Shaughnessy No: 122010

Date Out of EFGWB: JUN 22 1990

TO: Becky Cool/Tompkins
Product Manager #41
Registration Division (H7505C)

FROM: Emil Regelman, Supervisory Chemist
Environmental Chemistry Review Section #2
Environmental Fate and Ground Water Branch, EFED (H7507C)

THRU: Henry M. Jacoby, Chief
Environmental Fate and Ground Water Branch/EFED (H7507C)

Attached, please find the EFGWB review of:

Reg./File #: 90-TX-14

Common Name: Metsulfuron Methyl

Chemical Name: Methyl 2-[[[[(4-methoxy-6-methyl-1,3,5-triazin-2-yl-)-amino]carbonyl]amino]sulfonyl] benzoate

Type product: Herbicide

Product Name: ALLY

Company Name: E.I. Du Pont de Nemours and Company

Purpose: Emergency Exemption- State of Texas: Pre-harvest use on winter wheat (The High Plains, the Rolling Plains and the Blackland Prairies). Comment on ground water concerns.

Date Received: 5/30/90 EFGWB #: 90-0600

Action Code: 510 Total Reviewing Time (decimal days): 1.5

Deferrals to: X Ecological Effects Branch, EFED

_____ Science Integration & Policy Staff, EFED

_____ Non-Dietary Exposure Branch, HED

_____ Dietary Exposure Branch, HED

_____ Toxicology Branch I , HED

_____ Toxicology Branch II, HED

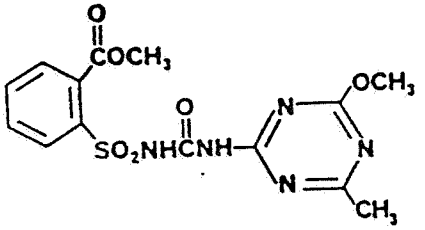
1. CHEMICAL:

Common name: Metsulfuron methyl

Chemical name: Methyl 2-[[[[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)-amino]carbonyl]amino]sulfonyl] benzoate

Trade name: ALLY (uses in small grains)

Structure:



Physical/Chemical Properties (of active ingredient):

Molecular weight: 381.40
Physical state: white-to-pale yellow solid (technical grade)
Odor: Faint, sweet ester-like (technical grade)
Specific gravity: 1.47 gcm^{-3}
Melting point: 158 C
Vapor pressure (25 C): 5.8 x 10^{-5} mmHg
Solubility (aqueous systems; 25 C):
Distilled water.....109 mg/L
0.05 N sodium phosphate buffer:
pH 4.6.....270 mg/L
pH 5.4.....1750 mg/L
pH 6.7.....9500 mg/L
pK_a: 3.5
Octanol/water partition coefficient (K_{OW}); 0.018

2. STUDY/ACTION TYPE:

Review petition of the Texas Department of Agriculture for pre-harvest uses of ALLY (metsulfuron methyl) in winter wheat. The intended areas of application are the High Plains, the Rolling Plains and the Blackland Prairies.

3. STUDY IDENTIFICATION:

- Letter of the Texas Department of Agriculture requesting an exemption to use ALLY to extend the 15-day authorized crisis exemption Signed by Mike Moeller, Deputy Commissioner; May 29, 1990.

This latter was accompanied by a report prepared by Jim Hightower, Texas Department of Agriculture. The title of the report is Application for a Specific Exemption to Authorize the Use of ALLY Herbicide as a Pre-harvest Aid in Non-irrigated Winter Wheat. Dated may 29, 1990.

4. REVIEWED BY:

Silvia C. Termes, Chemist
Review Section #2
OPP/EFED/EFGWB

Signature: _____
Date: June 20 1990

5. APPROVED BY:

Emil Regelman
Supervisory Chemist
Review Section #2
OPP/EFED/EFGWB

Signature: _____
Date: JUN 22 1990

6. CONCLUSIONS:

ALLY is not currently registered for pre-harvest use in winter wheat.

In another letter submitted by the Texas Department of Agriculture for use of sodium chlorate in a crisis exemption in dryland winter wheat in the same physiographic regions of Texas as the petition for ALLY, it is stated that the Department has "learned that commercial pesticide applicators are refusing to apply Ally Herbicide to winter wheat located in the Blackland Prairies based on concerns of liability due to close proximity of sensitive crops and the long rotational restrictions which appear on the ALLY Herbicide label". The date of this letter is 5/29/90.

EFGWB shares this same concern for the other two physiographic areas since the pesticide is being applied aerially. EFGWB has notified EEB about the information contained in this other letter.

With respect to groundwater concerns, EFGWB has searched (DBAPE Database) for wheat-growing soils that are most vulnerable to leaching of pesticides. Of the 57 main soils used for wheat in the High Plains and the Rolling Plains, 50 were found to be vulnerable. The most vulnerable soils (by soil series name) were: Acuff, Bippus, Estacado, Humbarger, Conlen, Dallam, Dalupe, Dumas, Spurlock, Sunray, Texline, Zita, Lincoln (highly vulnerable), Mansker, Springer, Ulysses, Amarillo, Arch, Brownfield (highly vulnerable), Drake, Midessa, Posey, Spur, Dalhart, Portales, Capps, Harney, Manzano, Cass, Mobeetie, Veazie, Richfield, Ambraw, and Tulia.

In some of these soils sugarbeets may grow or can be potentially grown. Sugarbeets are known to be very sensitive to sulfonylurea herbicides even at very low concentrations. The soils were sugarbeets may grow or have potential to grow are: Pullman (less vulnerable), Amarillo, Ulysses, and Richfield.

A print-out showing the characteristics, the potential crops, and the total acreage for each soil is attached to this review and should be made available to the petitioner. A print-out showing the percentage of sand in the surface of these soils (in decreasing order) has also been attached and should be made available to the petitioner.

SUMMARY:

The concerns of EFGWB for the proposed uses of ALLY are three-folded:

1. ALLY is not registered for the proposed, pre-harvest use. Residues of metsulfuron methyl may remain longer in soil than when applied postemergence. This is important when rotation crops are to be planted.

2. Aerial application may reach nontarget vegetation. Sensitive crops such as sugarbeets (which grow or potentially can grow in some of the soils within the physiographic areas under consideration) may be damaged by drift during application. See listing of soils where sugarbeets may be grown.

3. Fifty of the fifty-seven soils in which wheat grows (or potentially can grow) within High Plains and Rolling Plains are vulnerable soils. Metsulfuron methyl is mobile, particularly in soils with a high-sand content/low organic matter content; it is also somewhat persistent in soils and has been determined to be a potential leacher.

   Because other factors (for example, depth of water table, hydraulic conductivity, etc.) are to be considered when fully evaluating the leaching potential of metsulfuron methyl for these soils within these particular physiographic areas, the use of DRASTIC scores to assess vulnerability in the counties of concern is recommended.

7. RECOMMENDATIONS:

- EFGWB concerns have been expressed in the CONCLUSIONS section.

- As indicated in the CONCLUSIONS section, the soil survey and the ranking of soils by sand content should be made available to the petitioner.

- With respect to the label amendment proposed by the petitioner regarding the necessity to include an expanded groundwater advisory, it is recommended that this issue be addressed separately to the Agency (through the Registration Division).

- A copy of this review should be made available to EEB (Charlie Lewis).

8. BACKGROUND:

Metsulfuron methyl is a sulfonylurea herbicide currently registered for postemergence use in small grains. It also registered for weed control in noncrop areas.

9. DISCUSSION OF INDIVIDUAL STUDIES: No studies were submitted.

The approach to determine soil vulnerability was as follows:

a) Identification of counties in the High Plains and Rolling Plains where wheat is grown (based on information given by the petitioner).

b) Searching the soils in which wheat is grown within those counties;

c) Imposing soil characteristics leading to vulnerability;

d) Searching the vulnerable soils;

e) From the output, those soils labeled as "A" and "B" were considered the most vulnerable (Refer to print-out).

10. COMPLETION OF ONE-LINER: No one-liner was completed.

11. CBI APPENDIX: No CBI.

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SOIL SERIES (NAME)> ACUFF SOIL NUMBER (NUMERIC CODE)> P1 1012

DEPTH(CM)	CLASS	% SAND L	% SAND H	% CLAY L	% CLAY H	BULK DENS. L	BULK DENS. H	ORG. MAT. L	ORG. MAT. H	AVAIL H20 L	AVAIL H20 H	HGRP
SUR 30.5	3	30	49	13	30	1.30	1.55	1.0	2.0	0.12	0.18	B
SUB 251.5	7	25	40	20	35	1.55	1.70	0.2	0.8	0.10	0.16	

POTENTIAL CROPS

2 COTTON 6 SORGHUM 9 WHEAT 7 SOYBEANS
1 CORN

TOTAL ACRES: 124833.

SOIL SERIES (NAME)> BIPPUS SOIL NUMBER (NUMERIC CODE)> P1 1247

DEPTH(CM)	CLASS	% SAND L	% SAND H	% CLAY L	% CLAY H	BULK DENS. L	BULK DENS. H	ORG. MAT. L	ORG. MAT. H	AVAIL H20 L	AVAIL H20 H	HGRP
SUR 38.1	2	20	50	15	35	1.40	1.60	1.0	3.0	0.14	0.20	B
SUB 167.6	2	25	64	20	35	1.40	1.65	0.2	1.2	0.14	0.20	

POTENTIAL CROPS

2 COTTON 6 SORGHUM 9 WHEAT 7 SOYBEANS
1 CORN

TOTAL ACRES: 36625.

SOIL SERIES (NAME)> LOFTON SOIL NUMBER (NUMERIC CODE)> P1 2652

DEPTH(CM)	CLASS	% SAND L	% SAND H	% CLAY L	% CLAY H	BULK DENS. L	BULK DENS. H	ORG. MAT. L	ORG. MAT. H	AVAIL H20 L	AVAIL H20 H	HGRP
SUR 22.9	2	10	30	30	40	1.20	1.40	1.0	3.0	0.14	0.18	D
SUB 203.2	1	20	40	35	50	1.30	1.50	0.3	1.5	0.10	0.14	

POTENTIAL CROPS

2 COTTON 6 SORGHUM 9 WHEAT 7 SOYBEANS
1 CORN

TOTAL ACRES: 66702.

SOIL SERIES (NAME)> OLTON SOIL NUMBER (NUMERIC CODE)> P1 3093

DEPTH(CM)	CLASS	% SAND	% CLAY	BULK DENS.	ORG. MAT.	AVAIL H20	HGRP

		% SAND L	% SAND H	% CLAY L	% CLAY H	BULK DENS. L	BULK DENS. H	ORG. MAT. L	ORG. MAT. H	AVAIL H20 L	AVAIL H20 H	HGRP
SUR 20.3	2	15	45	22	35	1.40	1.60	1.0	2.0	0.15	0.20	C
SUB 251.5	2	10	40	25	40	1.50	1.80	0.2	0.6	0.10	0.16	

POTENTIAL CROPS

2 COTTON 6 SORGHUM 9 WHEAT 7 SOYBEANS
1 CORN

TOTAL ACRES: 607446.

SOIL SERIES (NAME)> PULLMAN SOIL NUMBER (NUMERIC CODE)> P1 3281

DEPTH(CM)	CLASS	% SAND L	% SAND H	% CLAY L	% CLAY H	BULK DENS. L	BULK DENS. H	ORG. MAT. L	ORG. MAT. H	AVAIL H20 L	AVAIL H20 H	HGRP
SUR 15.2	2	5	30	27	40	1.25	1.40	1.0	3.0	0.15	0.19	D
SUB 96.5	1	2	15	40	55	1.40	1.55	0.3	1.5	0.15	0.19	
STR 198.1	2	5	25	35	50	1.40	1.60	0.2	0.9	0.10	0.16	

POTENTIAL CROPS

9 WHEAT 6 SORGHUM 2 COTTON 1 CORN
7 SOYBEANS

TOTAL ACRES: 2285840.

SOIL SERIES (NAME)> ESTACADO SOIL NUMBER (NUMERIC CODE)> PI11144

DEPTH(CM)	CLASS	% SAND L	% SAND H	% CLAY L	% CLAY H	BULK DENS. L	BULK DENS. H	ORG. MAT. L	ORG. MAT. H	AVAIL H20 L	AVAIL H20 H	HGRP
SUR 40.6	2	10	35	27	30	1.30	1.45	1.0	3.0	0.12	0.18	B
SUB 71.1	2	10	40	20	35	1.35	1.55	0.2	1.2	0.12	0.18	
STR 203.2	2	10	40	20	35	1.40	1.60	0.1	0.6	0.10	0.18	

POTENTIAL CROPS

1 CORN 2 COTTON 6 SORGHUM 7 SOYBEANS
9 WHEAT

TOTAL ACRES: 124318.

SOIL SERIES (NAME)> LIPAN SOIL NUMBER (NUMERIC CODE)> PI11991

DEPTH(CM)	CLASS	% SAND	% CLAY	BULK DENS.	ORG. MAT.	AVAIL H20	HGRP

		% SAND L	% SAND H	% CLAY L	% CLAY H	BULK DENS. L	BULK DENS. H	ORG. MAT. L	ORG. MAT. H	AVAIL H20 L	AVAIL H20 H	HGRP
SUR 121.9	1	2	20	40	60	1.20	1.35	1.0	3.0	0.13	0.18	D
SUB 182.9	1	2	30	40	60	1.30	1.45	0.3	1.5	0.13	0.18	

POTENTIAL CROPS

2 COTTON 3 GRASS/PAS/HAY 6 SORGHUM 9 WHEAT

TOTAL ACRES: 11437.

SOIL SERIES (NAME)> RANDALL SOIL NUMBER (NUMERIC CODE)> PI12810

DEPTH(CM)	CLASS	% SAND L	% SAND H	% CLAY L	% CLAY H	BULK DENS. L	BULK DENS. H	ORG. MAT. L	ORG. MAT. H	AVAIL H20 L	AVAIL H20 H	HGRP
SUR 50.8	1	2	25	40	60	1.20	1.40	0.5	2.0	0.12	0.18	D
SUB 147.3	1	2	25	40	60	1.25	1.40	0.2	1.0	0.12	0.18	
STR 167.6	1	5	30	40	60	1.30	1.45	0.1	0.6	0.11	0.15	

POTENTIAL CROPS

6 SORGHUM 9 WHEAT

TOTAL ACRES: 112076.

SOIL SERIES (NAME)> GRUVER SOIL NUMBER (NUMERIC CODE)> P1 2154

DEPTH(CM)	CLASS	% SAND L	% SAND H	% CLAY L	% CLAY H	BULK DENS. L	BULK DENS. H	ORG. MAT. L	ORG. MAT. H	AVAIL H20 L	AVAIL H20 H	HGRP
SUR 20.3	2	5	30	27	35	1.30	1.45	1.0	3.0	0.14	0.20	C
SUB 203.2	2	5	40	35	40	1.40	1.50	0.2	0.9	0.10	0.16	

POTENTIAL CROPS

1 CORN 6 SORGHUM 7 SOYBEANS 9 WHEAT

TOTAL ACRES: 160163.

SOIL SERIES (NAME)> HUMBARGER SOIL NUMBER (NUMERIC CODE)> P1 2330

DEPTH(CM)	CLASS	% SAND L	% SAND H	% CLAY L	% CLAY H	BULK DENS. L	BULK DENS. H	ORG. MAT. L	ORG. MAT. H	AVAIL H20 L	AVAIL H20 H	HGRP
SUR 55.9	2	10	30	27	32	1.35	1.45	1.0	3.0	0.18	0.21	B
SUB 76.2	2	15	45	16	35	1.40	1.50	0.2	1.2	0.18	0.20	
STR 152.4	2	20	60	12	32	1.40	1.50	0.1	0.6	0.13	0.20	

POTENTIAL CROPS

9 WHEAT 6 SORGHUM 1 CORN 3 GRASS/PAS/HAY

TOTAL ACRES: 7921.

SOIL SERIES (NAME)> SHERM SOIL NUMBER (NUMERIC CODE)> P1 3538

DEPTH(CM)	CLASS	% SAND		% CLAY		BULK DENS.		ORG. MAT.		AVAIL H20		HGRP
		L	H	L	H	L	H	L	H	L	H	
SUR 12.7	2	10	30	27	40	1.25	1.40	1.0	3.0	0.15	0.19	D
SUB 88.9	1	2	15	40	55	1.35	1.50	0.3	1.5	0.13	0.18	
STR 203.2	2	5	25	35	55	1.45	1.50	0.2	0.9	0.10	0.17	

POTENTIAL CROPS

1 CORN 6 SORGHUM 7 SOYBEANS 9 WHEAT

TOTAL ACRES: 491903.

SOIL SERIES (NAME)> CHURCH SOIL NUMBER (NUMERIC CODE)> PI10708

DEPTH(CM)	CLASS	% SAND		% CLAY		BULK DENS.		ORG. MAT.		AVAIL H20		HGRP
		L	H	L	H	L	H	L	H	L	H	
SUR 17.8	2	5	30	30	40	1.40	1.50	0.3	0.5	0.19	0.21	D
SUB 40.6	1	5	25	35	50	1.45	1.55	0.1	0.2	0.14	0.19	
STR 152.4	2	5	25	35	50	1.45	1.55	0.1	0.2	0.14	0.19	

POTENTIAL CROPS

1 CORN 6 SORGHUM 9 WHEAT

TOTAL ACRES: 7395.

SOIL SERIES (NAME)> CONLEN SOIL NUMBER (NUMERIC CODE)> PI10796

DEPTH(CM)	CLASS	% SAND		% CLAY		BULK DENS.		ORG. MAT.		AVAIL H20		HGRP
		L	H	L	H	L	H	L	H	L	H	
SUR 25.4	3	25	64	15	30	1.20	1.40	1.0	3.0	0.13	0.19	B
SUB 76.2	2	20	60	20	35	1.30	1.55	0.2	1.2	0.08	0.16	
STR 167.6	2	20	49	24	35	1.45	1.65	0.1	0.6	0.10	0.18	

POTENTIAL CROPS

6 SORGHUM 9 WHEAT

TOTAL ACRES: 110932.

SOIL SERIES (NAME)> DALLAM SOIL NUMBER (NUMERIC CODE)> PI10897

DEPTH(CM)		CLASS	% SAND L	% SAND H	% CLAY L	% CLAY H	BULK DENS. L	BULK DENS. H	ORG. MAT. L	ORG. MAT. H	AVAIL H20 L	AVAIL H20 H	HGRP
SUR	20.3	8	50	70	10	18	1.35	1.65	0.5	1.0	0.11	0.15	B
SUB	81.3	7	30	55	22	35	1.30	1.65	0.1	0.4	0.12	0.18	
STR	203.2	7	25	55	20	35	1.45	1.70	0.1	0.2	0.10	0.15	

POTENTIAL CROPS

1 CORN 3 GRASS/PAS/HAY 6 SORGHUM 9 WHEAT

TOTAL ACRES: 330700.

SOIL SERIES (NAME)> DALUPE SOIL NUMBER (NUMERIC CODE)> PI10899

DEPTH(CM)		CLASS	% SAND L	% SAND H	% CLAY L	% CLAY H	BULK DENS. L	BULK DENS. H	ORG. MAT. L	ORG. MAT. H	AVAIL H20 L	AVAIL H20 H	HGRP
SUR	25.4	8	45	64	8	20	1.45	1.60	0.5	1.0	0.10	0.14	B
SUB	152.4	8	35	64	8	18	1.45	1.60	0.1	0.4	0.10	0.15	

POTENTIAL CROPS

6 SORGHUM 9 WHEAT

TOTAL ACRES: 3800.

SOIL SERIES (NAME)> DUMAS SOIL NUMBER (NUMERIC CODE)> PI11035

DEPTH(CM)		CLASS	% SAND L	% SAND H	% CLAY L	% CLAY H	BULK DENS. L	BULK DENS. H	ORG. MAT. L	ORG. MAT. H	AVAIL H20 L	AVAIL H20 H	HGRP
SUR	17.8	3	30	55	15	30	1.30	1.50	1.0	3.0	0.14	0.19	B
SUB	86.4	2	25	55	22	35	1.40	1.65	0.2	1.2	0.15	0.20	

POTENTIAL CROPS

1 CORN 6 SORGHUM 7 SOYBEANS 9 WHEAT

TOTAL ACRES: 65575.

SOIL SERIES (NAME)> RICKMORE SOIL NUMBER (NUMERIC CODE)> PI12889

DEPTH(CM)		CLASS	% SAND L	% SAND H	% CLAY L	% CLAY H	BULK DENS. L	BULK DENS. H	ORG. MAT. L	ORG. MAT. H	AVAIL H20 L	AVAIL H20 H	HGRP
SUR	20.3	8	50	70	10	20	1.45	1.60	0.5	1.0	0.11	0.15	C
SUB	96.5	7	25	55	30	35	1.40	1.55	0.1	0.3	0.14	0.20	
STR	203.2	2	20	50	30	35	1.45	1.60	0.1	0.2	0.10	0.16	

POTENTIAL CROPS

1 CORN 3 GRASS/PAS/HAY 6 SORGHUM 9 WHEAT

TOTAL ACRES: 19600.

SOIL SERIES (NAME)> SPURLOCK SOIL NUMBER (NUMERIC CODE)> PI13199

DEPTH(CM)	CLASS	% SAND L	% SAND H	% CLAY L	% CLAY H	BULK DENS. L	BULK DENS. H	ORG. MAT. L	ORG. MAT. H	AVAIL H20 L	AVAIL H20 H	HGRP
SUR 17.8	3	25	55	15	30	1.40	1.55	0.5	1.0	0.13	0.17	B
SUB 203.2	2	10	40	27	32	1.45	1.60	0.1	0.4	0.14	0.19	

POTENTIAL CROPS

1 CORN 3 GRASS/PAS/HAY 6 SORGHUM 9 WHEAT

TOTAL ACRES: 57622.

SOIL SERIES (NAME)> SUNRAY SOIL NUMBER (NUMERIC CODE)> PI13279

DEPTH(CM)	CLASS	% SAND L	% SAND H	% CLAY L	% CLAY H	BULK DENS. L	BULK DENS. H	ORG. MAT. L	ORG. MAT. H	AVAIL H20 L	AVAIL H20 H	HGRP
SUR 30.5	2	25	49	15	30	1.35	1.50	1.0	3.0	0.15	0.20	B
SUB 203.2	2	5	35	20	35	1.40	1.55	0.2	1.2	0.10	0.18	

POTENTIAL CROPS

6 SORGHUM 9 WHEAT

TOTAL ACRES: 275161.

SOIL SERIES (NAME)> TEXLINE SOIL NUMBER (NUMERIC CODE)> PI13360

DEPTH(CM)	CLASS	% SAND L	% SAND H	% CLAY L	% CLAY H	BULK DENS. L	BULK DENS. H	ORG. MAT. L	ORG. MAT. H	AVAIL H20 L	AVAIL H20 H	HGRP
SUR 25.4	3	20	45	18	27	1.35	1.50	1.0	2.0	0.15	0.20	B
SUB 96.5	2	10	45	22	35	1.40	1.55	0.2	0.8	0.12	0.18	
STR 203.2	7	15	49	22	35	1.45	1.60	0.1	0.4	0.12	0.18	

POTENTIAL CROPS

1 CORN 6 SORGHUM 9 WHEAT

TOTAL ACRES: 17900.

SOIL SERIES (NAME)> ZITA SOIL NUMBER (NUMERIC CODE)> P1 4077

DEPTH(CM)	CLASS	% SAND L	% SAND H	% CLAY L	% CLAY H	BULK DENS. L	BULK DENS. H	ORG. MAT. L	ORG. MAT. H	AVAIL H20 L	AVAIL H20 H	HGRP
SUR 17.8	3	30	55	20	35	1.30	1.60	1.0	3.0	0.15	0.20	B
SUB 61.0	2	25	40	25	35	1.50	1.80	0.2	1.2	0.15	0.20	
STR 152.4	2	25	50	25	35	1.50	1.80	0.1	0.6	0.10	0.16	

POTENTIAL CROPS

2 COTTON 6 SORGHUM 9 WHEAT 7 SOYBEANS

TOTAL ACRES: 49011.

SOIL SERIES (NAME)> LINCOLN SOIL NUMBER (NUMERIC CODE)> PI11983

DEPTH(CM)	CLASS	% SAND L	% SAND H	% CLAY L	% CLAY H	BULK DENS. L	BULK DENS. H	ORG. MAT. L	ORG. MAT. H	AVAIL H20 L	AVAIL H20 H	HGRP
SUR 27.9	4	65	85	5	15	1.35	1.50	0.0	0.5	0.06	0.11	A
SUB 152.4	5	65	95	5	15	1.30	1.60	0.0	0.2	0.02	0.08	

POTENTIAL CROPS

3 GRASS/PAS/HAY 6 SORGHUM 9 WHEAT

TOTAL ACRES: 2981.

SOIL SERIES (NAME)> MANSKER SOIL NUMBER (NUMERIC CODE)> PI12085

DEPTH(CM)	CLASS	% SAND L	% SAND H	% CLAY L	% CLAY H	BULK DENS. L	BULK DENS. H	ORG. MAT. L	ORG. MAT. H	AVAIL H20 L	AVAIL H20 H	HGRP
SUR 30.5	3	25	60	20	30	1.35	1.55	1.0	3.0	0.13	0.19	B
SUB 71.1	2	20	60	20	35	1.35	1.65	0.2	1.2	0.08	0.16	
STR 167.6	2	15	55	15	40	1.40	1.70	0.1	0.6	0.10	0.18	

POTENTIAL CROPS

1 CORN 2 COTTON 5 PEANUTS 6 SORGHUM
9 WHEAT 16 POTATOES

TOTAL ACRES: 69925.

SOIL SERIES (NAME)> MONTOYA SOIL NUMBER (NUMERIC CODE)> PI12276

DEPTH(CM)	CLASS	% SAND L	% SAND H	% CLAY L	% CLAY H	BULK DENS. L	BULK DENS. H	ORG. MAT. L	ORG. MAT. H	AVAIL H20 L	AVAIL H20 H	HGRP
SUR 10.2	2	10	30	30	40	1.40	1.50	1.0	2.0	0.19	0.21	D
STR 152.4	1	5	25	35	60	1.30	1.40	0.2	0.6	0.14	0.16	

POTENTIAL CROPS

2 COTTON 3 GRASS/PAS/HAY 6 SORGHUM 9 WHEAT

TOTAL ACRES: 3700.

SOIL SERIES (NAME)> PULLMAN SOIL NUMBER (NUMERIC CODE)> PI12769

DEPTH(CM)	CLASS	% SAND L	% SAND H	% CLAY L	% CLAY H	BULK DENS. L	BULK DENS. H	ORG. MAT. L	ORG. MAT. H	AVAIL H20 L	AVAIL H20 H	HGRP
SUR 15.2	2	5	30	27	40	1.25	1.40	1.0	3.0	0.15	0.19	D
SUB 96.5	1	2	15	40	55	1.40	1.55	0.3	1.5	0.15	0.19	
STR 198.1	2	5	25	35	50	1.40	1.60	0.2	0.9	0.10	0.16	

POTENTIAL CROPS

1 CORN 3 GRASS/PAS/HAY 6 SORGHUM 7 SOYBEANS
9 WHEAT 30 SUGARBEETS

TOTAL ACRES: 1057.

SOIL SERIES (NAME)> SPRINGER SOIL NUMBER (NUMERIC CODE)> PI13194

DEPTH(CM)	CLASS	% SAND L	% SAND H	% CLAY L	% CLAY H	BULK DENS. L	BULK DENS. H	ORG. MAT. L	ORG. MAT. H	AVAIL H20 L	AVAIL H20 H	HGRP
SUR 40.6	4	75	92	5	15	1.30	1.60	1.0	1.5	0.06	0.10	B
SUB 203.2	8	55	89	10	25	1.50	1.70	0.2	0.6	0.10	0.16	

POTENTIAL CROPS

1 CORN 3 GRASS/PAS/HAY 5 PEANUTS 6 SORGHUM
9 WHEAT 16 POTATOES

TOTAL ACRES: 2710.

SOIL SERIES (NAME)> ULYSSES SOIL NUMBER (NUMERIC CODE)> PI13514

DEPTH(CM)	CLASS	% SAND	% CLAY	BULK DENS.	ORG. MAT.	AVAIL H20	HGRP

		L	H	L	H	L	H	L	H	L	H	
SUR	25.4	12	0	15	10	27	1.15	1.25	1.0	3.0	0.20	0.24	B
SUB	76.2	12	0	15	21	32	1.20	1.35	0.2	1.2	0.16	0.20	
STR	152.4	12	0	15	18	27	1.25	1.35	0.1	0.6	0.18	0.22	

POTENTIAL CROPS

1 CORN 3 GRASS/PAS/HAY 6 SORGHUM 9 WHEAT
30 SUGARBEETS

TOTAL ACRES: 210452.

SOIL SERIES (NAME)> AMARILLO SOIL NUMBER (NUMERIC CODE)> PI10099

DEPTH(CM)		CLASS	% SAND		% CLAY		BULK DENS.		ORG. MAT.		AVAIL H20		HGRP
			L	H	L	H	L	H	L	H	L	H	
SUR	27.9	8	45	70	10	18	1.35	1.60	0.5	1.0	0.11	0.15	B
SUB	203.2	2	30	65	20	35	1.40	1.80	0.1	0.4	0.10	0.15	

POTENTIAL CROPS

1 CORN 3 GRASS/PAS/HAY 6 SORGHUM 7 SOYBEANS
9 WHEAT 16 POTATOES 30 SUGARBEETS

TOTAL ACRES: 42876.

SOIL SERIES (NAME)> ARCH SOIL NUMBER (NUMERIC CODE)> PI10153

DEPTH(CM)		CLASS	% SAND		% CLAY		BULK DENS.		ORG. MAT.		AVAIL H20		HGRP
			L	H	L	H	L	H	L	H	L	H	
SUR	25.4	8	60	70	15	20	1.45	1.55	0.7	1.0	0.10	0.12	B
SUB	43.2	7	40	55	18	35	1.40	1.50	0.1	0.4	0.14	0.16	
STR	152.4	2	45	60	18	35	1.40	1.50	0.1	0.2	0.13	0.15	

POTENTIAL CROPS

2 COTTON 3 GRASS/PAS/HAY 5 PEANUTS 6 SORGHUM
9 WHEAT 16 POTATOES

TOTAL ACRES: 1280.

SOIL SERIES (NAME)> BIPPUS SOIL NUMBER (NUMERIC CODE)> PI10356

DEPTH(CM)		CLASS	% SAND		% CLAY		BULK DENS.		ORG. MAT.		AVAIL H20		HGRP
			L	H	L	H	L	H	L	H	L	H	
SUR	38.1	2	20	50	15	35	1.40	1.60	1.0	3.0	0.14	0.20	B
SUB	167.6	2	25	64	20	35	1.40	1.65	0.2	1.2	0.14	0.20	

POTENTIAL CROPS

1 CORN 2 COTTON 6 SORGHUM 7 SOYBEANS
9 WHEAT

TOTAL ACRES: 9994.

SOIL SERIES (NAME)> BROWNFIELD SOIL NUMBER (NUMERIC CODE)> PI10498

DEPTH(CM)	CLASS	% SAND L	% SAND H	% CLAY L	% CLAY H	BULK DENS. L	BULK DENS. H	ORG. MAT. L	ORG. MAT. H	AVAIL H20 L	AVAIL H20 H	HGRP
SUR 66.0	5	80	95	3	10	1.50	1.65	0.0	0.5	0.03	0.08	A
SUB 152.4	7	55	75	18	35	1.55	1.70	0.0	0.2	0.12	0.18	
STR 203.2	7	55	85	15	35	1.60	1.80	0.0	0.1	0.11	0.15	

POTENTIAL CROPS

1 CORN 3 GRASS/PAS/HAY 5 PEANUTS 6 SORGHUM
9 WHEAT 16 POTATOES

TOTAL ACRES: 1553.

SOIL SERIES (NAME)> DRAKE SOIL NUMBER (NUMERIC CODE)> PI11018

DEPTH(CM)	CLASS	% SAND L	% SAND H	% CLAY L	% CLAY H	BULK DENS. L	BULK DENS. H	ORG. MAT. L	ORG. MAT. H	AVAIL H20 L	AVAIL H20 H	HGRP
SUR 20.3	3	25	55	18	35	1.35	1.50	0.5	2.0	0.08	0.12	B
STR 203.2	3	25	55	18	35	1.45	1.60	0.1	0.4	0.08	0.12	

POTENTIAL CROPS

6 SORGHUM 9 WHEAT

TOTAL ACRES: 2053.

SOIL SERIES (NAME)> MIDESSA SOIL NUMBER (NUMERIC CODE)> PI12200

DEPTH(CM)	CLASS	% SAND L	% SAND H	% CLAY L	% CLAY H	BULK DENS. L	BULK DENS. H	ORG. MAT. L	ORG. MAT. H	AVAIL H20 L	AVAIL H20 H	HGRP
SUR 25.4	8	45	70	10	20	1.35	1.55	0.5	1.0	0.10	0.15	B
SUB 76.2	7	20	64	20	35	1.30	1.50	0.1	0.4	0.12	0.18	
STR 177.8	7	20	60	20	35	1.35	1.55	0.1	0.2	0.10	0.16	

POTENTIAL CROPS

2 COTTON 6 SORGHUM 9 WHEAT

TOTAL ACRES: 960.

SOIL SERIES (NAME)> POSEY SOIL NUMBER (NUMERIC CODE)> PI12736

DEPTH(CM)	CLASS	% SAND L	% SAND H	% CLAY L	% CLAY H	BULK DENS. L	BULK DENS. H	ORG. MAT. L	ORG. MAT. H	AVAIL H20 L	AVAIL H20 H	HGRP
SUR 25.4	8	45	70	10	18	1.40	1.55	0.5	1.0	0.10	0.15	B
SUB 203.2	7	10	40	20	35	1.45	1.60	0.1	0.4	0.10	0.18	

POTENTIAL CROPS

2 COTTON 6 SORGHUM 9 WHEAT

TOTAL ACRES: 6275.

SOIL SERIES (NAME)> SPUR SOIL NUMBER (NUMERIC CODE)> P1 3609

DEPTH(CM)	CLASS	% SAND L	% SAND H	% CLAY L	% CLAY H	BULK DENS. L	BULK DENS. H	ORG. MAT. L	ORG. MAT. H	AVAIL H20 L	AVAIL H20 H	HGRP
SUR 38.1	2	15	45	20	35	1.30	1.45	1.0	3.0	0.14	0.20	B
SUB 152.4	2	15	45	20	35	1.45	1.60	0.2	1.2	0.14	0.20	

POTENTIAL CROPS

1 CORN 6 SORGHUM 9 WHEAT 7 SOYBEANS

TOTAL ACRES: 5132.

SOIL SERIES (NAME)> DALHART SOIL NUMBER (NUMERIC CODE)> PI10895

DEPTH(CM)	CLASS	% SAND L	% SAND H	% CLAY L	% CLAY H	BULK DENS. L	BULK DENS. H	ORG. MAT. L	ORG. MAT. H	AVAIL H20 L	AVAIL H20 H	HGRP
SUR 22.9	8	40	64	10	18	1.30	1.60	0.5	1.0	0.11	0.15	B
SUB 96.5	7	20	60	18	30	1.45	1.70	0.1	0.4	0.14	0.18	
STR 182.9	8	35	64	10	24	1.45	1.70	0.1	0.2	0.12	0.16	

POTENTIAL CROPS

3 GRASS/PAS/HAY 6 SORGHUM 9 WHEAT

TOTAL ACRES: 50306.

SOIL SERIES (NAME)> PORTALES SOIL NUMBER (NUMERIC CODE)> PI12730

DEPTH(CM)	CLASS	% SAND L	% SAND H	% CLAY L	% CLAY H	BULK DENS. L	BULK DENS. H	ORG. MAT. L	ORG. MAT. H	AVAIL H20 L	AVAIL H20 H	HGRP
SUR 20.3	3	30	40	15	25	1.30	1.40	1.0	2.0	0.17	0.19	B
SUB 203.2	2	20	40	18	35	1.40	1.50	0.2	0.8	0.18	0.20	

POTENTIAL CROPS

1 CORN 2 COTTON 3 GRASS/PAS/HAY 5 PEANUTS
6 SORGHUM 9 WHEAT 16 POTATOES

TOTAL ACRES: 38489.

SOIL SERIES (NAME)> SPUR SOIL NUMBER (NUMERIC CODE)> PI13198

DEPTH(CM)	CLASS	% SAND L	% SAND H	% CLAY L	% CLAY H	BULK DENS. L	BULK DENS. H	ORG. MAT. L	ORG. MAT. H	AVAIL H20 L	AVAIL H20 H	HGRP
SUR 38.1	2	15	45	20	35	1.30	1.45	1.0	3.0	0.14	0.20	B
SUB 152.4	2	15	45	20	35	1.45	1.60	0.2	1.2	0.14	0.20	

POTENTIAL CROPS

2 COTTON 6 SORGHUM 7 SOYBEANS 9 WHEAT

TOTAL ACRES: 11462.

SOIL SERIES (NAME)> CAPPS SOIL NUMBER (NUMERIC CODE)> P1 1448

DEPTH(CM)	CLASS	% SAND L	% SAND H	% CLAY L	% CLAY H	BULK DENS. L	BULK DENS. H	ORG. MAT. L	ORG. MAT. H	AVAIL H20 L	AVAIL H20 H	HGRP
SUR 38.1	2	10	40	16	32	1.30	1.45	1.0	3.0	0.15	0.20	B
SUB 88.9	2	20	45	25	35	1.35	1.50	0.2	1.2	0.14	0.20	
STR 152.4	2	20	49	25	35	1.40	1.55	0.1	0.6	0.10	0.15	

POTENTIAL CROPS

9 WHEAT 6 SORGHUM 7 SOYBEANS 1 CORN

TOTAL ACRES: 4534.

SOIL SERIES (NAME)> HARNEY SOIL NUMBER (NUMERIC CODE)> P1 2200

DEPTH(CM)	CLASS	% SAND L	% SAND H	% CLAY L	% CLAY H	BULK DENS. L	BULK DENS. H	ORG. MAT. L	ORG. MAT. H	AVAIL H20 L	AVAIL H20 H	HGRP
SUR 30.5	12	0	15	22	27	1.30	1.40	2.0	4.0	0.22	0.24	B
SUB 71.1	11	0	15	35	42	1.35	1.50	0.4	1.6	0.12	0.19	
STR 152.4	12	0	15	24	35	1.20	1.35	0.2	0.8	0.18	0.22	

POTENTIAL CROPS

9 WHEAT 6 SORGHUM 3 GRASS/PAS/HAY 1 CORN

TOTAL ACRES: 18830.

SOIL SERIES (NAME)> MANZANO SOIL NUMBER (NUMERIC CODE)> P1 2740

DEPTH(CM)	CLASS	% SAND L	% SAND H	% CLAY L	% CLAY H	BULK DENS. L	BULK DENS. H	ORG. MAT. L	ORG. MAT. H	AVAIL H20 L	AVAIL H20 H	HGRP
SUR 35.6	3	20	40	10	25	1.20	1.30	2.0	3.0	0.16	0.18	B
SUB 152.4	2	15	50	18	34	1.40	1.50	0.4	1.2	0.16	0.21	
STR 177.8	3	40	60	15	20	1.45	1.55	0.2	0.6	0.13	0.15	

POTENTIAL CROPS

3 GRASS/PAS/HAY 10 BARLEY 4 OATS 9 WHEAT

TOTAL ACRES: 3925.

SOIL SERIES (NAME)> CASS SOIL NUMBER (NUMERIC CODE)> PI10609

DEPTH(CM)	CLASS	% SAND L	% SAND H	% CLAY L	% CLAY H	BULK DENS. L	BULK DENS. H	ORG. MAT. L	ORG. MAT. H	AVAIL H20 L	AVAIL H20 H	HGRP
SUR 50.8	8	50	60	8	18	1.40	1.60	1.0	2.0	0.16	0.18	B
SUB 139.7	11	5	15	27	37	1.20	1.40	0.2	0.8	0.18	0.20	
STR 152.4	5	70	95	2	8	1.50	1.70	0.1	0.4	0.05	0.10	

POTENTIAL CROPS

1 CORN 3 GRASS/PAS/HAY 4 OATS 6 SORGHUM
7 SOYBEANS 9 WHEAT

TOTAL ACRES: 1856.

SOIL SERIES (NAME)> MOBEETIE SOIL NUMBER (NUMERIC CODE)> PI12246

DEPTH(CM)	CLASS	% SAND L	% SAND H	% CLAY L	% CLAY H	BULK DENS. L	BULK DENS. H	ORG. MAT. L	ORG. MAT. H	AVAIL H20 L	AVAIL H20 H	HGRP

SUR	25.4	8	45	75	10	18	1.35	1.50	0.5	1.0	0.10	0.14	B
SUB	106.7	8	45	75	10	18	1.35	1.50	0.1	0.4	0.10	0.14	
STR	182.9	8	45	75	10	18	1.40	1.55	0.1	0.2	0.10	0.14	

POTENTIAL CROPS

2 COTTON 6 SORGHUM 9 WHEAT

TOTAL ACRES: 5517.

SOIL SERIES (NAME)> VEAZIE SOIL NUMBER (NUMERIC CODE)> PI13552

DEPTH(CM)		CLASS	% SAND L	% SAND H	% CLAY L	% CLAY H	BULK DENS. L	BULK DENS. H	ORG. MAT. L	ORG. MAT. H	AVAIL H20 L	AVAIL H20 H	HGRP
SUR	43.2	12	20	50	10	18	1.15	1.35	2.0	6.0	0.15	0.20	B
SUB	88.9	12	30	70	10	18	1.15	1.35	0.4	2.4	0.10	0.15	
STR	152.4	5	90	100	0	10	1.50	1.65	0.2	1.2	0.02	0.05	

POTENTIAL CROPS

3 GRASS/PAS/HAY 9 WHEAT 31 CHERRIES 36 APPLES
53 PLUMS

TOTAL ACRES: 1452.

SOIL SERIES (NAME)> RICHFIELD SOIL NUMBER (NUMERIC CODE)> P1 3358

DEPTH(CM)		CLASS	% SAND L	% SAND H	% CLAY L	% CLAY H	BULK DENS. L	BULK DENS. H	ORG. MAT. L	ORG. MAT. H	AVAIL H20 L	AVAIL H20 H	HGRP
SUR	15.2	12	0	30	10	24	1.30	1.40	1.0	3.0	0.20	0.24	B
SUB	50.8	11	0	10	35	42	1.35	1.50	0.2	1.2	0.14	0.19	
STR	152.4	12	0	25	18	35	1.20	1.35	0.1	0.6	0.18	0.22	

POTENTIAL CROPS

9 WHEAT 6 SORGHUM 3 GRASS/PAS/HAY 1 CORN
30 SUGARBEETS

TOTAL ACRES: 60747.

SOIL SERIES (NAME)> ROSCOE SOIL NUMBER (NUMERIC CODE)> PI12940

DEPTH(CM)		CLASS	% SAND L	% SAND H	% CLAY L	% CLAY H	BULK DENS. L	BULK DENS. H	ORG. MAT. L	ORG. MAT. H	AVAIL H20 L	AVAIL H20 H	HGRP
SUR	76.2	1	5	25	40	60	1.30	1.45	1.0	3.0	0.12	0.18	D

SUB 190.5	1	5	30	40	60	1.35	1.50	0.3	1.5	0.12	0.17

POTENTIAL CROPS

2 COTTON 3 GRASS/PAS/HAY 6 SORGHUM 9 WHEAT

TOTAL ACRES: 17198.

SOIL SERIES (NAME)> FRIONA SOIL NUMBER (NUMERIC CODE)> P4 5511

DEPTH(CM)	CLASS	% SAND L	% SAND H	% CLAY L	% CLAY H	BULK DENS. L	BULK DENS. H	ORG. MAT. L	ORG. MAT. H	AVAIL H20 L	AVAIL H20 H	HGRP
SUR 20.3	3	30	49	15	29	1.25	1.50	1.0	3.0	0.12	0.18	C
SUB 213.4	7	25	40	20	35	1.50	1.70	0.2	0.9	0.07	0.15	

POTENTIAL CROPS

2 COTTON 6 SORGHUM 9 WHEAT 7 SOYBEANS

TOTAL ACRES: 4290.

SOIL SERIES (NAME)> AMBRAW SOIL NUMBER (NUMERIC CODE)> PN10101

DEPTH(CM)	CLASS	% SAND L	% SAND H	% CLAY L	% CLAY H	BULK DENS. L	BULK DENS. H	ORG. MAT. L	ORG. MAT. H	AVAIL H20 L	AVAIL H20 H	HGRP
SUR 22.9	3	25	40	16	24	1.25	1.40	2.0	3.0	0.17	0.19	B
SUB 104.1	7	25	55	18	34	1.25	1.40	0.4	1.2	0.17	0.19	
STR 152.4	4	70	95	2	12	1.50	1.75	0.2	0.6	0.02	0.06	

POTENTIAL CROPS

1 CORN 3 GRASS/PAS/HAY 4 OATS 7 SOYBEANS
9 WHEAT

TOTAL ACRES: 8840.

SOIL SERIES (NAME)> ARVANA SOIL NUMBER (NUMERIC CODE)> PI10185

DEPTH(CM)	CLASS	% SAND L	% SAND H	% CLAY L	% CLAY H	BULK DENS. L	BULK DENS. H	ORG. MAT. L	ORG. MAT. H	AVAIL H20 L	AVAIL H20 H	HGRP
SUR 20.3	8	50	70	10	20	1.40	1.60	0.5	1.0	0.11	0.15	C
SUB 71.1	7	35	64	18	35	1.45	1.65	0.1	0.3	0.12	0.18	

POTENTIAL CROPS

1 CORN	2 COTTON	5 PEANUTS	6 SORGHUM
9 WHEAT	16 POTATOES		

TOTAL ACRES: 5450.

SOIL SERIES (NAME)> TULIA SOIL NUMBER (NUMERIC CODE)> PI13480

DEPTH(CM)	CLASS	% SAND		% CLAY		BULK DENS.		ORG. MAT.		AVAIL H20		HGRP
		L	H	L	H	L	H	L	H	L	H	
SUR 35.6	3	10	40	15	35	1.30	1.40	0.5	2.0	0.13	0.17	B
SUB 114.3	2	15	45	20	40	1.35	1.55	0.1	0.8	0.07	0.15	
STR 203.2	8	10	40	20	40	1.45	1.65	0.1	0.4	0.10	0.16	

POTENTIAL CROPS

2 COTTON	6 SORGHUM	9 WHEAT

TOTAL ACRES: 2940.

Soil #	Series Name	Acreage	HSAND SUR
10498	BROWNFIELD	1553.	95.
13194	SPRINGER	2710.	92.
11983	LINCOLN	2981.	85.
12246	MOBEETIE	5517.	75.
10185	ARVANA	5450.	70.
12736	POSEY	6275.	70.
12200	MIDESSA	960.	70.
10153	ARCH	1280.	70.
10099	AMARILLO	42876.	70.
12889	RICKMORE	19600.	70.
10897	DALLAM	330700.	70.
10895	DALHART	50306.	64.
10899	DALUPE	3800.	64.
10796	CONLEN	110932.	64.
10609	CASS	1856.	60.
12085	MANSKER	69925.	60.
11018	DRAKE	2053.	55.
4077	ZITA	49011.	55.
13199	SPURLOCK	57622.	55.
11035	DUMAS	65575.	55.
13552	VEAZIE	1452.	50.
10356	BIPPUS	9994.	50.
1247	BIPPUS	36625.	50.
5511	FRIONA	4290.	49.
13279	SUNRAY	275161.	49.
1012	ACUFF	124833.	49.
13198	SPUR	11462.	45.
3609	SPUR	5132.	45.
13360	TEXLINE	17900.	45.
3093	OLTON	607446.	45.
13480	TULIA	2940.	40.
10101	AMBRAW	8840.	40.
2740	MANZANO	3925.	40.
1448	CAPPS	4534.	40.
12730	PORTALES	38489.	40.
11144	ESTACADO	124318.	35.
3358	RICHFIELD	60747.	30.
12769	PULLMAN	1057.	30.
12276	MONTOYA	3700.	30.
10708	CHURCH	7395.	30.
3538	SHERM	491903.	30.
2330	HUMBARGER	7921.	30.
2154	GRUVER	160163.	30.
3281	PULLMAN	2285840.	30.
2652	LOFTON	66702.	30.
12940	ROSCOE	17198.	25.
12810	RANDALL	112076.	25.
11991	LIPAN	11437.	20.
2200	HARNEY	18830.	15.
13514	ULYSSES	210452.	15.

DEPUTY COMMISSIONER
OF AGRICULTURE
MIKE MOELLER
P. O. BOX 12847
AUSTIN, TEXAS 78711 · (512) 463-7567

TO: EPA7356

FROM: EPX5275 (TX/DOA) POSTED: May 29, 1990

ATTN: Becky Cool

SUBJECT: TDA Issues Crisis Exemption
Sodium Chlorate/Winter Wheat/Harvest Aid

Dear Ms. Cool:

On May 15, 1990, the TDA issued a crisis exemption which authorized the use of Ally Herbicide as a pre-harvest aid in dryland produced winter wheat. Need is/was primarily restricted to three physiographic regions of Texas, i.e. the High Plains, Rolling Plains and the Blackland Prairies. We have since learned that commercial pesticide applicators are refusing to apply Ally Herbicide to winter wheat located in the Blackland Prairies based on concerns of liability due to the close proximity of sensitive crops and the long crop rotational restrictions which appear on the Ally Herbicide label. Therefore, pursuant to the authority of the FIFRA, as amended, the Texas Department of Agriculture (TDA) hereby issues a crisis exemption and authorizes the use of Sodium Chlorate as a pre-harvest aid in dryland winter wheat produced in the Blackland Prairies of Texas. We take this action following consultation with Mr. Jim Tompkins of your staff by TDA staff member, Elvis Cozart on May 25, 1990. The notification requirements of 40 CFR 166.43(b) are addressed below.

(1) Any federally registered Sodium Chlorate product which contains a fire retardant is authorized for use.

(2) Practically all of the Sodium Chlorate will be used in dryland winter wheat produced in the Blackland Prairies of Texas.

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

- o The target pest is broadleafed weeds.
- o The crop to be treated is dryland produced winter wheat.
- o Sodium Chlorate may be applied at the rate of 4 to 6 lbs a.i. per acre in a spray volume of 5 to 10 gallons per acre. Product is to be applied utilizing aerial application equipment.

(4) Use of Sodium Chlorate as a pre-harvest aid is authorized to begin on May 25, 1990.

APPLICATION

FOR A

SPECIFIC EXEMPTION

TO AUTHORIZE

THE USE OF

ALLY HERBICIDE

AS

A

PRE-HARVEST AID

IN

NON-IRRIGATED

WINTER WHEAT

JIM HIGHTOWER
Texas Department of Agriculture
P. O. Box 12847
Austin, Texas 78711

May 29, 1990

DEPUTY COMMISSIONER
OF AGRICULTURE
MIKE MOELLER
P. O. BOX 12847
AUSTIN, TEXAS 78711 · (512) 463-7567

May 29, 1990

Ms. Becky Cool
Emergency Response Section (H7505C)
Registration Support Branch
U. S. Environmental Protection Agency
Crystal Mall, Bldg. 2, Room 716B
1921 Jefferson Davis Highway
Arlington, VA 22202

Re: Application for a specific exemption to authorize the use of Ally Herbicide in non-irrigated wheat as a pre-harvest aid.

Dear Ms. Cool:

On May 16, 1990, the Texas Department of Agriculture (TDA) issued a crisis exemption which authorized the above noted use of Ally Herbicide. Since the use period will exceed the 15 days authorized by a crisis exemption, the TDA hereby makes application for a specific exemption in order to extend the life of the crisis exemption.

Sincerely,

Mike Moeller

Mike Moeller
Deputy Commissioner

Enclosure

MM/ecr

(vi) Provisions of and restrictions on use of Ally Herbicide.

- o All applicable directions, precautions and restrictions on the EPA-registered product label for Ally Herbicide must be followed.

- o Application of Ally Herbicide is restricted to certified applicators or persons under the direct supervision of a certified applicator, and only for those uses covered by the certified applicator's certification.

- o DO NOT apply Ally Herbicide when weather conditions favor drift or runoff from areas scheduled for treatment.

- o DO NOT apply Ally Herbicide where runoff is likely to occur.

- o Metsulfuron methyl, the active ingredient in "Ally Herbicide", has the potential to contaminate groundwater at very low concentrations. Users are advised not to apply Ally Herbicide in areas where the groundwater is vulnerable to contamination (i.e. shallow groundwater overlain by soils having high hydraulic conductivity or high recharge conditions).

- o DO NOT harvest winter wheat within 20 days following application of Ally Herbicide as a pre-harvest aid.

- o DO NOT feed treated wheat straw to domestic livestock or graze treated wheat stubble.

- o DO NOT apply Ally Herbicide as a pre-harvest treatment to winter wheat that has been previously treated in the same growing season with Ally Herbicide, Glean, Glean Fertilizer Compatible or Harmony Extra.

- o DO NOT use more than 0.1 oz per acre of Ally Herbicide on the same field in a 22 month period.

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

(i) There are no pesticides currently registered for harvest aid use in wheat.

(ii) Alternative practices.

There are many herbicide products registered for use in winter wheat that can be applied at various times in relation to the planting of wheat and development of the crop that will provide effective but less than full season control of some spectrum of the broadleaf weed species common to the production of winter

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

Human Health

Ally is a sulfonylurea herbicide formulation containing the active ingredient metsulfuron methyl. Ally is registered for use on wheat and barley to control some selected broadleaf weeds.

Toxicological Data

Acute toxicity data indicate that Ally has low toxicity by all major routes of exposure. The LC for oral and dermal exposures were greater than 5,000 and 2,000 mg/kg, respectively. Inhalation LC_{50} (4 hr) was found to be greater than 5.3 mg/L. Ally caused mild skin and ocular irritation, but did not produce any skin sensitizing reaction in laboratory animals. Studies in rats and rabbits showed no signs of developmental toxicity at the highest dose levels of 1,000 and 700 mg/kg/day, respectively. At a dose of 100 mg/kg/day, however, the chemical produced maternal toxicity in rabbits. The compound up to 5,000 ppm did not interfere with normal reproduction or lactation performance as revealed in a 2-generation rat reproduction study. Ally was found negative in various mutagenicity tests.

Toxicokinetic studies in rats and goats show that metsulfuron methyl undergoes limited metabolism in the body and is completely eliminated mainly in the urine within 3 days after exposure. No significant accumulation of the chemical in any tissue was seen. Cows given 5, 20, or 100 ppm metsulfuron methyl in the diet showed no detectable residues in the milk at 5 ppm, although very low levels of residues were detected at other doses.

Subchronic dietary exposure to technical metsulfuron methyl in rats, mice, and dogs revealed no significant morphological changes in any organs. Similar chronic exposure to the chemical in rats (2 yr; NOEL, 500 ppm), mice (18 mon; NOEL, 5,000 ppm), and dogs (12 mon; NOEL, 50 ppm) caused no carcinogenic effects in any specific organ or organ systems.

Risk Assessment

EPA has calculated an oral RfD of 0.25 mg/kg/day for metsulfuron methyl (Ally) from the animal data using appropriate safety factors and classified it under Category D (not classifiable due to inadequate evidence of carcinogenicity in animals). This RfD corresponds to a total intake of 17.5 mg/day and a drinking water equivalent of 8.75 mg/day for a 70 kg adult. These derived numbers represent the amount of metsulfuron methyl which could be ingested by an adult every day for a lifetime without appreciable risk of toxicity based on the existing animal data.

in silt loam soil, and no dissipation by photolysis or volatilization. In EPA's Fact Sheet it is stated that Ally is moderately to very mobile depending on organic content and soil texture and that leaching in silt loam and sand soils will occur. It is also stated that Ally has the potential to contaminate groundwater at very low concentrations. The soil organic carbon/water distribution coefficient (K_{OC}) for Ally is 14.4 (Dupont, 1986, Pesticide Root Zone Model, PRZM, computer simulation). K_{OC} of less than about 500 has been selected as a "flag" indicating a pesticide as a possible leacher (EPA, 1986, Pesticides in Groundwater Background Document). Field dissipation studies show the maximum half-life of Ally to be four weeks (Dupont, 1986, PRZM computer simulation). Half-lives greater than about three weeks indicate soil persistence sufficient to allow high potential for leaching (EPA, 1987, Proposed Agricultural Chemicals in Groundwater Strategic Plan).

Pesticide Root Zone Model results indicate that average levels of metsulfuron methyl, the active ingredient in Ally, in soil water at a depth of 16 feet range from 0.05 ppb to 0.23 ppb with a maximum concentration of about 0.5 ppb. These calculations were based on reasonable worst case assumptions including sandy soil, low organic matter content (from 0.75% in the top 8 inches, to 0.4% in the next 33.5 inches, to 0.2% below that), 43.3 to 50 inches annual rainfall, and 2 ounce AI/acre/year for five years (Dupont, 1986, PRZM computer simulation).

The existing label for Ally does not include a groundwater advisory. Apparently, groundwater protection language is not included on the federal label due to the low toxicity of the chemical, low application rate, and rapid foliar absorption (personal communications, 1988: Vicki Walters, EPA; Albert Parsells, Dupont). The proposed rate of application for this Section 18 is extremely low (0.12 ounce AI/acre), one application allowed per growing season. Correcting PRZM simulation results for this application rate versus the 2 ounce rate given above, the maximum amount of the chemical reaching a depth of 16 feet would be 0.015 ppb rather than 0.5 ppb (Dupont, 1986, PRZM computer simulation).

The proposed area of use for this Section 18 is generally in the eastern half of Texas. Much of this area has been determined to have relatively high groundwater pollution potential from agricultural sources (Texas Water Commission, Report 89-01, DRASTIC analysis). Normal annual precipitation ranges from about 26 to 56 inches in this portion of the State.

Groundwater contamination is possible with this chemical and is likely to become more of a problem as Ally is more widely used. A groundwater advisory statement, not to be more stringent than the generic advisory statement found on numerous federal labels for pesticides having potential to leach, should be attached to the label. The following wording is suggested:

disposal of pesticides in the state of Texas. In addition, the EPA/TDA grant enforcement agreement provides the Department with the authority to enforce the provisions of the FIFRA, as amended, within the state. Therefore, the Department is not lacking in authority to enforce the provisions of an EPA approved specific exemption.

If this specific exemption is approved by EPA, TDA Pesticide Enforcement Specialists will make random, unannounced calls on both growers and applicators to check for compliance with the provisions of this specific exemption. If violations are discovered, the violators will be prosecuted and fined in accordance with the severity of the violations.

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

Not applicable to the state of Texas.

Section 166.20(b)(1): Name of the pest complex.

Broadleaf weeds such as sunflower, kochia, etc, etc.

Section 166.20(b)(2): Events which led to the emergency conditions.

See section 8 for letters from Drs. Dave Weaver and Brent Bean for a description of the events which led to this emergency condition.

Section 166.20(b)(4): Anticipated economic loss.

(i) Historical net and gross revenues.

The average yield of non-irrigated wheat for the historical period in question was 24.6 bushels per acre. During the same period the average price of wheat was $3.30 per bushel. Average gross revenue was therefore, $81.19. During the same period net revenues ranged from a negative $11.10 per acre to a positive $42.87 per acre. Average net revenue for the historical period was $2.77 per acre.

(ii,iii) Net and gross revenues with and without the availability of Ally Herbicide.

See section 9 of this application for Dr. Steve Ammosson's economic impact analysis of making Ally Herbicide available as a pre-harvest aid in non-irrigated wheat.

HARVEST AID USAGE

Apply "Ally" + surfactant. Surfactant rate is 1 qt/100 gal of spray solution. For best results, use a surfactant having 80% or more active ingredient.

This application will typically cause dessication of the broadleaf weeds listed below, thereby aiding grain harvest.

Avoid postemergence applications to weeds which are not actively growing due to adverse weather conditions such as drought stress.

USE RATES

Apply "Ally" at 1/10 oz/A. Include a surfactant at 1 qt per 100 gal of spray solution. Always mix "Ally" in water prior to adding surfactant.

Flixweed
Common purslane
+Kochia
Lambsquarters - common and slimleaf
Marestail
Pigweed - redroot and tumble
+Prickly lettuce
+Russian Thistle
Sunflower - common and wild
Tansymustard
Treacle mustard

+Naturally-occurring resistant biotypes of these weeds are known to occur in the Central Plains. If resistant biotypes are present, harvest aid results may not be adequate.

See "Ally" product label for additional information.

CROP ROTATION INTERVALS

Rotational guidelines should be referred to on the current "Ally" product label before "Ally" treated land is planted to other crops as certain crops may be injured by the herbicide residue in the soil.

PRECAUTIONS

The Texas Department of Agriculture shall be immediately informed of any adverse affects resulting from the above noted use of "Ally" herbicide as authorizee by this crisis exemption.

Do NOT feed treated straw to livestock or graze treated stubble.

Do NOT apply "Ally" as a preharvest treatment to a crop that has been previously treated in the same growing season with "Ally", Express[1], Glean[1], "Glean" Fertilizer Compatible or Harmony[1] Extra.

Do NOT use more than 1/10 oz/A of "Ally" in a 22-month period.

Do NOT apply where runoff in likely to occur.

Metsulfuron methyl, the active ingredient in "Ally", has the potential to contaminate groundwater at very low concentrations. Users are advised not to apply "Ally" in areas where groundwater is vulnerable to contaminaion (i.e. shallow groundwater overlain by soils having high hydraulic conductivity or high recharge conditions.)

Because cultivars of cereals differ in their tolerance to herbicides, limit the first use of "Ally" to a small area prior to adoption as a field practice.

Applications made prior to soft dough may result in crop injury including reduction of yield.

NOTE: Do not allow spray to drift onto adjacent crops, or onto agricultural land scheduled to be planted to crops other than wheat or grasslands for the CRP program, as injury to the crop may occur. Extreme care must be taken to prevent drift onto desirable plants or nontarget agricultural land.

IMPORTANT

BEFORE USING "ALLY", READ AND CAREFULLY OBSERVE THE CAUTIONARY STATEMENTS AND ALL OTHER INFORMATION APPEARING ON THE PRODUCT LABEL.

These directions for use must be in the possession of the user at the time of pesticide application.

[1] Registered trademark of E.I. du Pont de Nemours and Company, (Inc.)

Registrant:
E.I. du Pont de Nemours and Company, (Inc.)
Agricultural Products Department
Wilmington, DE 19898

TEXAS FIELD CROP STATISTICS

Compiled by
TEXAS AGRICULTURAL STATISTICS SERVICE

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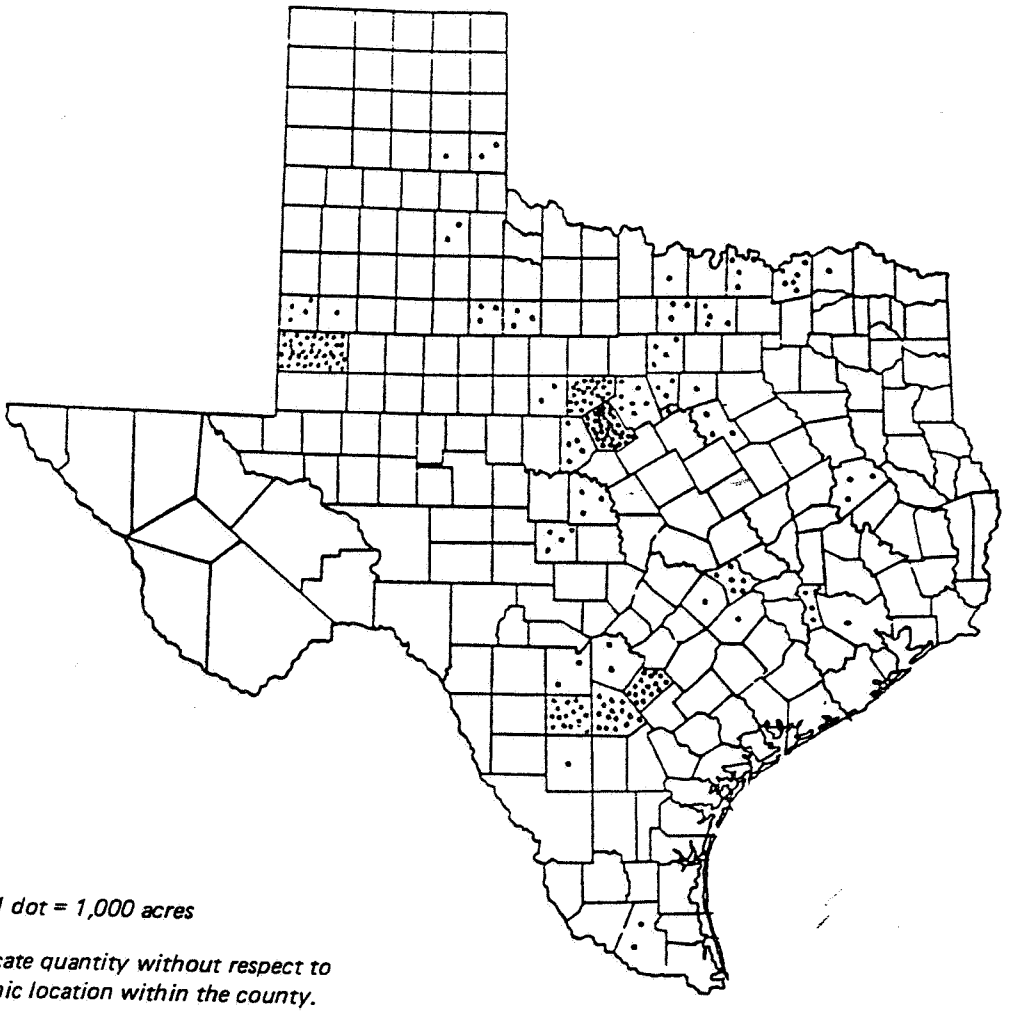
TEXAS DEPARTMENT OF AGRICULTURE U. S. DEPARTMENT OF AGRICULTURE

PEANUTS

Acres Planted For All Purposes



1 dot = 1,000 acres

Dots indicate quantity without respect to geographic location within the county.

LEADING COUNTIES IN PRODUCTION

Rank	County	1984 production	Percent of state
		1,000 pounds	
1	Gaines	78,239	21.1
2	Frio	48,824	13.1
3	Atascosa	38,614	10.4
4	Comanche	38,438	10.4
5	Eastland	23,710	6.4
6	Wilson	15,385	4.1
7	Erath	12,910	3.5
8	Mason	12,680	3.4
9	Yoakum	8,577	2.3
10	Fannin	7,323	2.0

Rank	County	1985 production	Percent of state
		1,000 pounds	
1	Gaines	111,220	26.3
2	Comanche	41,216	9.8
3	Frio	37,700	8.9
4	Atascosa	34,236	8.1
5	Eastland	27,374	6.5
6	Wilson	19,800	4.7
7	Yoakum	13,950	3.3
8	Mason	11,980	2.8
9	Erath	11,358	2.7
10	Haskell	10,710	2.5