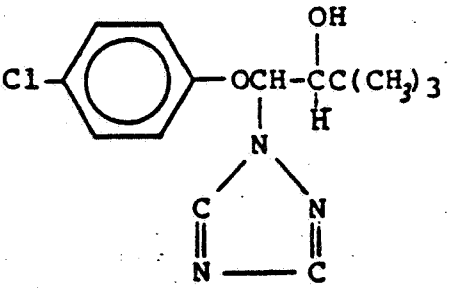
Comments
Aged residues are moderately mobile and have the potential to leach into ground water.
Soil Koc = 7,100,000 (estimate).
Kd of parent: 1.85 to 6.93

References:
Writer : H. Manning, 12/18/90



BAYLETON

[TRIADIMEFON]



KWG 0519

[Baytan]

PHASE IV ENVIRONMENTAL FATE SUMMARY TABLE FOR TRIADIMEFON

Chemical Code: 109901
Pesticide Type: Fungicide

Reviewer: H. Manning
Date:1/5/91 (updated)

Uses: (LUIS 10/24/90): Terrestrial Food Crop, Terrestrial Non-Food Crop, Terrestrial Food + Feed Crop, Terrestrial Non-Food + Outdoor, Greenhouse Non-Food Crop, Outdoor Residential

	Submitted Studies/ Addendums	DER/Addendum Review/Summary Identification	DER/Addendum Review/Summary Review Conclusions	Additional Data/Info Required?
DEGRADATION-LAB:				
161-1. Hydrolysis	None			SWBSubmitted
PHOTODEGRADATION:				
161-2. In Water	None			SWBSubmitted
161-3. On Soil	None			SWBSubmitted
161-4. In Air	None			Waived[1]
METABOLISM-LAB:				
162-1. Aerobic Soil	41686102			SSubmitted[2]
162-2. Anaerobic Soil	41686101			SSubmitted[2]
162-3. Anaerob. Aquat	None			SWBSubmitted
162-4. Aerobic Aquat	None			NA[3]
MOBILITY STUDIES:				
163-1 Leaching and Adsorp/Desorp	41616008	DER(91-0214/this Review)	DNS/Salv/Supp	Yes[4]
163-2 Volatil Lab	None			No[5]

PHASE IV ENVIRONMENTAL FATE SUMMARY TABLE (continued)

	Submitted Studies/ Addendums	DER/Addendum Review/Summary Identification	DER/Addendum Review/Summary Review Conclusions	Additional Data/Info Required?
163-3 Volatil-Field	None			No
DISSIPATION FIELD:				
164-1. Terrestr.(Soil)	41717501,41686103,-04			SSubmitted[2]
164-2. Aquat.(Sediment)	None			NA[3]
164-3. Forestry	None			NA[3]
164-4. Combin./Tank Mix	None			Yes
164-5. Long Term Terr.	None			Reserved[6]
164-5. Long Term Aqua.	None			NA[3]
ACCUMULATION STUDIES:				
165-1. Conf. Rot. Crops	None			SWBSubmitted
165-2. Field Rot. Crops				Reserved[7]
165-3. Irrigated Crops	None			NA[3]
165-4. Fish (Lab)	41619901			SWBReviewed[8]
165-5. Aqua. Non-target Organ.(Field)	None			Reserved[9]

PHASE IV ENVIRONMENTAL FATE SUMMARY TABLE (continued)

	Submitted Studies/ Addendums	DER/Addendum Review/Summary Identification	DER/Addendum Review/Summary Review Conclusions	Additional Data/Info Required?
SPRAY DRIFT:				
201-1. Droplet Spect.	None			No[1]
202-1. Field Spray Drift Evaluation	None			No[1]
GROUNDWATER MONITORING:				
166-1. Small Prospect	None			Reserved[1]
166-2. Small Retrosp.	None			Reserved[1]
166-3. Large Retrosp.	None			Reserved[1]
SURFACE WATER:				
167-1. Field Runoff	None			Reserved[1]
167-2. Surface Water Monitoring	None			Reserved[1]

FOOTNOTES:

1. Photodegradation in Air (161-4) data requirement is waived because of low vapor pressure (1.5×10^{-7} mm Hg @ 20 C) and the low mammalian toxicity of the technical product (rat inhalation LC_{50} >0.44 mg/L/hr and rat oral (LD_{50} >363 mg/kg), both in Toxicity Category 3.

2. The study was just recently submitted. It will be reviewed when Phase 5 is implemented.

3. Data are not applicable to the terrestrial, greenhouse, and residential use pattern.

FOOTNOTES: (continued)

4. The study is unacceptable due to soil sterilization by sodium azide; it may be made acceptable if it can be demonstrated that sodium azide did not change the adsorption/desorption of the soil.

5. Lab volatility data requirement (163-2) is not required because of low vapor pressure (1.5 x 10^{-7} mm Hg @ 20 C) and the low mammalian toxicity of the technical product (rat inhalation LC_{50} >0.44 mg/L/hr; Tox Category 3) and rat oral (LD_{50} >363 mg/kg; Tox Category 3).

6. Long Term Terrestrial Dissipation data (164-5) are reserved pending the results of the Terrestrial (Soil) Dissipation (164-1).

7. Field Rotational Crop data (165-2) are reserved pending the results of the Confined Rotational Crop study (165-1).

8. The study will be reviewed as part of Phase 5 of FIFRA 1988.

9. Aquatic Non-Target Organism data (165-5) are reserved pending the results of the Accumulation in Fish study (165-4).

10. Spray Drift data (201-1, 202-1) are not required because acute oral, dermal, and acute inhalation toxicities are in Toxicity Category 3 and there are no animal/plant toxicity concerns.

11. Reserved pending preliminary assessment of potential for leaching to ground water (based upon the results of various laboratory and terrestrial field dissipation studies).

12. Reserved pending review of the results of small scale retrospective ground water study (if applicable).

13. Reserved pending a preliminary assessments of the potential for runoff to surface water (based upon the results of various laboratory and field dissipation studies).

14. Reserved pending a review of the results of the field runoff study (if applicable).

TEXAS DEPARTMENT OF AGRICULTURE

RICK PERRY
Commissioner

TO: EPA7356 (RD/RSB/ERMUS)

FROM: EPX5275 (TX/DOA)

DATE: June 27, 1991

ATTN: Becky Cool

SUBJ: Requirements of 40 CFR 166.43(a)

Dear Ms. Cool:

This is to advise you that the Texas Department of Agriculture hereby issues a crisis exemption as of this date and authorizes the use of Bayleton 50% Dry Flowable Fungicide for control of southwestern cotton rust (Puccinia cacabata) in American pima and upland cotton. We take this action following consultation with your office by TDA staff person, Elvis Cozart. The requirements of 40 CFR 166.43(b) are addressed below:

(1) Triadimefon is the common name of the active ingredient in Bayleton 50% Dry Flowable (EPA Reg. No. 3125-320).

(2) American pima and upland cotton growing adjacent to or in close proximity to grama grass infested pastures and rangeland in Pecos, Reeves and Ward Counties.

(3) The "use pattern" as defined at 40 CFR 162.3(qq) is as follows.

- The target pest is Puccinia cacabata.
- Product may be applied utilizing either aerial or ground equipment. Minimum spray volumes per acre shall be 5 gallons for aerial equipment and 20 gallons for ground equipment.
- Initiation of product application is to follow rainfall events.
- Product is to be applied at the rate of 8 oz. (4 oz. A.I.) per acre per application at 10-14 day intervals. DO NOT make more than 4 applications of product per growing season.
- DO NOT make an application of product within 61 days prior to harvest.

P.O. Box 12847, Austin, Texas 78711 • (512) 463-7476

(4) Use of product is authorized to begin on June 27, 1991.

(5) Based on information supplied to this agency by Mobay Corp., residues of triadimefon in/on cotton seed are not expected to exceed 0.2 ppm. Residues of triadimefon in the process fractions obtained from cotton seed are expected to be less than 0.2 ppm.

(6) This crisis exemption is directly related to the loss of the EBDC based fungicides

Within 15 days from the issuance of this crisis exemption, this agency will apply to EPA for a specific exemption.

Sincerely,

Barry McBee
Deputy Commissioner

BM:ecb

AN APPLICATION

FOR A

SPECIFIC EXEMPTION

TO AUTHORIZE

USE OF

BAYLETON 50% DRY FLOWABLE FUNGICIDE

ON COTTON

TO CONTROL

SOUTHWESTERN COTTON RUST

Texas Department of Agriculture
Rick Perry, Commissioner
P. O. Box 12847
Austin, TX 78711

July 10, 1991

9-15-91

TABLE OF CONTENTS

TEXAS DEPARTMENT OF AGRICULTURE

RICK PERRY
Commissioner

July 10, 1991

Ms. Rebecca Cool
Registration Support Branch (H750C)
U. S. Environmental Protection Agency
Crystal Mall, Bldg. 2, Room 716B
1921 Jefferson Davis Highway
Arlington, VA 22202

Subject: Specific exemption application
Triadimefon/Southwestern cotton rust/cotton

Dear Ms Cool:

As a result of the development this season of the endemic disease Southwestern cotton rust in three counties in the Trans-Pecos area of Texas, and the lack of a registered chemical control, the Texas Department of Agriculture issued a crisis exemption for triadimefon on June 27, 1991.

Triadimefon, or Bayleton 50% Dry Flowable Fungicide, has been demonstrated to give suppression of the causal fungal organism, Puccinia cacabata, and was needed because producers have lost the use of EDBC fungicides to control this disease.

The need for triadimefon still persists on a maximum of 3,000 acres of American pima and Upland cotton in Pecos, Reeves and Ward counties. Therefore, the Texas Department of Agriculture hereby applies for a specific exemption to authorize the use of this product to control Southwestern cotton rust during the 1991 growing season. The requirements of 40 CFR 166.20(a,b) and other supporting information are enclosed for your review.

We would very much appreciate an expeditious response to this request.

Sincerely,

Barry R. McBee
Deputy Commissioner

Enclosure

BRM:AA/pmr

cc: John Larson, EPA, Region VI
Rodney Holloway, Texas A & M University

P.O. Box 12847, Austin, Texas 78711 • (512) 463-7476

TEXAS DEPARTMENT OF AGRICULTURE

RICK PERRY
Commissioner

amendment to application - acreage/county changes.

TO: EPA735G (RD/RSB/ERMUS)

FROM: EPX5275 (TX/DOA)

DATE: July 23, 1991

ATTN. Rebecca Cool

SUBJ: Crisis/specific exemption amendment
Triadimefon/cotton/southwestern cotton rust

Dear Ms. Cool:

On June 27 of this year, the Texas Department of Agriculture issued a crisis exemption authorizing the use of triadimefon (as Bayleton 50% Dry Flowable Fungicide) for the control of southwestern cotton rust (Puccina cacabata) in American pima and upland cotton. This crisis exemption was restricted to cotton in Pecos, Reeves, and Ward counties.

We were notified yesterday that within the last three days, this disease has now been found to be spreading at an alarming rate in two other counties in the Trans-Pecos area of Texas--El Paso and Hudspeth. According to Texas A&M University specialists in the region, this unusual outbreak of southwestern cotton rust in these two counties is due to a very heavy amount of causal-organism spore-inoculum this year, an increase in acreage of American pima cotton the past few years, and heavier than normal and more frequent rain showers during recent weeks.

Since this additional cotton in the Trans-Pecos area of Texas could incur severe foliage loss and subsequent yield reductions, we hereby amend our crisis exemption of June 27, 1991 as follows:

- The site will include El Paso and Hudspeth counties.
- Use of Bayleton in the additional sites is authorized to begin on July 23, 1991.

Other requirements are identical to those detailed in the notification on June 27.

P.O. Box 12847, Austin, Texas 78711 • (512) 463-7476

This agency has applied for a specific exemption for the use of triadimefon on cotton which we are requesting to be amended as follows:

- Section 166.20(a)(1)(ii): Contact persons.

  Add Mr. Phillip Glogoza, Extension Entomologist, 1030 Zaragosa, Suite A, El Paso, TX 79907 (Phone-915-859-7725).

- Section 166.20(a)(3)(i): Sites to be treated.

  In addition to the counties listed in our original application, list two additional counties in the Trans-Pecos area of Texas, El Paso and Hudspeth.

- Section 166.20(a)(3)(iv): Acreage proposed for treatment.

  Add an additional 10,000 acres to the original estimate of 3,000 for a total of 13,000 acres.

- Section 166.20(a)(3)(v): Quantity of product required.

  Change the estimated amount of fungicide required to 13,000 lb. a. i. triadimefon or 26,000 lb. Bayleton 50% Dry Flowable Fungicide.

We very much appreciate your assistance with this exemption under the emergency condition in Trans-Pecos cotton.

Sincerely,

Barry McBee
Deputy Commissioner

BM/pmb

cc: John Larson, EPA Region VI
Rodney Holloway, Texas A & M University

Requirements of 40 CFR 166.20(a,b)

Section 166.20(a)(1)(ii): Contact persons.

Mr. Charles Stichler
Extension Agronomist
Box 1298
Ft. Stockton, TX 79735
Phone: (915) 336-8585

Dr. Mark Black
Extension Plant Pathologist
P. O. Drawer 1849
Uvalde, TX 78801
Phone: (512) 278-9151

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Section 166.20(a)(2)(i)(A): Identity of pesticide.

EPA Reg. No. 3125-320; U.S. Patent No. 3,912,752--triadimefon (Bayleton 50% Dry Flowable Fungicide). (See Section 3 for labeling examples.)

Section 166.20(a)(3)(i): Sites to be treated.

Product may be utilized to control Southwestern cotton rust, Puccinia cababata, in American pima and upland cotton in the Pecos, Reeves, and Ward counties (Section 4).

Section 166.20(a)(3)(ii): Method of application.

Product may be applied utilizing either aerial or ground equipment. Minimum spray volumes per acre shall be 5 gallons for aerial equipment and 20 gallons for ground equipment.

Section 166.20(a)(3)(iii): Rate of application.

Product is to be applied at the rate of 8 oz. (4 oz. A.I.) per acre per application at 10-14 day intervals. Four applications of product per growing season are authorized.

Section 166.20(a)(3)(iv): Acreage proposed for treatment.

It is estimated that a maximum 3,000 acres of cotton will require treatment for control of Southwestern cotton rust.

Section 166.20(a)(3)(v): Quantity of product required.

750 lbs. a.i.; 1,500 lbs. of product.

Section 166.20(a)(3)(vi): Qualifications of applicators; requirements and restrictions on use of product.

- Bayleton 50% Dry Flowable Fungicide (EPA Reg. No. 3125-320) is not classified as a "restricted use" pesticide. Therefore, applicators are not required to be certified to apply the product for its presently registered uses. However, the Texas Department of Agriculture anticipates that practically all of the product will be applied by private applicators or by persons under their direct supervision.

- All applicable directions, precautions and restrictions on the EPA-registered label for Bayleton 50% Dry Flowable Fungicide must be followed.

- For use only on American pima and Upland cotton growing adjacent to or in close proximity to grama grass-infested pasture and rangeland in Pecos, Reeves and Ward Counties.

- Initiation of product application is to follow rainfall events.

- Product is to be applied at the rate of 8 oz. (4 oz. A.I.) per acre per application at 10-14 day intervals. DO NOT make more than 4 applications of product per growing season.

- Product may be applied utilizing either aerial or ground equipment. Minimum spray volume per acre shall be 5 gallons for aerial equipment and 20 gallons for ground equipment.

- DO NOT apply where run-off from areas scheduled for treatment is likely to occur to aquatic habitats (e.g., forecasted weather conditions favor this).

- Users are advised not to apply Bayleton 50% Dry Flowable Fungicide where the water table (groundwater) is close to the surface and where the overlying soils are very permeable, i.e., well drained soils such as loamy sands. Your local agricultural agencies can provide further information on the type of soil in your area and the depth to the water table.

- DO NOT make an application of product within 61 days prior to harvest.

- The suggested expiration date for this specific exemption is November 1, 1991.

Section 166.20(a)(4)(i): Alternative methods of control.

Since cotton has been dropped from mancozeb (EBDC) fungicide labels (i.e., in 1989), no chemical controls are available to growers to protect their cotton crops from Southwestern cotton rust. Moreover, even when EBDC fungicides were an alternative, they were only effective when applied before significant development of a coming disease-outbreak, i.e., when used prior to summer rains. Research is underway with various sterol-inhibiting fungicides such as triadimefon and other chemicals in attempt to find a replacement for EBDC fungicides (see section 5).

Section 166.20(a)(4)(ii): Alternative cultural practices.

No feasible alternative cultural practices are available. Obviously, since this disease is specific to the Trans-Pecos area of Texas, and even more specific to (mostly) fields in that region adjacent to grama grass hosts of the disease organism, one nonviable "alternative" would be to avoid planting the more susceptible American pima cotton to these fields.

Section 166.20(a)(5): Effectiveness of proposed use.

Stichler and Black (1990) found that 2 to 3 applications of triadimefon reduced total lesions of Southwestern cotton rust over an untreated control (Section 6).

Section 166.20(a)(6): Anticipated residues.

Based on information supplied to this agency by Mobay Corp., residues of triadimefon in/on cotton seed are not expected to exceed 0.2 ppm. Residues of triadimefon in the process fractions obtained from cotton seed are expected to be less than 0.2 ppm.

Section 166.20(a)(7): Discussion of risk information.

Human Health

Triadimefon (the active ingredient in Bayleton 50% Dry Flowable) is a triazole fungicide compound registered for use on various agricultural crops. This application supports its use on cotton to control southwestern cotton rust in the El Paso valley.

Toxicological Data

Acute exposure data from laboratory animals indicate that triadimefon has moderate mammalian toxicity. Respective median lethal doses of triadimefon reported for oral and dermal routes of exposure in rats are 363 mg/kg and >5,000 mg/kg. Technical triadimefon is shown to cause slight skin irritation. Studies in rats show that triadimefon can induce weak developmental and reproductive effects at high dose levels. The

chemical caused cleft palates in the offspring at levels of 100 mg/kg/day and maternal toxicity (increased motor activity and depression of body weight) at 25 mg/kg/day. It also caused decreased fertility and litter size and some fetotoxic effects. No significant changes were reported in gene mutation and chromosomal tests.

Long-term effects of triadimefon in humans are not known. Rats exposed to lifetime dietary doses of triadimefon showed significantly decreased body weights and decreased levels of red blood cell count and hemoglobin at mid-dose level of 25 mg/kg/day. No evidence of any carcinogenic effects were observed in this 2-year dietary study. No significant toxic effects including cholinesterase inhibition were reported in cows given triadimefon capsules for 28 days at the highest level of 250 ppm.

Risk Assessment

The U.S. Environmental Protection Agency (EPA) or International Agency for Research on Cancer has not evaluated triadimefon for evidence of human oncogenic potential. EPA has calculated an oral RfD (reference dose) of 30 ug/kg/day, based on a No Observed Effect Level of 2.5 mg/kg/day for changes in blood components in the 2-year rat study and applying a safety factor of 100. This RfD will correspond to a maximum triadimefon intake level of 2.1 mg/day for a 70 kg adult without causing any adverse health effects.

Triadimefon has EPA-established tolerance levels on several agricultural crops; the tolerance levels in or on cotton seed is pending EPA review. The proposed tolerances in or on cotton are as follows: cotton seed, 0.2 ppm, cotton seed (meal), 0.05 ppm; cotton seed (cake), 0.05; and cotton seed (oil), 0.05 ppm. The Maximum Theoretical Residue Contribution from the proposed tolerances in cotton seed products is estimated to be 0.013125 ug/kg/day, which will be about 0.0438% of the RfD.

The proposed residue levels on cotton were determined from an application rate (0.223 lb a.i./acre/application) of Bayleton 25% WP. Applications of Bayleton 50% dry flowable at a rate of 0.25 lb a.i./acre maximum up to 4 applications on cotton in accordance with the provisions are not expected to result in significant residue levels (exceeding 1 ppm) in or on cotton seed/cotton seed oil. Assuming that cotton seed products represent 25% of total dietary intake by cattle, the proposed residue level of 0.2 ppm in or on cotton seed would be equal to a dietary concentration of 0.05 ppm. Experimental dosing of cattle (25 ppm triadimefon in the diet on dry weight basis) was shown to result in a maximum concentration of the chemical in milk and meat at 0.0142 and 0.412 ppm, respectively, and therefore, would not be expected to exceed the existing tolerances of 0.04 ppm for milk and 1 ppm for meat. These levels appear to be adequate to protect the public health and should not cause any unreasonable risk to humans due to dietary exposure.

The hazard from triadimefon exposure from its use on cotton appears to be low. Triadimefon has the potential to cause slight skin irritation as well as developmental and reproductive effects at very high dose levels. However, exposure to triadimefon under normal conditions of handling and use (with protective clothing, rubber gloves, and face shields) should present negligible hazard. Following precautionary statements on the product label appears to be adequate for the protection of field workers and mixer/loaders and applicators. No major adverse human health effects would be expected to result by the approval of this registration.

Threatened and Endangered Species

A Section 18 request has been made to allow the use of triadimefon (trade name Bayleton) on cotton to control southwestern cotton rust. The area for use is restricted to Pecos, Reeves and Ward counties.

Triadimefon is a systemic fungicide with protective and curative action. It is an ergosterol biosynthesis inhibitor and a member of the triazole chemical family.

Within this three county area, there are 17 species of special concern as listed by the Texas Parks and Wildlife's Natural Heritage Program (Table 1, Section 11). The toxicological data given below is compiled from The Agrochemicals Handbook, 2nd Ed. 1987 and other sources as listed.

Plants

Triadimefon is known to be phytotoxic when applied at excessive rates, therefore plant species of special concern have been included in this review. There are nine plant species of special concern within this area, eight of these species are Category 1 (C1) or Category 2 (C2) listed.

A C1 listing means that the USFWS has substantial information on biological vulnerability and threats to support proposing to list as endangered or threatened. Data are being gathered on habitat needs and/or critical habitat designations. A C2 listing means that information indicates that proposing to list as endangered or threatened is possibly appropriate, but substantial data on biological vulnerability and threats are not currently known to support the immediate preparation of rules. Further biological research and field study will be necessary to ascertain the status and/or taxonomic validity of the taxa in Category 2.

The plant species are as follows:

Species	County
Bushy wild buckwheat	Pecos
Glass Mountain coral-root	Pecos
Lloyd's hedgehog cactus	Pecos
Phantom Lake tryonia	Reeves
Puzzle sunflower	Pecos, Reeves
Tharp's blue-star	Pecos
Two-spike rock daisy	Pecos
Wright's water-willow	Pecos

Mammals

Triadimefon ranges from slightly to moderately hazardous in rats. The acute oral LD_50 for male rats is 568 mg/kg, and for female rats is 313 mg/kg. The dermal LD_50 for rats is greater than 1000 mg/kg, which is in the range of slightly hazardous (Table 2, Section 11).

Tests indicate that there are few carcinogenic, no mutagenic, and no teratogenic effects from exposure to various amounts of triadimefon. A reproductive study indicated that only at extreme high doses does triadimefon affect male rats.

There are currently no mammalian species of special concern in the reviewed area.

Aves

The acute oral LD_50 for canaries is greater than 1000 mg/kg, for Japanese quail is 1750-2500 mg/kg, for mallard ducks is greater than 4,000 mg/kg and for chickens is about 5000 mg/kg. These acute oral LD_50's range between slightly and practically non-toxic. Eight-day dietary studies indicate the same range, with LC_50 values of greater than 10,000 mg/kg for mallard ducks and greater than 4640 mg/kg for bobwhite quail (Table 2, Section 11).

There are currently no avian species of special concern within the reviewed area.

Fish

The LC_{50} values for fish species ranges from moderately to slightly toxic. For the bluegill sunfish the 96 hour LC_{50} is 11 mg/l, for orfe it is 13.8 mg/l, and for rainbow trout is 14 mg/l. For carp the 48 hour LC_{50} is 7.6 mg/l (Table 2, Section 11). Within this area there are four threatened or endangered fish species. They are the Comanche Springs pupfish (Reeves County), the Leon Springs pupfish (Pecos County), the

Pecos gambusia (Pecos and Reeves counties), and the Pecos pupfish (Pecos, Reeves, and Ward counties).

Reptiles

There are no known toxicity data for reptilian species for triadimefon. However, given that the reptilian taxon is more closely related to the avian taxon than others, the toxicities between the two animal groups should be similar. There is one state threatened reptilian species in the reviewed area; the Big Bend blackhead snake which is found in Pecos County.

Amphibians

There are no known toxicity data for amphibians, although toxicity data for fish species should be similar. There are currently no amphibian species of special concern within this area.

Nontarget Animals

The only toxicological data available for invertebrate species is for the Daphnia magna. The LC_{50} (48 hour) is 1.6 mg/l, which is in the range of moderate toxicity (Table 2, Section 11). This data is from the 1988/89 MSDS Reference for Crop Protection Chemicals book, 1st Ed.

There are three snail species that are of special concern within Pecos County. They are the Diamond Y Spring snail, the Gonzales Spring snail, and the Pecos assiminea snail.

This product is non-toxic to bees.

Summary

Concerning the toxicity to plant species the following restriction is suggested for habitat containing Lloyd's hedgehog cactus:

> "Product should be restricted from use within 100 yards of known habitat."

There should be an attempt to reduce excessive exposure to known habitats of the remainder of the plant species listed above.

In addition to the labeled precautions to keep this product out of lakes, streams, and ponds the following label restriction is suggested to protect the fish species found in the reviewed area:

> "Do not apply where product run-off is likely to occur to aquatic habitats."

In Reeves County, the above restriction applies mainly to the area where Comanche Springs pupfish resides. This area is delineated by Interstate 10 on the North, on the Southwest by the Jeff Davis county line and on the Southeast by the Pecos County line.

Additionally, the above restriction is provided for the protection of the snail populations within Pecos County.

To determine whether an area is known habitat for a particular species, please contact the Texas Parks and Wildlife's Natural Heritage Program at (512) 448-4311.

Environment

Information available for the product Bayleton 50% Dry Flowable Fungicide (triadimefon) in TDA Pesticide Registration Files includes only the Environmental Fate One Line Summary (Environmental Fate and Groundwater Branch, Environmental Protection Agency, 1990) and a summary from *The Agrochemicals Handbook* (Royal Society of Chemistry, 1987).

Triadimefon is a triazole with systemic fungicide action. It is absorbed by roots and leaves, readily translocated in young growing tissues, but less readily translocated in older, woody tissues. In plants and in soil, the carbonyl group is reduced to a hydroxyl group, with the formation of triadimenol.

Triadimefon is stable to hydrolysis. (At pH 3, 6 and 9, at least 95% remained after 28 weeks.) It is also stable to photolysis on soil, although photolysis in surface water occurred with a half-life of 10 to 12 hours. Laboratory aerobic soil metabolism half-lives for triadimefon in silty clay loam and sandy loam soils were 6 and 18 days, respectively; the soil half-life in silty clay loam soil under anaerobic lab conditions was 15 days. Dissipation studies show that the product is persistent under field conditions. Parent triadimefon half-lives in sand, fine sandy loam and loam soils were 5.5, 4.5 and 8 months in the 0-6 inch soil layers, and 8.7, 17 and 23 months in the 6-12 inch soil layers, respectively. The triadimenol metabolite half-lives in the sand and fine sandy loam soils were 6 and 24 months in the 0-6 inch soil layers, respectively, and 6.5 months in the 6-12 inch layer of the sand soil. These values indicate that triadimefon and degradate, triadimenol, are sufficiently persistent under normal field conditions to be able to reach groundwater.

Soil partition coefficients (K_d values) for triadimefon in sandy loam, sand, clay loam and silt loam soils were 1.85, 2.4, 2.6 and 6.93, respectively. These values indicate high potential for leaching in soils. Soil R_f factors varied from 0.16 to 0.27 in five soils which ranged from 91 to 0% sand, 1 to 57% silt, 1 to 59% clay, and 0.5 to 5.1% organic matter. These R_f values indicate low potential for movement. The water solubility of triadimefon is 64 mg/L (indicating high leaching

potential) and the log octanol/water partition coefficient is 3.18 (indicating moderate leaching potential).

Aged residues of triadimefon are mobile and have the potential to leach into groundwater. Solubility, soil adsorption, and degradation properties for the degradate, triadimenol, indicate low to high potential for leaching in soils. The range reported for soil adsorption coefficients in three soils (loam, 3.0% organic matter; silty clay, 2.1% organic matter; and sand, 3.7% organic matter) were from 2.37 to 5.26, all values indicating low soil binding potential (high mobility potential). Thin-layer chromatography results in two soils showed frontal R_f values of 0.16 (silty clay, 0.5% organic matter) and 0.58 (sandy loam, 2.3% organic matter) indicating low and intermediate mobility potential, respectively. Triadimenol is stable to hydrolysis, soil surface photolysis, aerobic and anaerobic soil metabolism and volatilization. No apparent hydrolysis occurred at pH 4.5, 7.1 or 9.2. Aerobic half-life was estimated to be 8 to 9 months and anaerobic half-life considerably greater than 8 to 9 months. Half-lives of the metabolite under field conditions, as summarized above, ranged from 6 to 24 months in sand and fine sandy loam soils.

Triadimefon is to be applied at the rate of 8 oz. (4 oz. active ingredient) per acre per application at 10-14 day intervals, with no more than four applications of product per growing season. The area of proposed use is in Reeves, Ward and Pecos counties. Much of the groundwater in this area of use is considered vulnerable to pesticide contamination based on the DRASTIC model evaluation. Based on the proposed use situation and because the product and aged residues are mobile in soil, a groundwater advisory statement would be appropriate. This statement would be to advise the pesticide applicators to protect vulnerable groundwater in the region proposed for use.

In addition to the "Environmental Hazards" language on the federal Bayleton label, the following statements are recommended for the specific exemption label:

> **Users are advised not to apply Bayleton (triadimefon) where the water table (groundwater) is close to the surface and where the soils are very permeable, i.e., well-drained soils such as loamy sands.**
>
> **Do not apply when forecasted weather conditions favor runoff from areas scheduled for treatment.**

Section 166.20(a)(8): Coordination with other State/Federal agencies.

Other affected state or federal agencies have been notified of TDA's intent to make application to the EPA for this specific exemption. Comments received on this years request will be forwarded to the EPA when and if received.

Section 166.20(a)(9): Notification of registrant.

Mobay Corporation has been notified by phone of TDA's intent to make application to EPA for this specific exemption.

Section 166.20(a)(10): TDA's enforcement authority.

The Texas Department of Agriculture (TDA) is the state lead agency responsible for enforcing the FIFRA, as amended, within the state of Texas. This charge is the result of a grant enforcement agreement between the TDA and EPA. Since specific exemptions are granted pursuant to the authority of FIFRA Section 18, it is TDA's view that we have the legal authority and the responsibility to enforce any special requirements that EPA may see fit to impose on this specific exemption.

TDA's Pesticide Enforcement Program has a staff of Pesticide Specialists located in various areas around the state. These specialists will enforce any special requirements related to this specific exemption.

Section 166.20(a)(11): Repeated uses.

Not applicable.

Section 166.20(b): Information required for a specific exemption.

(1) Scientific name: Puccinia cababata; common name(s): Southwestern cotton rust.

(2) Southwestern cotton rust (or "the true rust of cotton") has been recognized as a disease of cotton in the western U. S. for some time and was mentioned in the 1953 Yearbook of Agriculture. This disease was first reported in northern Mexico in 1893 (Section 7). Since then it has been recognized as a problem for cotton in that part of the world and in adjacent areas of the southwestern U. S. Losses from the disease have ranged from ca. 26% to some of Mexico's crop in 1985, to 50-75% to New Mexico cotton in 1959, to 75% damage in Arizona in 1930.

This year conditions of weather and alternate hosts were especially favorable for spread of Southwestern cotton rust in cotton in the Trans-Pecos area of Texas. With the finding of rust on gamma grass alternate hosts--and in cotton fields--and with the threat of showers which would make conditions even more conducive to spread of the disease organism, a crisis situation was declared by TDA on June 27, 1991 and an exemption issued following the requirements of 40 CFR 166.43(b), to authorize the use of triadimefon on cotton in the three west Texas counties (Section 8).

(3) Not applicable.

(4) As mentioned previously, Southwestern cotton rust has been a problem in northern Mexico cotton and in cotton in the adjacent areas of the United States Southwest since the late 1800s. In dry years Southwestern cotton rust is less of a problem, but in years with frequent summer showers, infection is severe and can cause defoliation and breaking of stems. This foliage loss can cause premature opening of unripe bolls, reduce yields, and result in quality and harvesting problems. Losses from this disease can be very high and when the damage is severe many of the infested fields may be shredded or plowed. The Balmorhea area of Texas (in the 3-county region) has severe infection about every four or five years when timely showers cause the fungus to release airborne spores that infect the cotton.

The Southwestern cotton rust fungus grows on a grama grass host unrelated to cotton from one summer to the next. In the Balmorhea area of Texas, extension pathologists have found it mainly on Six weeks gramma and Roth Rock gramma. The heavy infection this area had last year indicates that conditions favorable for infection occurred quite frequently during the early summer. Favorable conditions are 90% relative humidity, temperatures below 83 degrees Fahrenheit for 13 hours or longer. These same conditions favor infection on the native grama grass hosts, therefore, there is no doubt that the grama grasses are heavily infected at this time (early July). Early season attacks of rust in cotton are usually light, but with succeeding showers, infections usually increase in severity. Generally the earlier the infection starts, the worse the disease damage gets before the season's end.

The region has had several showers and in early June, cotton scouts in the Balmorhea area were finding rust pustules on cotton leaves. The situation has worsened as the season has progressed into July.

(4)(i)Texas crop enterprise budgets for 1986-1990 (projections for planning purposes including gross and net returns) for various systems of cotton production in the Trans-Pecos area are presented in Section 9. Also, planted and harvested cotton acreage, yield per acre, and gross return in dollars per acre are presented for 1986-1990.

(4)(ii&iii) Estimation of the gross and net revenues with and without the availability of Bayleton 50% Dry Flowable Fungicide are based on statistics and budgets available from the Texas Agricultural Extension Service and the Texas Agricultural Statistics Service, and on estimates that a maximum of 2,300 acres of American pima cotton and 700 acres of Upland cotton will be threatened with this disease in Texas this year (Section 10). Therefore, we estimate

that potential losses to Southwestern cotton rust could be as high as $110,740 for Upland cotton producers and $648,301 for American pima producers in the absence of triadimefon--for a total potential loss of $759,041 to producers in the 3-county area. If a minimum multiplier effect of 2 is considered in terms of the effect of this loss of cash flow to the Trans-Pecos economy, then losses would be greater than $1.5 million.

PRODUCT DATA SHEET

MOBAY CORPORATION
A Bayer USA INC. COMPANY
AGRICULTURAL CHEMICALS DIVISION
P. O. Box 4913
Kansas City, Missouri 64120-0013

BAYLETON 50% Dry Flowable Fungicide

EPA Reg. No. 3125-320

2-21-90

Platte Chemical Company

419 18th Street
P.O. Box 667
Greeley, Colorado 80632
303-356-4400

November 2Ø, 1989

TO: Clyde Wilson
Mobay

FROM: Dennis Burchett
VP Regulatory Affairs

SUBJECT: 2(ee) Clean Crop Mancozeb 4L

By way of this letter, Platte Chemical Co. hereby authorizes Mobay permission to pursue 2(ee) registrations for use with Bayleton 5ØDF as a tank mix.

cc: Bill Mahlburg

DMB/ph

PRODUCT BULLETIN

This recommendation is made as permitted under FIFRA Section 2(ee) and has not been submitted to or approved by the EPA.

January 16, 1990

FOR USE IN TEXAS ONLY

FIFRA Section 2(ee) Recommendation

BAYLETON 50% Dry Flowable

EPA Reg. No. 3125-320

RECOMMENDED APPLICATIONS

The following tank mix recommendations are made for the improved control of specific diseases infesting wheat. Before mixing BAYLETON 50% Dry Flowable with Penncozeb™, Clean Crop Mancozeb 80 WP, Clean Crop Mancozeb 4L, or Mancozeb Fungicide by Riverside/Terra Corp., read and carefully observe the precautionary statements, directions of use, and other information appearing on the EPA registered product labels.

CROP	FOR IMPROVED CONTROL OF:	2 OUNCES PER ACRE	2 POUNDS PER ACRE
Wheat	Helminthosporium leaf spots Septoria leaf spots (leaf blotch) Septoria glume blotch Tan spot Rusts	BAYLETON 50% DF	Penncozeb, OR Clean Crop Mancozeb 80 Wettable Powder, OR Clean Crop Mancozeb 4L, OR Mancozeb Fungicide by Riverside/Terra Corp.

This bulletin must be in the possession of the user at time of pesticide application.

IMPORTANT: Before using the products, read and carefully observe directions, cautionary statements and other information appearing on the EPA registered product labels. This product is sold subject to the Conditions of Sale set forth on the container labels.

BAYLETON is a Reg. TM of Bayer AG, Germany.

Penncozeb is a TM of Pennwalt Corporation.
Clean Crop is a Reg. TM of United Agri Products, Inc.

PB 90-23
Supersedes MAR 89-13

MOBAY CORPORATION
A Bayer USA INC. COMPANY
AGRICULTURAL CHEMICALS DIVISION
Kansas City, Missouri 64120

320-6764.BLD

U.S. LABEL

Base Reg. (6764)

Reason to Issue: To delete use on almonds.

Date of Draft: 7/12/89 (T)
Supersedes Draft Dated: 10/15/87

EPA Reg. No. 3125-320

BAYLETON®

50% Dry Flowable

FUNGICIDE

FOR CONTROL OF SPECIFIED DISEASES ON CERTAIN FIELD, FRUIT AND VEGETABLE CROPS

ACTIVE INGREDIENT:	
1-(4-Chlorophenoxy)-3,3-dimethyl-1-(1H-1,2,4-triazol-1-yl)-2-butanone	50%
INERT INGREDIENTS	50%
	100%

U.S. Patent No. 3,912,752

EPA Reg. No. 3125-320

STOP - READ THE LABEL BEFORE USE

KEEP OUT OF THE REACH OF CHILDREN

WARNING

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

AVISO

PRECAUCION AL USUARIO: Si usted no puede leer o entender inglés, no use este producto hasta que la etiqueta le haya sido explicada ampliamente.
(TO THE USER: If you cannot read or understand English, do not use this product until the label has been fully explained to you.)

NET WEIGHT _____ POUNDS

MOBAY CORPORATION
A Bayer USA INC. COMPANY
AGRICULTURAL CHEMICALS DIVISION
Box 4913, Kansas City, Mo. 64120

Note: Underlined letters in chemical nomenclature should be italicized when printed, not underlined.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

WARNING

Harmful if swallowed, inhaled, or absorbed through the skin. Causes eye irritation. Do not breathe dust or 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 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 other crops grown for food or forage. Keep out of lakes, streams, and 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.

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% Dry Flowable 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 AND/OR INJURY TO THE CROP TO WHICH THE PRODUCT IS APPLIED 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 OTHER CROPS, ANIMALS, MAN, OR THE ENVIRONMENT. MOBAY OFFERS, 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 MOBAY AND ARE, THEREFORE, THE RESPONSIBILITY OF THE BUYER.

MIXING

Add the recommended amount of BAYLETON 50% Dry Flowable into the spray tank while filling with water to the desired level. Operate the agitator while mixing. If other materials are added to the spray tank, the BAYLETON 50% Dry Flowable should be thoroughly dispersed prior to the addition of other materials.

COMPATIBILITY

BAYLETON fungicide is physically compatible with many registered insecticides, miticides, and fungicides. To determine the compatibility of BAYLETON fungicide with other products, the following procedure should be followed: Pour the recommended proportions of the products into a suitable container of water, mix thoroughly and allow to stand at least five (5) minutes. If the combination remains mixed or can be re-mixed readily, the mixture is considered physically compatible. For further information contact your local Mobay representative.

NOTE TO USER

For worker protection during mixing, loading, and during application, wear a hat, long sleeve shirt, and long legged trousers or overalls. In addition, during mixing and loading, wear rubber or neoprene gloves and a dust mask. Protective clothing should be laundered separately following application.

RECOMMENDED APPLICATIONS

BAYLETON 50% Dry Flowable may be applied in a minimum of 20 gallons of spray solution per acre by ground or in a minimum of 5 gallons of spray solution per acre by aircraft spray equipment except as noted under "Remarks" for each crop. Check equipment calibration frequently. Complete coverage and uniform application are essential for the most effective results, especially when lower spray volumes are applied. If necessary, increase the spray volume per acre for complete crop coverage.

RECOMMENDED APPLICATIONS (Continued)

Do not apply this product through any type of irrigation system.

Consult your State Agricultural Experiment Station or Extension Service Specialist or Mobay representative for guidance on the selection of specific dosage rates and timing of applications appropriate for your specific crop and disease. State regulations may contain additional restrictions or requirements. Check the Remarks and restrictions sections of this label for additional directions.

Crop	Disease	Rate of BAYLETON 50% Dry Flowable		Remarks (Also Refer to Directions for Use)
FRUITS		Oz/A	Oz/100 gal[1/]	
Apples	Cedar-apple rust	2 to 8	1/2 to 2	Make the first application at the green-tip stage and continue applications at 7 to 14 day intervals, for as needed until terminal growth ceases. Use the higher label rate under heavy disease pressure, with extended spray intervals, and/or on highly disease susceptible varieties. A maximum of 24 ounces of BAYLETON 50% D.F. may be applied per acre per season. BAYLETON 50% D.F. may be applied up to the day of harvest. Do not graze livestock in treated orchards.
	Powdery mildew			
Pears	Powdery mildew	2 to 8	1/2 to 2	Make the first application at the budburst stage and continue applications at 7 to 14 day intervals, or as needed. Use the higher label rates under heavy disease pressure, with extended spray intervals, and/or on highly disease susceptible varieties. A maximum of 24 ozs. of BAYLETON 50% D.F. may be applied per acre per season. BAYLETON 50% D.F. may be applied up to the day of harvest. Do not graze livestock in treated orchards.

1/ Rates of BAYLETON 50% Dry Flowable are based on a standard of 400 gallons of dilute spray per acre, or the equivalent amount of product per acre in a concentrate spray.

RECOMMENDED APPLICATIONS (Continued)

Crop	Disease	Rate of BAYLETON 50% Dry Flowable	Remarks (Also Refer to Directions for Use)
FRUIT (Cont'd)			GENERAL COMMENTS
Grapes	Powdery mildew	2 to 6 oz/A	Use the higher label rates under heavy disease pressure, with extended spray intervals, and/or on highly disease susceptible varieties. Fields should be observed closely for early disease symptoms when susceptible varieties are planted and/or under prolonged conditions favorable for disease development. A maximum of 18 ounces of BAYLETON 50% D.F. may be applied per acre per crop season. BAYLETON 50% D.F. may be applied up to 14 days before harvest. POWDERY MILDEW: Make the first application pre-bloom and continue applications at 14 to 21 day intervals, or as needed. BLACK ROT: Protective Schedule Make the first application at 10-inch green shoot and continue applications at 7 to 14 day intervals through 5° Brix stage or until veraison (berry coloring) is complete. Under severe disease conditions and/or on highly susceptible varieties, make applications at 7 day intervals. Post-infection Schedule During bloom apply within 72 hours after the beginning of an infection period. Do not make spray applications any closer than 7 day intervals. After bloom, continue applications at rates of 2 to 3 ounces of BAYLETON 50% D.F. at 7 to 14 day intervals, or as needed to maintain control.
	Black rot	Protective Schedule 2 to 3 oz/A Post-infection 3 to 4 oz/A	

RECOMMENDED APPLICATIONS (Cont'd)

Crop	Disease	Rate of BAYLETON 50% Dry Flowable	Remarks (Also Refer to Directions for Use)
FRUITS (Cont'd) Pine-apples (Fresh market only)	Fresh fruit rot (Cerato-cystis paradoxa)	13-1/3 oz.	Post-Harvest Treatment: 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. Limit dipping time to not more than 3 minutes.
Raspberries (Califor-nia Only)	Powdery mildew	4 ounces	Apply specified dosage per acre in not less than 20 gallons of water using ground equipment. Make the first appli-cation when disease symptoms first appear and additional applications at 4 to 6 week intervals thereafter as needed. A maximum of 7 total applications may be made in one year with not more than 2 applications within the same 30-day period. Do not harvest within 1 day of application.
SMALL GRAINS	Powdery mildew	2 to 6 oz/A	Fields should be observed closely for early disease symptoms when susceptible varieties are planted and/or under pro-longed conditions favorable for disease development.
Wheat, Barley	Rusts (stripe, leaf, and stem)	4 to 8 oz/A	Apply specified dosage per acre in a minimum of 10 gallons of water per acre by ground equipment or 5 gallons of water per acre by air when disease symptoms first appear on leaves or stems. Additional applications should be made if new disease symptoms appear. The total amount of BAYLETON 50% D.F. should not exceed 16 oz. per acre per crop season and the last application should not be made within 21 days of harvest. Powdery mildew: In areas having severe powdery mildew infection apply 4 to 6 oz. of BAYLETON 50% D.F. per acre.
	Leaf blotch (Septoria tritici) Barley scald		

(Continued)

RECOMMENDED APPLICATIONS (Cont'd)

Crop	Disease	Rate of BAYLETON 50% Dry Flowable	Remarks (Also Refer to Directions for Use)
SMALL GRAINS (Cont'd)			
Wheat, Barley			Rusts: In areas having severe rust infection apply 6 to 8 oz. of BAYLETON 50% D.F. per acre. Leaf blotch: BAYLETON 50% D.F., applied at first sign of infection, will suppress light to moderate leaf blotch infections. For control of severe leaf blotch infections it is recommended that a registered fungicide with good activity against this disease be tank mixed with BAYLETON. Barley scald: Apply 4 to 8 ozs. of BAYLETON 50% D.F. at the first sign of scald symptoms.
GRASSES GROWN FOR SEED			Apply the specified dosage in 20 gallons of water or more per acre with ground sprayers, or in 7 or more gallons of water per acre with aircraft. Thorough coverage is important for optimum disease control.
Bermudagrass	Rusts (Puccinia spp.)	PREVENTATIVE RATE	
		4 to 8 oz per acre	
Perennial Ryegrass			Disease control may be enhanced by the addition of a wetting agent to spray mixtures of BAYLETON 50% D.F.
Bluegrass		CURATIVE RATE	
		8 to 16 oz per acre	A maximum of 2 lbs. of BAYLETON 50% D.F. may be applied per acre per year. The last application may be made up to 5 days before harvest. Chaff and straw from treated area may be used for feed purposes; however, do not forage or cut green crop or use seed for feed purposes. Regrowth may be grazed 11 weeks after last application. RUSTS Preventative Schedule For optimum disease control, apply specified dosage of BAYLETON 50% D.F. as soon as weather conditions are favorable for rust development. Apply before rust pustules are present, and continue applications at 14 to 21 day intervals depending on disease pressure. (Continued)

RECOMMENDED APPLICATIONS (Cont'd)

Crop	Disease	Rate of BAYLETON 50% Dry Flowable	Remarks (Also Refer to Directions for Use)
GRASSES GROWN FOR SEED (Cont'd) Bermudagrass Perennial Ryegrass Bluegrass			(Continued) RUSTS Curative Schedule Apply the specified dosage if rust pustules are already present. A second application 14 to 21 days later may be necessary. On highly susceptible grass varieties and/or under prolonged conditions favorable for disease development use rates of 12 to 16 oz per acre and a shorter interval between applications. Rust control is especially important during the period from early head emergence through last flowering. Disease control may not be adequate and yield loss may occur if rust infection is allowed to reach 5 percent or greater before treating. BAYLETON 50% D.F. will prevent young, developing pustules from producing spores. However, pustules and other symptoms caused by the rust fungus prior to the application of BAYLETON 50% D.F. will remain visible.
	Powdery mildew	2 to 4 oz per acre	POWDERY MILDEW: One or two applications at the 2 to 4 oz rate applied at the first signs of disease and when new powdery mildew symptoms reappear are generally sufficient for disease control. In cases where severe mildew infections are present, use the higher rate.
Pine (Seedlings) (Except California)	Pine Rust (Fusiform rust)	4 to 16 oz.	Begin application prior to infection period and repeat as necessary at 2 to 3 week intervals depending upon disease pressure. Use lower rates in areas of low disease incidence and higher rates in areas of severe disease incidence. A maximum of 64 ozs of BAYLETON 50% D.F. may be applied per acre per season. A spreader-sticker is needed to help adhere spray solution to the pine trees.

RECOMMENDED APPLICAITONS (Cont'd)

Crop	Disease	Rate of BAYLETON 50% Dry Flowable	Remarks (Also Refer to Directions for Use)
Pine Seed (Nurseries) (Except California)	Fusiform rust (Cronartium quercuum)	20 ounces	Mix specified dosage in 100 gals. of water. Cover seeds with the mixture and soak them, at room temperature (75°F), for 24 hours, stirring occasionally. Seed stratification, if necessary, should be completed before treatment with BAYLETON 50% Dry Flowable Thoroughly air dry all seed before applying any additional treatment or before planting. A spreader sticker may be needed to help adhere BAYLETON to the pine seed. Do not use treated seed for food or feed purposes.
		2 ounces	Apply specified dosage to 50 lbs. of thoroughly wetted pine seeds in a commercial treater or other suitable tumbler apparatus. Allow to mix for at least 10 minutes before applying bird repellent or other seed dressing materials. Thoroughly air dry seed before sowing. Do not use treated seed for food or feed purposes.
Sugar beets	Powdery mildew	BROADCAST 4 to 16 oz/A	GENERAL COMMENTS Apply the specified dosage per acre in a minimum of 10 gallons of water by ground and 5 gallons of water by air. Under severe disease conditions, use of the higher recommended rate may be necessary. Do not apply more than 16 oz. of BAYLETON 50% Dry Flowable per acre per season. BROADCAST APPLICATIONS: Apply specified dosage per acre as a broadcast foliar spray when disease symptoms first appear. To maintain control or if reinfection occurs, additional applications may be made at 10 to 14 day intervals. Broadcast applications may be made up to 15 days before harvest.
		BAND 8 to 16 oz/A	BAND APPLICATIONS: Apply specified dosage per acre as a spray directed into the leaf whorl in a 2-inch band by turning a flat fan spray nozzle sideways to achieve a narrow band. Band applications may be made up to 30 days before harvest.

RECOMMENDED APPLICATIONS (Cont'd)

Crop	Disease	Rate of BAYLETON 50% Dry Flowable	Remarks (Also Refer to Directions for Use)
Cucurbits [Balsam pear (bitter melon), Chinese waxgourd (Chinese preserving melon), citron melon, cucumber, gherkin, gourds, edible melons including hybrids (including cantaloupe, casaba, crenshaw, honeydew melons, honey balls mango melon, muskmelon, Persian melon), pumpkin, squash, summer squash, winter watermelon, including hybrids]	Powdery mildew (Erysiphe cichoracearum)*	2 to 4 oz. per acre	Apply specified dosage per acre in a minimum of 10 gallons of water by ground and 5 gallons of water by air as a foliar spray when disease symptoms first appear. Repeat at 14 day intervals to maintain control if new disease symptoms appear. Under severe disease conditions use the 4 oz. rate. Applications may be made up to day of harvest. A maximum of 16 oz. of BAYLETON 50% D.F. may be applied per acre per season. *BAYLETON 50% D.F. will not give commercially acceptable control of Sphaerotheca fuliginea.

TANK MIXES

The following tank mix recommendations are made for the improved control of specific diseases. Before mixing BAYLETON 50% Dry Flowable with any other fungicide, read and carefully observe the precautionary statements, directions for use, and other information appearing on the EPA registered product labels. The rates given below for Dithane M-45 fungicide are for the 80% wettable powder formulation.

CROP	Co-Applied Fungicide and RATE	For Improved Control of:	BAYLETON 50% D.F. Rate
Apples	Dithane M-45® @ 1 to 2 lbs/100 gals.	Bitter rot Black rot Brown rot Fly speck Scab Sooty blotch	1/2 to 2 oz/100 gals.
Barley	Refer to wheat		
Cantaloupe	Refer to melons		
Cucumbers	Refer to melons		
Grapes	Dithane M-45 @ 1 1/2 to 4 lbs/A	Bunch rot Deadarm Downy mildew	2 to 6 oz/A
Melons	Dithane M-45 @ 2 to 3 lbs/A	Alternaria leaf spot Anthracnose Cerospora leaf spot Downy mildew Gummy stem blight Scab	2 to 4 oz/A
Pears (Except California)	Refer to apples		
Pumpkins	Refer to melons		
Squash, summer	Refer to melons		
Sugar beets	Dithane M-45 @ 1 1/2 to 2 lbs/A	Cercospora leaf spot	4 to 16 oz/A
Watermelons	Refer to melons		

CROP	Co-Applied Fungicide and RATE	For Improved Control of:	BAYLETON 50% D.F. Rate
Wheat	Dithane M-45 @ 2 lbs/A	Helmintho-sporium leaf spots Septoria leaf spots (leaf blotch) Septoria glume blotch Tan spot	2 to 8 oz/A

ROTATIONAL CROPS

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. Root crops may be planted 120 days after the last application but tops must not be used for food or feed. All crops may be planted 12 months or later after the last application of BAYLETON without any restrictions.

RE-ENTRY STATEMENTS

Do not apply this product in such a manner as to directly or through drift expose workers or other persons. The area being treated must be vacated by unprotected persons. Do not enter treated areas without protective clothing until sprays have dried. Because certain states may require more restrictive reentry intervals for various crops treated with this product, consult your State Department of Agriculture for further information.

(The following may appear on supplemental labeling accompanying the product)
Written or oral warnings must be given to workers who are expected to be in a treated area or in an area about to be treated with this product. Oral warnings should include those statements found under the label heading "Precautionary Statements" and "Re-entry Statements" included on this label. When oral warnings are given, warnings shall be given in a language customarily understood by workers. Oral warnings must be given if there is reason to believe that written warnings cannot be understood by workers. Written warnings must include the following information: WARNING, area treated with BAYLETON 50% Dry Flowable on (date of application). Do not enter without appropriate protective clothing until sprays have dried. If on skin, remove contaminated clothing and wash skin immediately with soap and warm water. If eyes are contaminated, wash with flowing water for at least 15 minutes. If swallowed, vomiting should be induced. (See Precautionary Statements on label).

STORAGE AND DISPOSAL

Pesticide Disposal: Do not contaminate water, food or feed by storage or disposal.

Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Disposal: Completely empty carton into application equipment. Then dispose of empty carton in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area.

Handle and open container in a manner as to prevent spillage. If the container is leaking or material spilled for any reason or cause, carefully sweep material into a pile. Refer to Precautionary Statements on label for hazards associated with the handling of this material. Do not walk through spilled material. Dispose of pesticide as directed above. In spill or leak incidents, keep unauthorized people away. You may contact the Mobay Emergency Response Team for decontamination procedures or any other assistance that may be necessary. The Mobay Kansas City Emergency Response Telephone No. is 816-242-2582, or contact Chemtrec at 800-424-9300.

DITHANE M-45 is a Reg. TM of Rohm and Haas Co.

BAYLETON is a Reg. TM of Bayer AG, Germany.

BAYLETON®

50% DRY FLOWABLE FUNGICIDE

FOR CONTROL OF SPECIFIED DISEASES ON CERTAIN FIELD, FRUIT AND VEGETABLE CROPS

ACTIVE INGREDIENT:
1-(4-Chlorophenoxy)-3,3-dimethyl-1-(1*H*
-1,2,4- triazol-1-yl)-2-butanone 50%
INERT INGREDIENTS: 50%

TOTAL 100%

EPA Reg. No. 3125-320 U.S. Patent No. 3,912,752

BAYLETON is a Reg. TM of Bayer AG, Germany
Dithane M-45 is a Reg. TM of Rohm and Haas Company

RECOMMENDED USES

Almonds, Apples, Cucurbits, Grapes, Pears, Pineapple, Raspberries, Wheat, Barley, Pine Seedlings, Pine Seed Nurseries, Sugar Beets, and Grasses grown for seed

RESTRICTIONS ON WAREHOUSE STORAGE

Protect from rain and moisture. Store in a cool, dry place. Do not store next to herbicides. Do not store near feed or food products.

PACKAGING

2 lb. carton, 12 per case. Shipping weight 29 lbs.

BAYLETON 50% Dry Flowable is a unique fungicide which has the ability to control, as well as prevent, certain important fungus diseases, including rusts, powdery mildew and black rot in wheat, barley, grapes, apples, pineapples, pears, pine seedlings, and grasses grown for seed.

BAYLETON 50% Dry Flowable is absorbed rapidly and works systemically from within the plant.

BAYLETON 50% Dry Flowable mixes readily with water to form a suspension that can be used in all convenient hand- and machine- operated sprayers.

AVISO

PRECAUCION AL USUARIO: Si usted no puede leer o entender inglés, no use este producto hasta que la etiqueta le haya sido explicada ampliamente.

(TO THE USER: If you cannot read or understand English, do not use this product until the label has been fully explained to you.)

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

MIXING

Add the recommended amount of BAYLETON 50% Dry Flowable to the spray tank while filling with water to the desired level. Operate agitator while mixing. If other materials are added to the spray tank, BAYLETON 50% Dry Flowable should be thoroughly dispersed before the addition of other materials.

COMPATIBILITY

BAYLETON fungicide is physically compatible with many registered insecticides, miticides, and fungicides. To determine the compatibility of BAYLETON fungicide with other products, the following procedure should be followed: Pour the recommended proportions of the products into a suitable container of water, mix thoroughly and allow to stand at least five (5) minutes. If the combination remains mixed or can be remixed readily, the mixture is considered physically compatible. For further information contact your local Mobay representative.

NOTE TO USER

For worker protection during mixing, loading, and during application wear a hat, long sleeve shirt, and long legged trousers or overalls. For protection, during mixing and loading, wear rubber or neoprene gloves and a dust mask. Protective clothing should be laundered separately before application.

RECOMMENDED APPLICATIONS

BAYLETON 50% Dry Flowable may be applied in a minimum of 50 gallons of spray solution per acre by ground or in a minimum of 5 gallons spray solution per acre by aircraft spray equipment except as noted in "Remarks" for each crop. Check equipment calibration frequently. Complete coverage and uniform application are essential for the most effective results, especially when lower spray volumes are applied. If necessary, increase the spray volume per acre for complete crop coverage.

Do not apply this product through any type of irrigation system.

Consult your State Agricultural Experiment Station or Extension Specialist or Mobay representative for guidance on the selection of the dosage rates and timing of applications appropriate for your specific pest and disease. State regulations may contain additional restrictions or requirements. Check the Remarks and Restrictions sections of the label for additional directions.

CROP	DISEASE	RATE OF BAYLETON 50% DRY FLOWABLE oz./A	RATE OF BAYLETON 50% DRY FLOWABLE oz./100 gal[1]	REMARKS (ALSO REFER TO DIRECTIONS FOR USE)
FRUITS Apples	Cedar apple rust Powdery mildew	2 to 8	½ to 2	Make the first application at the green-up stage and continue applications at 7 day intervals, or as needed until terminal growth ceases. Use the higher label rate under heavy disease pressure, with extended spray intervals, and/or on highly disease susceptible varieties. A maximum of 24 ounces of BAYLETON 50% DF may be applied per acre per season. BAYLETON 50% DF may be applied up to the day of harvest. Do not graze livestock in treated orchards.
Pears	Powdery mildew	2 to 8	½ to 2	Make the first application at the budburst stage and continue applications at 7 day intervals, or as needed. Use the higher label rates under heavy disease pressure, with extended spray intervals, and/or on highly disease susceptible varieties. A maximum of 24 ounces of BAYLETON 50% DF may be applied per acre per season. BAYLETON 50% DF may be applied up to the day of harvest. Do not graze livestock in treated orchards.
Grapes	Powdery mildew	2 to 6 ozs./A		GENERAL COMMENTS Use the higher label rates under heavy disease pressure, with extended spray intervals and/or on highly disease susceptible varieties. Fields should be observed closely for early disease symptoms when susceptible varieties are planted and/or under prolonged conditions favorable for disease development. A maximum of 18 ounces of BAYLETON 50% DF may be applied per acre per season. BAYLETON 50% DF may be applied up to 14 days before harvest. POWDERY MILDEW: Make the first application pre-bloom and continue applications at 14 to 21 day intervals, or as needed. BLACK ROT: Protective Schedule Make the first application at 10-inch green shoot and continue applications at 7 day intervals through 5° Brix stage or until veraison (berry coloring) is complete. Under severe disease conditions and/or on highly susceptible varieties, make applications 5 day intervals. Post-infection Schedule During bloom apply within 72 hours after the beginning of an infection period. Do not make spray applications any closer than 7 day intervals. After bloom, continue applications at rates of 2 to 3 ounces of BAYLETON 50% DF at 7 to 14 day intervals or as needed to maintain control.
	Black rot	Protective Schedule 2 to 3 ozs./A Post-infection 3 to 4 ozs./A		

CROP	DISEASE	RATE OF BAYLETON 50% DRY FLOWABLE	REMARKS (ALSO REFER TO DIRECTIONS FOR USE)
ine- apples (Fresh market only)	Fresh fruit rot *(Ceratocystis paradoxa)*	13⅓ oz.	**Post-Harvest Treatment:** 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. Limit dipping time to not more than 3 minutes.
asperries (California Only)	Powdery mildew	4 ounces	Apply specified dosage per acre in not less than 20 gallons of water using ground equipment. Make the first application when disease symptoms first appear and additional applications at 4 to 6 week intervals thereafter as needed. A maximum of 7 total applications may be made in one year with not more than 2 applications within the same 30-day period. Do not harvest within 1 day of application.
UTS lmonds	Blossom blight	oz./A: 24 to 32; oz./100 gal.[1]: 6 to 8	Make applications at pink bud and full bloom in aerial or ground equipment. Concentrate sprays may be applied provided the amount of BAYLETON 50% DF applied per acre is the same as that which would be applied per acre in a full coverage spray. Do not apply more than 64 ozs. (4 lbs.) of BAYLETON 50% DF per acre per crop season. The last application can be made up to full bloom.
MALL RAINS heat, rley	Powdery mildew	2 to 6 oz./A	Fields should be observed closely for early disease symptoms when susceptible varieties are planted and/or under prolonged conditions favorable for disease development. Apply specified dosage per acre in a minimum of 10 gallons of water per acre by ground equipment or 5 gallons of water per acre by air when disease symptoms first appear on leaves or stems. Additional applications should be made if new disease symptoms appear. The total amount of BAYLETON 50% DF should not exceed 16 ozs. per acre per crop season and the last application should not be made within 21 days of harvest. **Powdery mildew:** In areas having severe powdery mildew infection apply 4 to 6 ozs. of BAYLETON 50% DF per acre. **Rusts:** In areas having severe rust infection apply 6 to 8 ozs. of BAYLETON 50% DF per acre. **Leaf blotch:** BAYLETON 50% DF, applied at first sign of infection, will suppress light to moderate leaf blotch infections. For control of severe leaf blotch infections it is recommended that a registered fungicide with good activity against this disease be tank mixed with BAYLETON. **Barley scald:** Apply 4 to 8 ozs. of BAYLETON 50% DF at the first sign of scald symptoms.
	Rusts (stripe, leaf, and stem) Leaf blotch *(Septoria tritici)* Barley Scald	4 to 8 oz./A	
ASSES OWN FOR D edagrass nial grass grass	Rusts *(Puccinia* spp.)	**PREVENTATIVE RATE** 4 to 8 ozs. per acre **CURATIVE RATE** 8 to 16 ozs. per acre	Apply specified dosage in 20 gallons of water or more per acre with ground sprayers, or in 7 or more gallons of water per acre with aircraft. Thorough coverage is important for optimum disease control. Disease control may be enhanced by the addition of a wetting agent to spray mixtures of BAYLETON 50% DF. A maximum of 2 lbs. of BAYLETON 50% DF may be applied per acre per year. The last application may be made up to 5 days before harvest. Chaff and straw from treated area may be used for feed purposes; however, do not forage or cut green crop or use seed for feed purposes. Regrowth may be grazed 11 weeks after last application. **RUSTS** **Preventative Schedule** For optimum disease control, apply specified dosage of BAYLETON 50% DF as soon as weather conditions are favorable for rust development. Apply before rust pustules are present, and continue applications at 14 to 21 day intervals depending on disease pressure. **Curative Schedule** Apply the specified dosage if rust pustules are already present. A second application 14 to 21 days later may be necessary. On highly susceptible grass varieties and/or under prolonged conditions favorable for disease development use rates of 12 to 16 ozs. per acre and a shorter interval between applications. Rust control is especially important during the period from early head emergence through last flowering. Disease control may not be adequate and yield loss may occur if rust infection is allowed to reach 5 percent or greater before treating. BAYLETON 50% DF will prevent young, developing pustules from producing spores. However, pustules and other symptoms caused by the rust fungus prior to the application of BAYLETON 50% DF will remain visible.
	Powdery mildew	2 to 4 ozs. per acre	**POWDERY MILDEW:** One or two applications at the 2 to 4 ozs. rate applied at the first signs of disease and when new powdery mildew symptoms reappear are generally sufficient for disease control. In cases where severe mildew infections are present, use the higher rate.
dlings) cept lifornia)	Pine rust (Fusiform rust)	4 to 16 ozs.	Begin application prior to infection period and repeat as necessary at 2 to 3 week intervals depending upon disease pressure. Use lower rates in areas of low disease incidence and higher rates in areas of severe disease incidence. A maximum of 64 ozs. of BAYLETON 50% DF may be applied per acre per season. A spreader-sticker is needed to help adhere spray solution to the pine trees.
lled neries) cept lifornia)	Fusiform rust *(Cronartium quercuum)*	20 ounces	Mix specified dosage in 100 gals. of water. Cover seeds with the mixture and soak them, at room temperature (75°F), for 24 hours, stirring occasionally. Seed stratification, if necessary, should be completed before treatment with BAYLETON 50% Dry Flowable. Thoroughly air dry all seed before applying any additional treatment or before planting. A spreader sticker may be needed to help adhere BAYLETON to the pine seed. Do not use treated seed for food or feed purposes.
		2 ounces	Apply specified dosage to 50 lbs. of thoroughly wetted pine seeds in a commercial treater or other suitable tumbler apparatus. Allow to mix for at least 10 minutes before applying bird repellent or other seed dressing materials. Thoroughly air dry seed before sowing. Do not use treated seed for food or feed purposes.

CROP	DISEASE	RATE OF BAYLETON 50% DRY FLOWABLE	REMARKS (ALSO REFER TO DIRECTIONS FOR USE)
Sugar beets	Powdery mildew	BROADCAST 4 to 16 ozs./A. BAND 8 to 16 ozs./A	GENERAL COMMENTS Apply the specified dosage per acre in a minimum of 10 gallons of water by ground 5 gallons of water by air. Under severe disease conditions, use of the higher recommended rate may be neces Do not apply more than 16 ozs. of BAYLETON 50% Dry Flowable per acre per s BROADCAST APPLICATIONS: Apply specified dosage per acre as a broadcast foliar spray when disease symptoms appear. To maintain control or if reinfection occurs, additional applications may b made at 10 to 14 day intervals. Broadcast applications may be made up to 15 days before harvest. BAND APPLICATIONS: Apply specified dosage per acre as a spray directed into the leaf whorl in a 2-inch by turning a flat fan spray nozzle sideways to achieve a narrow band. Band applications may be made up to 30 days before harvest.
Cucurbits [Balsam pear (bitter melon), Chinese waxgourd (Chinese preserving melon), citron melon, cucumber, gherkin, gourds, edible melons including hybrids (including cantaloupe, casaba, crenshaw, honeydew melons, honey balls mango melon, muskmelon, Persian melon), pumpkin, squash, summer squash, winter watermelon, including hybrids]	Powdery mildew (*Erysiphe cichoracearum*)*	2 to 4 ozs. per acre	Apply specified dosage per acre in a minimum of 10 gallons of water by ground a gallons of water by air as a foliar spray when disease symptoms first appear. Repe 14 day intervals to maintain control if new disease symptoms appear. Under sever disease conditions use the 4 oz. rate. Applications may be made up to day of harv maximum of 16 ozs. of BAYLETON 50% DF may be applied per acre per season. *BAYLETON 50% DF will not give commercially acceptable control of *Sphaerot fuliginea*.

[1] Rates of BAYLETON 50% Dry Flowable are based on a standard of 400 gallons of dilute spray per acre, or the equivalent amount of product per acre in a conce spray.

TANK MIXES: The following tank mix recommendations are made for the improved control of specific diseases. Before mixing BAYLETON 50% Dry Flowable with any other fungicide, read and carefully observe the precautionary statements, directions for use, and other informatio ing on the EPA registered product labels. The rates given belo thane M-45 fungicide are for the 80% wettable powder formulatio

CROP	CO-APPLIED FUNGICIDES AND RATE	FOR IMPROVED CONTROL OF:		BAYLETON 50% DF RATE
Apples	Dithane® M-45● 1 to 2 lbs.100 gals.	Bitter rot Black rot Brown rot	Fly speck Scab Sooty blotch	½ to 2 ozs./100 gals.
Barley	Refer to wheat			
Cantaloupe Cucumbers	Refer to melons Refer to melons			
Grapes	Dithane M-45 ● 1½ to 4 lbs./A	Bunch rot	Deadarm Downy mildew	2 to 6 ozs./A.
Melons	Dithane M-45 ● 2 to 3 lbs./A	Alternaria leaf spot Anthracnose Cercospora leaf spot Downy mildew	Gummy stem blight Scab	2 to 4 ozs./A.
Pears (Except California)	Refer to apples			
Pumpkins	Refer to melons			
Squash, summer	Refer to melons			
Sugar beets	Dithane M-45● 1½ to 2 lbs./A.	Cercospora leaf spot		4 to 16 ozs./A.

Watermelons	Refer to melons			
Wheat	Dithane M-45 ® 2 lbs./A.	Helminthosporium leaf spots	Septoria glume blotch	2 to 8 ozs./A.
		Septoria leaf spots (leaf blotch)	Tan spot	

OTATIONAL CROPS

all grains, corn, sorghum, soybeans, beans, peas, and cucurbits may be anted 35 days after the last application of BAYLETON fungicide, how- r forage or vines from these crops may not be used for food or feed. oot crops may be planted 120 days after the last application but tops st not be used for food or feed. All crops may be planted 12 months or r after the last application of BAYLETON without any restrictions.

E-ENTRY STATEMENTS

o not apply this product in such a manner as to directly or through drift pose workers or other persons. The area being treated must be vacated unprotected persons. Do not enter treated areas without protective thing until sprays have dried. Because certain states may require more trictive re-entry intervals for various crops treated with this product, sult your State Department of Agriculture for further information.

ritten or oral warnings must be given to workers who are expected to be a treated area or in an area about to be treated with this product. Oral rnings should include those statements found under the label heading recautionary Statements" and "Re-entry Statements" included on the el. When oral warnings are given, warnings shall be given in a language tomarily understood by workers. Oral warnings must be given if there reason to believe that written warnings cannot be understood by work- . Written warnings must include the following information: WARN- G, area treated with BAYLETON 50% Dry Flowable on (date of appli- ion). Do not enter without appropriate protective clothing until sprays e dried. If on skin, remove contaminated clothing and wash skin imme- ely with soap and warm water. If eyes are contaminated, wash with ing water for at least 15 minutes. If swallowed, vomiting should be iced. (See Precautionary Statements on label).

ECAUTIONARY STATEMENTS

ZARDS TO HUMANS AND DOMESTIC ANIMALS

ARNING

mful if swallowed, inhaled, or absorbed through the skin. Causes eye ation. Do not breathe dust or allow to get in eyes, on skin, or on cloth-

sh hands, arms and face thoroughly with soap and warm water after and before eating or smoking. Wash all contaminated clothing with and hot water before reuse. Do not contaminate feed or food items. p out of reach of children.

ATEMENT OF PRACTICAL TREATMENT

wallowed, vomiting should be induced. Administer water freely and ce vomiting by giving one dose (½ oz. of 15 ml.) of syrup of ipecac. If iting does not occur within 10 to 20 minutes, administer second dose. yrup of ipecac is not available, induce vomiting by sticking finger down at. Repeat until vomit fluid is clear. Never give anything by mouth to nconscious person. Professional medical assistance should be secured diately.

n skin, wash skin immediately with soap and water.

yes are contaminated, wash with plenty of water for at least 15 min- Get medical attention.

haled, remove to fresh air. If not breathing, give artificial respiration, erably mouth to mouth. Get medical attention.

MPTOMS OF POISONING: The compound does not cause any defi- symptoms that would be diagnostic. Poisoning is accompanied by ractivity followed by sedation.

OTE TO PHYSICIAN: No specific antidote. Treat symptomatically.

VIRONMENTAL HAZARDS

o not use on other crops grown for food or forage. Keep out of lakes, ms, and ponds. Do not contaminate water by cleaning of equipment sposal of wastes. Apply this product only as specified on the label.

ot make applications when weather conditions favor drift from target s.

ORAGE AND DISPOSAL

icide Disposal: Do not contaminate water, food or feed by storage or sal. Wastes resulting from the use of this product may be disposed of ite or at an approved waste disposal facility.

Container Disposal: Completely empty carton into application equipment. Then dispose of empty carton in a sanitary landfill or by incineration, or if allowed by State and local authorities, by burning. If burned, stay out of smoke.

Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area.

Handle and open container in a manner as to prevent spillage. If the container is leaking or material spilled for any reason or cause, carefully sweep material into a pile. Refer to Precautionary Statements on label for hazards associated with the handling of this material. Do not walk through spilled material. Dispose of pesticide as directed above. In spill or leak incidents, keep unauthorized people away. You may contact the Mobay Emergency Response Team for decontamination procedure or any other assistance that may be necessary. The Mobay Kansas City Emergency Response Telephone No. is 816-242-2582, or contact Chemtrec at 800-424-9300.

IMPORTANT:

This bulletin is not intended to provide adequate information for application. Before using any product, read and carefully observe directions, cautionary statements and other information appearing on the product label. This product is sold subject to the Conditions of Sale set forth on the container label.

READ THE LABEL BEFORE USE

BN 8903

This is a specimen label. Mobay is not responsible for the accuracy of the information contained herein. As labels are subject to revision, always carefully read and follow the label on the product container.

BAYTHROID® 2

EMULSIFIABLE PYRETHROID INSECTICIDE

RESTRICTED USE PESTICIDE

Toxic to Fish and Aquatic Organisms

For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification.

Not for sale or distribution after March 31, 1990.
Not for use after July 31, 1990.

FOR CONTROL OF INSECT PESTS ON COTTON

ACTIVE INGREDIENT:	
Cyano(4-fluoro-3-phenoxyphenyl)methyl 3-(2,2-dichloroethenyl)-2,2-dimethylcyclopropanecarboxylate	25%
INERT INGREDIENTS:	75%
TOTAL	100%

Contains 2 pounds Cyano(4-fluoro-3-phenoxyphenyl) methyl 3-(2,2-dichloroethenyl)-2,2-dimethylcyclopropanecarboxylate per gallon.

EPA Reg. No. 3125-351 EPA Est. 3125-MO-1
U.S. Patent No. 4,218,469

BAYTHROID insecticide is a third-generation synthetic pyrethroid that represents new chemistry to the cotton pyrethroid market. It offers quick knock-down and longer residual control of both boll weevils and Heliothis species at low rates. It also controls lygus, pink bollworms, armyworms, cotton leaf perforators and loopers.

BAYTHROID is a Reg. TM of Bayer AG, Germany.

RECOMMENDED USES

Cotton.

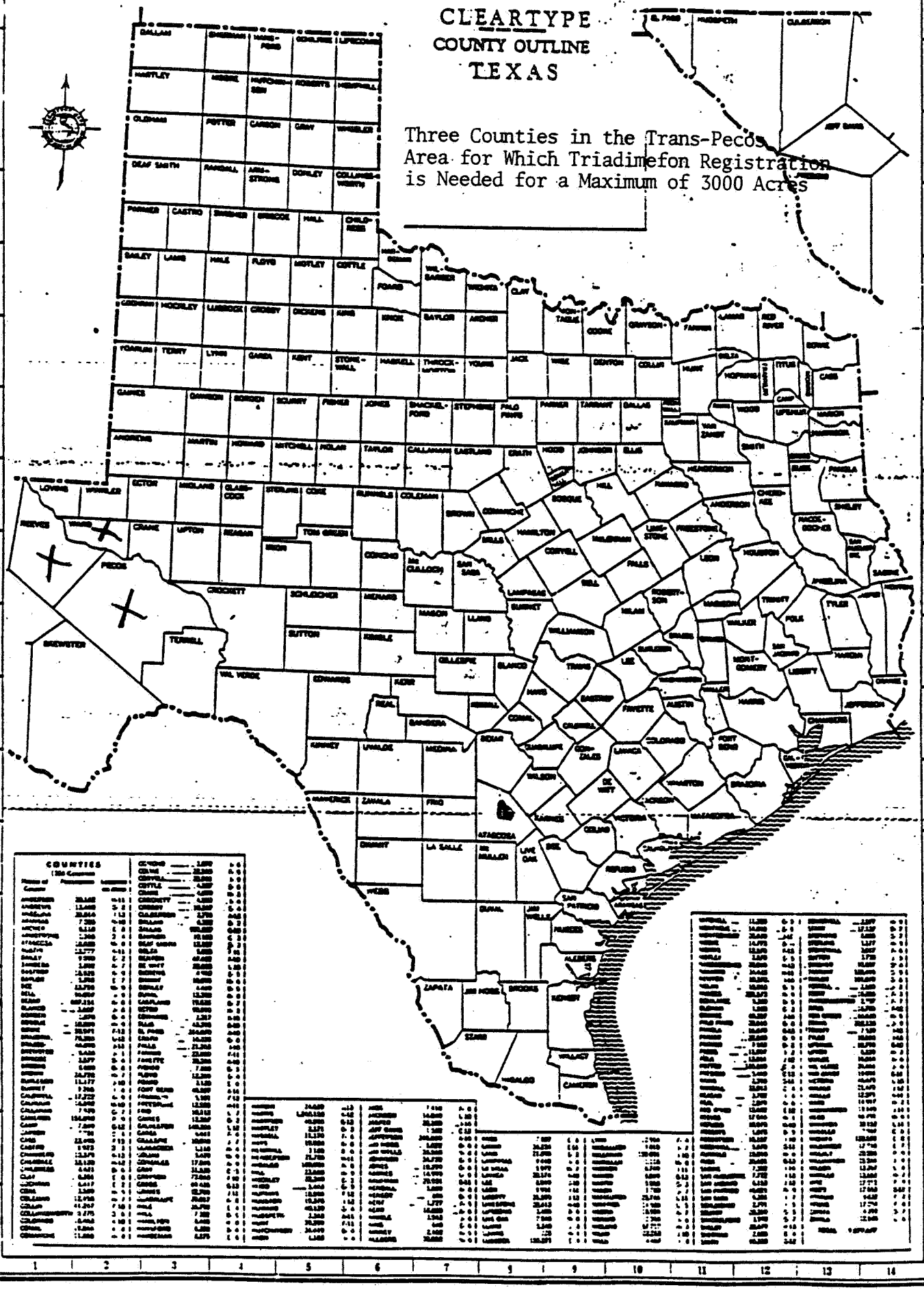
RESTRICTIONS ON WAREHOUSE STORAGE

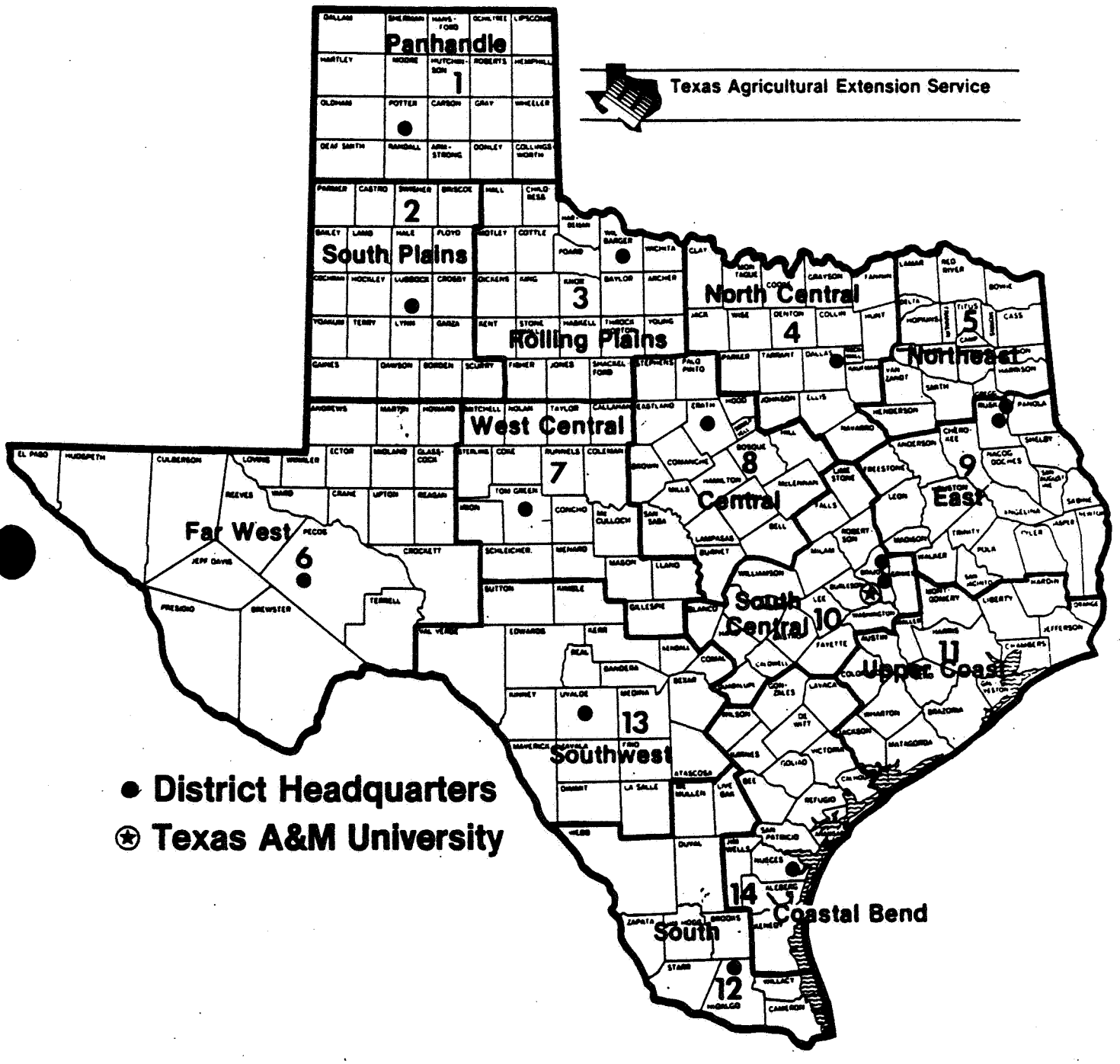
Store in a cool, dry place and away from open flame and extreme heat. Store in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area.

See Amendment w/ additional counties

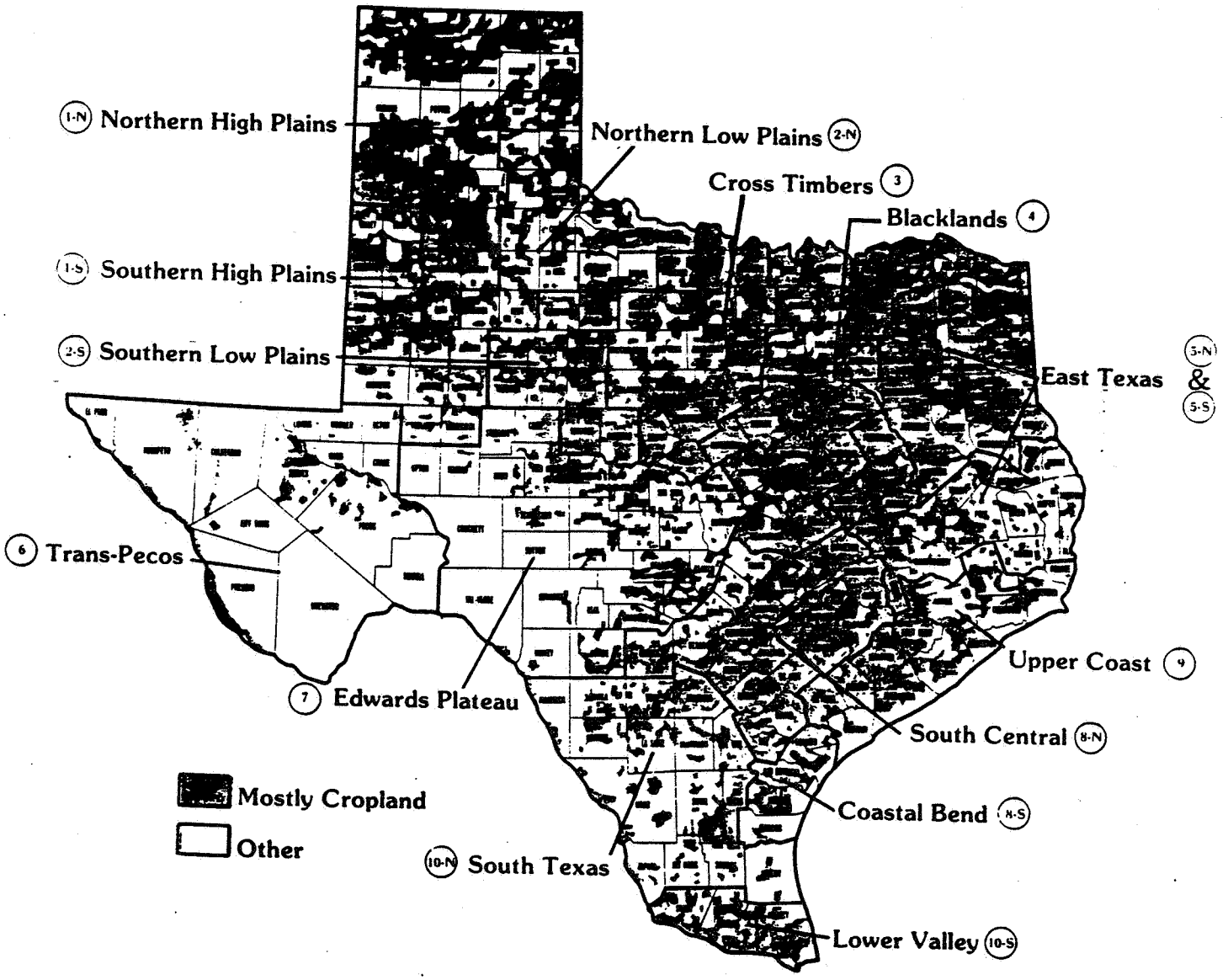
CLEARTYPE
COUNTY OUTLINE
TEXAS

Three Counties in the Trans-Pecos Area for Which Triadimefon Registration is Needed for a Maximum of 3000 Acres




Texas Agricultural Extension Service
Panhandle
1
2
South Plains
3
Rolling Plains
North Central
4
5
Northeast
West Central
7
8
Central
9
East
Far West
6
South Central
10
11
Upper Coast
13
Southwest
14
Coastal Bend
South
12
• District Headquarters
⊛ Texas A&M University

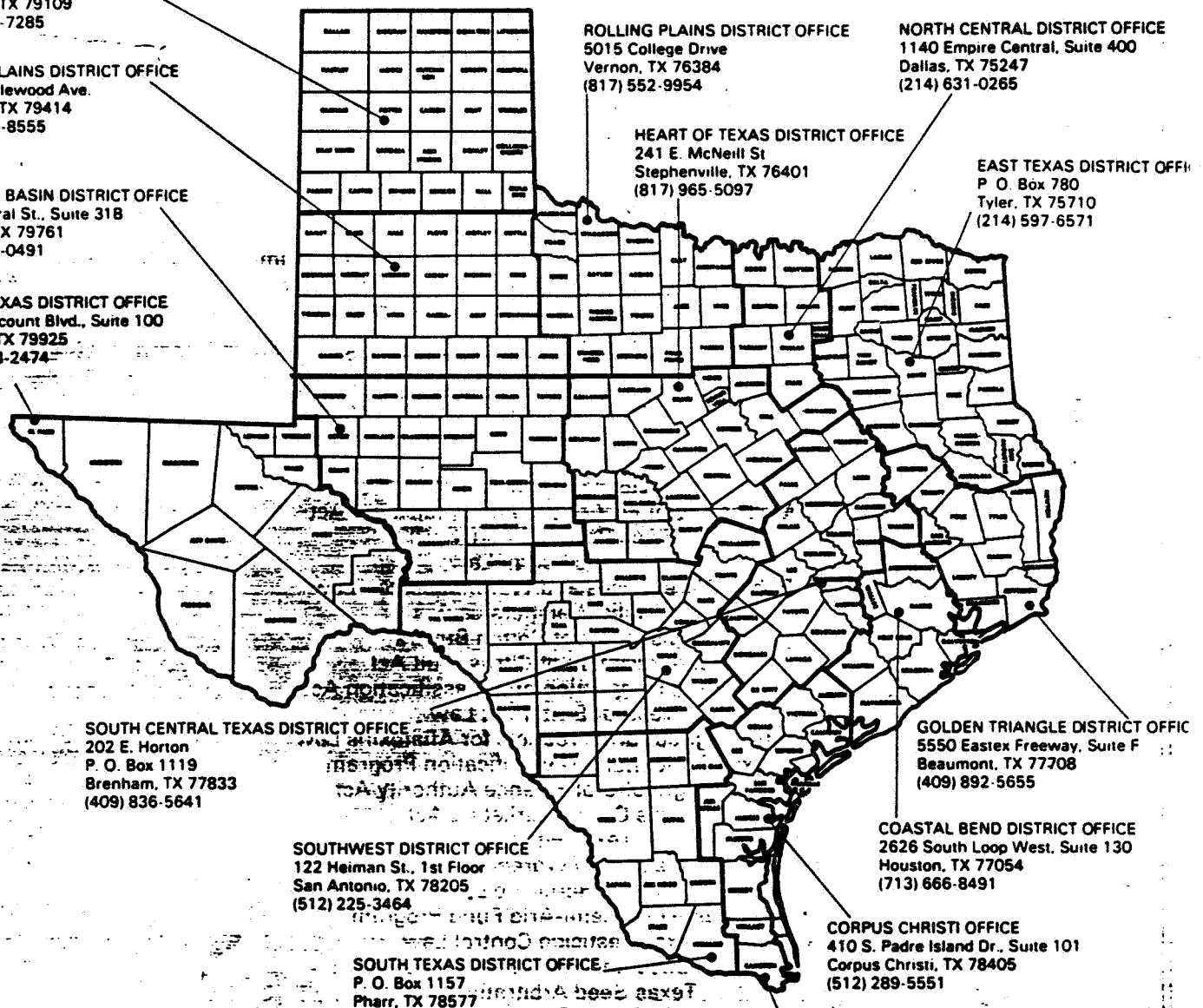
Texas Crop Reporting Districts



Texas Department of Agriculture Districts

For information write or call your district office or TDA headquarters.

Texas Department of Agriculture
P. O. Box 12847
Austin, Texas 78711, (512) 463-7476



PANHANDLE DISTRICT OFFICE
5408A South Bell St., Suite 150
Amarillo, TX 79109
(806) 358-7285

SOUTH PLAINS DISTRICT OFFICE
4502 Englewood Ave.
Lubbock, TX 79414
(806) 799-8555

PERMIAN BASIN DISTRICT OFFICE
855 Central St., Suite 318
Odessa, TX 79761
(915) 337-0491

WEST TEXAS DISTRICT OFFICE
9440 Viscount Blvd., Suite 100
El Paso, TX 79925
(915) 598-2474

ROLLING PLAINS DISTRICT OFFICE
5015 College Drive
Vernon, TX 76384
(817) 552-9954

HEART OF TEXAS DISTRICT OFFICE
241 E. McNeill St
Stephenville, TX 76401
(817) 965-5097

NORTH CENTRAL DISTRICT OFFICE
1140 Empire Central, Suite 400
Dallas, TX 75247
(214) 631-0265

EAST TEXAS DISTRICT OFFI
P O. Box 780
Tyler, TX 75710
(214) 597-6571

SOUTH CENTRAL TEXAS DISTRICT OFFICE
202 E. Horton
P. O. Box 1119
Brenham, TX 77833
(409) 836-5641

SOUTHWEST DISTRICT OFFICE
122 Heiman St., 1st Floor
San Antonio, TX 78205
(512) 225-3464

SOUTH TEXAS DISTRICT OFFICE
P. O. Box 1157
Pharr, TX 78577
(512) 787-8866

GULF COAST DISTRICT OFFICE
Boca Chica Tower
2100 Boca Chica Blvd., Suite 100
Brownsville, TX 78520
(512) 546-6621

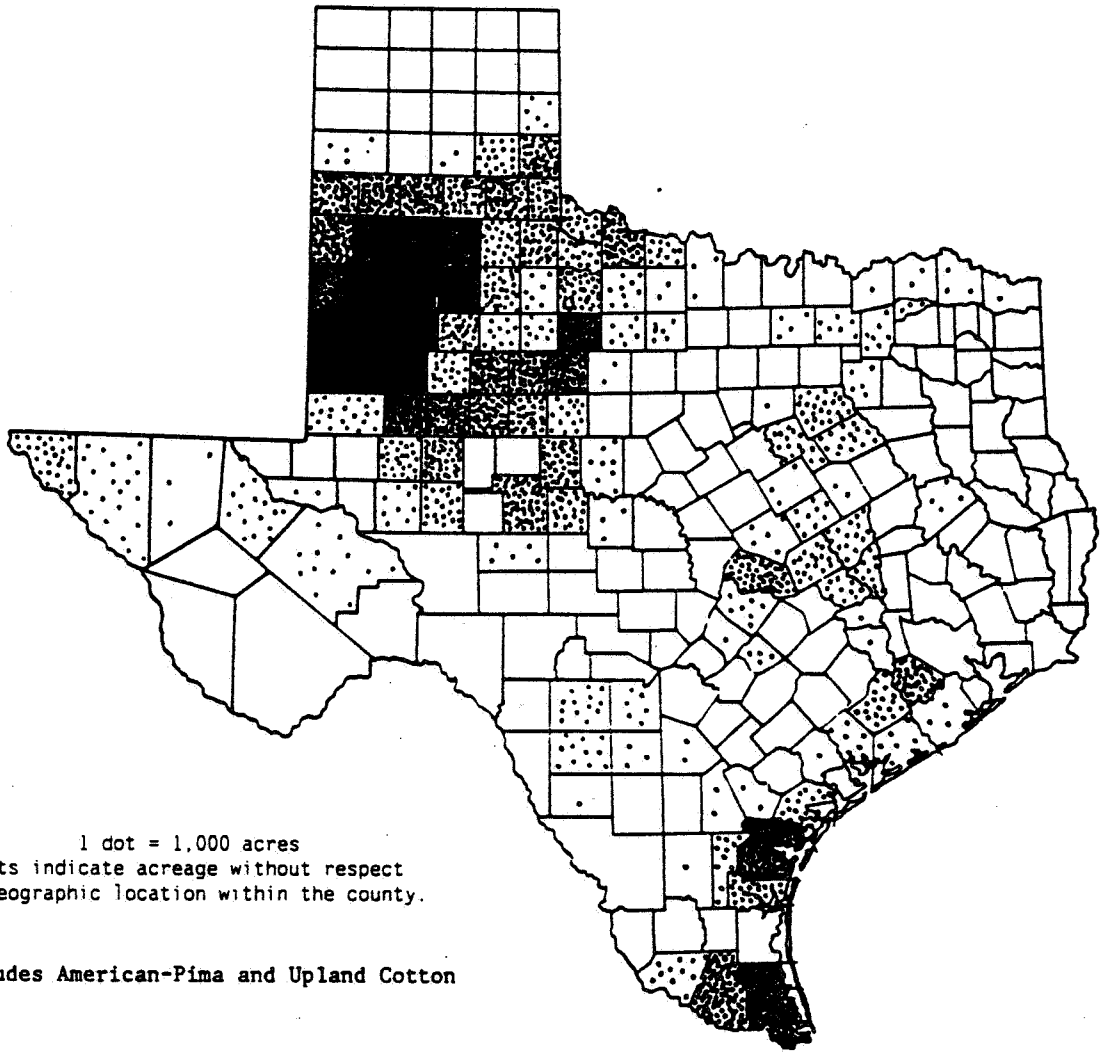
GOLDEN TRIANGLE DISTRICT OFFIC
5550 Eastex Freeway, Suite F
Beaumont, TX 77708
(409) 892-5655

COASTAL BEND DISTRICT OFFICE
2626 South Loop West, Suite 130
Houston, TX 77054
(713) 666-8491

CORPUS CHRISTI OFFICE
410 S. Padre Island Dr., Suite 101
Corpus Christi, TX 78405
(512) 289-5551

RICK PERRY, Commissioner

COTTON *
ACRES PLANTED
1989



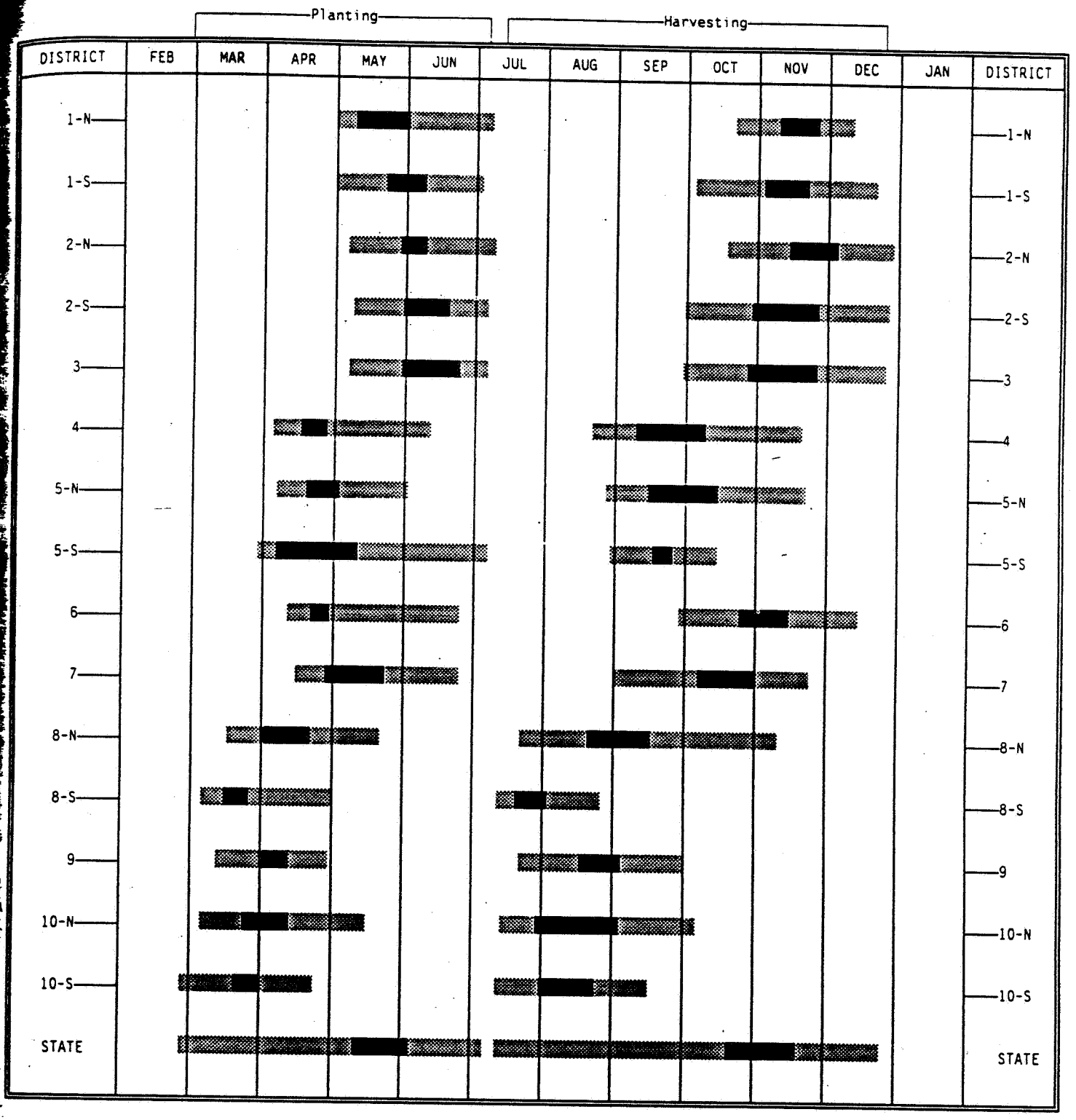
1 dot = 1,000 acres
Dots indicate acreage without respect to geographic location within the county.

* Includes American-Pima and Upland Cotton

LEADING COUNTIES IN COTTON PRODUCTION

Rank	County	1989 Production	Percent of state	Rank	County	1989 Production	Percent of state
	American-Pima Cotton	Bales			Upland Cotton	Bales	
1	El Paso	53,200	41.2	1	Gaines	259,000	9.0
2	Hudspeth	26,300	20.4	2	Lubbock	185,000	6.5
3	Uvalde	12,600	9.8	3	Lynn	125,000	4.4
4	Medina	8,000	6.2	4	Hockley	121,000	4.2
4	Reeves	8,000	6.2	4	Terry	121,000	4.2
6	Pecos	6,500	5.0	6	Crosby	118,200	4.1
7	Zavala	4,400	3.4	7	Lamb	118,000	4.1
8	Ward	1,730	1.3	8	Dawson	111,000	3.9
				9	Floyd	76,300	2.7
				10	Hidalgo	75,000	2.6

COTTON: PLANTING AND HARVESTING ACTIVITY
BY CROP REPORTING DISTRICT, 1989



Period of planting or harvesting activity.

Begins when 25 percent of the activity is completed and ends when 75 percent of the activity is completed.