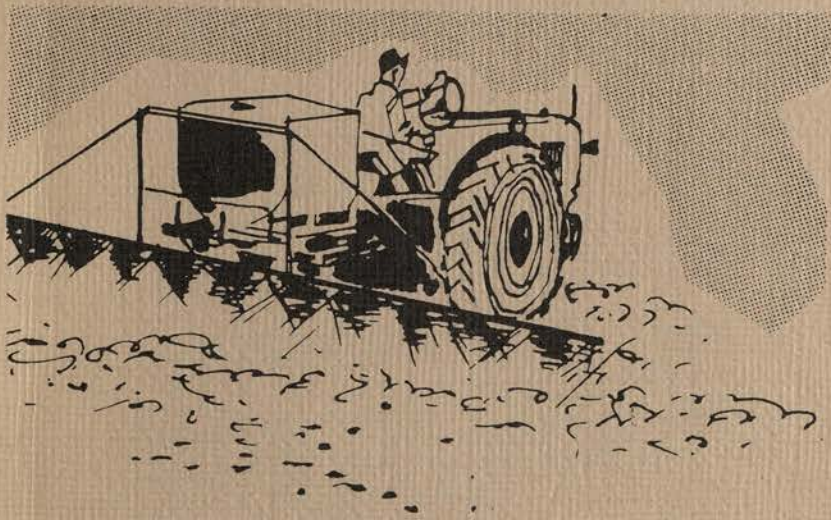


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Keeping Up with Research No. 1

Report of 1973 Herbicide Data



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AGRICULTURAL EXPERIMENT STATION
Floyd W. Smith, director

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Keeping Up with Research No. 1

Report of 1973 Herbicide Data

OLIVER G. RUSS, Weed Control Research
Agronomist, Department of Agronomy

Contribution No. 1412, Department of Agronomy

The information in this report is for the purpose of informing cooperators in industry, colleagues at the University, producers, and other interested persons of the results of the 1973 field evaluation of herbicides for weed control in corn, grain sorghum, and soybeans. Information herein does not constitute a recommendation or endorsement. Weed control suggestions may be found in Report of Progress 205, "Chemical Weed Control in Field Crops 1974".

Special acknowledgement and thanks are due to the following for their support of these programs.

Amchem Products, Inc.
BASF Wyandotte Corporation
Chemagro Corporation
Chipman Chemical Company, Inc.
CIBA-Geigy Corporation
Diamond Shamrock Company
Elanco Products Company
E. I. DuPont De Nemours and Company
Gulf Oil Chemical Company
Hercules Incorporated
Mobil Chemical Company
Monsanto Chemical Company
NOR-AM Agricultural Products, Inc.
Shell Chemical Company
Stauffer Chemical Company
Uniroyal
US Borax Research Corporation
Velsicol Chemical Corporation

We wish to express our appreciation to those individuals
whose efforts and cooperation made this work possible.

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- D. M. Gronau - Newton
- C. W. Knight - Ottawa
- N. E. Humburg - Rossville/Topeka
- W. A. Moore - Hutchinson
- R. J. Raney - Scandia
- R. F. Sloan - Powhattan
- D. J. Bonne - Minneola
- G. R. TenEyck - St. John

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- J. E. Bozarth
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Weed Control Research Plot Data

1. Location: Powhattan Cooperator: R. F. Sloan
2. Soil: Texture Silty Clay Loam pH 6.0 Organic Matter 2.8
3. Planting: Date 5/23/73 Rate 1 seed every 11" Depth 1.5"
4. Crop Corn Variety Pioneer 3369A
5. Fertilizer Applied: N 145 P 35 K none
Surface soil
6. Seedbed Condition: () Excellent () Fair () Poor (X) dry & cloddy
7. Replications 3 Plot Size 10 ft. x 30 ft.
8. Gallons of Spray per Acre 30 Carrier: (X) Water () Fert.
9. Date Herbicide Applied: Preplant Incorporated 5/22/73
Preemergent 5/22/73 Early Post 6/5/73
10. Precipitation after planting: 5/27 - 1.19 5/28 - .05
5/29 - .06 5/30 - .29 6/3 - .60
6/4 - .96 6/5 - .19 6/13 - .41
11. Date of Crop Injury Rating 6/10/73; Weed Control Rating 10/8/73
12. Crop Maturity (Silking, 50% headed, etc.) _____
13. Date Harvested 10/16/73
14. Summary: (Weed Control - predominant species, etc.)
Weed control was generally poor due probably to the cloddy condition of the seedbed. Not cultivated. Predominant broadleaves were pigweeds, an occasional sunflower and velvetleaf. Broadleaves few in number even in no treatment plots. Grasses were predominantly giant foxtail and fall panicum with foxtail the more prevalent of the two.
15. Summary: (Crop Injury - stand reduction, stunting, chlorosis, etc.)
None observed except in the Modown plots where some leaf burning occurred and transverse band of puckering across the leaf. This crinkling persisted through most of the season. Not all plants affected--35-40%. This apparently had little influence on the yield. Injury ratings were 0 = none, 5 = very severe.
16. Summary: (Crop Yield)
Yields were quite good considering the rather low plant populations and poor weed control. 50 plants per harvest area is equal to 14,520 plants per acre. There appeared to be a fairly strong correlation between plant population and yield.

KANSAS STATE UNIVERSITY
AGRONOMY DEPARTMENT

HERBICIDE PERFORMANCE
CORN 1973
POWHATTAN

NO. TREATMENT	LBS. A.I. PER A.	WHEN* APPLIED	BU. PER A.	WEED CONTROL RATING**		CROP*** INJURY
				BROADLEAF	GRASSY	
1. SUTAN + ATRAZINE	3.0 + 1.0	PPI	107.7	9.8	5.0	0.0
2. SUTAN	4.0	PPI	110.0	9.8	4.7	0.0
3. FOX 4 + SUTAN	.75 + 3.0	PPI	119.3	9.9	5.0	0.0
4. BLADEX + SUTAN	1.4 + 2.0	PPI	121.3	9.9	3.3	0.0
5. LASSO + ATRAZINE	2.0 + 1.5	PPI	126.0	9.9	5.2	0.0
6. ERADICANE + ATRAZINE	4.0 + 1.0	PPI	129.0	10.0	9.2	0.0
7. MODDOWN	2.0	PRE	104.0	10.0	2.7	2.0
8. LOROX + LASSO	1.0 + 1.5	PRE	111.0	9.9	8.5	0.0
9. LASSO	2.0	PRE	112.7	9.9	9.4	0.0
10. MODDOWN + LASSO	1.25 + 1.5	PRE	113.0	10.0	8.8	1.0
11. BLADEX + RAMROD	1.4 + 3.0	PRE	115.7	9.9	8.7	0.0
12. BLADEX + ATRAZINE	1.2 + 1.2	PRE	115.7	10.0	2.7	0.0
13. ROWTATE A	4.8	PRE	119.0	10.0	9.2	0.0
14. ATRAZINE	2.4	PRE	120.0	10.0	3.0	0.0
15. AMIBEN + ATRAZINE	.75 + 1.5	PRE	120.3	10.0	3.7	0.0
16. BLADEX	3.0	PRE	121.7	9.9	3.7	0.0
17. LASSO + ATRAZINE	1.5 + 1.5	PRE	124.3	10.0	8.0	0.0
18. ROWTATE + LASSO	1.5 + 1.5	PRE	125.3	10.0	9.0	0.0
19. RAMROD/ATRAZINE	4.14	PRE	126.0	10.0	9.0	0.0
20. BLADEX + LASSO	1.4 + 1.5	PRE	132.7	10.0	9.4	0.0
21. ATRAZINE + OIL (GAL)	2.0 + 1.0	EP	104.3	10.0	2.3	0.0
22. OUTFOX 4L	.75	EP	115.0	10.0	3.3	1.0
23. LASSO + ATRAZINE	2.0 + 1.0	EP	118.7	10.0	6.5	0.0
24. NO TREATMENT			97.3	0.0	0.0	0.0
25. HAND WEED			121.0	10.0	10.0	0.0
TEST AVERAGES			117.2	9.6	6.0	0.2
L.S.D. (.05)			17.1	0.1	1.7	0.0

* WHEN APPLIED: PPI (PREPLANT INCORPORATED)
PRE (COMPLETE COVERAGE IMMEDIATELY AFTER PLANTING)
EP (EARLY POST)

** WEED CONTROL RATING: 10 - COMPLETE CONTROL
0 - NO CONTROL

*** CROP INJURY RATING: 10 - COMPLETE KILL
0 - NO INJURY

Weed Control Research Plot Data

1. Location: Powhattan Cooperator: R. F. Sloan
2. Soil: Texture Silty clay loam pH 5.8 Organic Matter 2.8
3. Planting: Date May 24, 1973 Rate 18,750 kernels Depth 1 1/2"
4. Crop Corn Variety Pioneer 3369A
5. Fertilizer Applied: N 70 P 0 K 0
Dry and
6. Seedbed Condition: () Excellent () Fair (X) Poor () very cloddy
7. Replications 3 Plot Size 4 30" rows x 30'
8. Gallons of Spray per Acre 20 Carrier: () Water (X) Fert.
32% N Sol.
9. Date Herbicide Applied: Preplant Incorporated none
6/5 - spike
Preemergent 5/24 Early Post 6/9 - 3 leaf 6/18 - 6 lf.
10. Precipitation after planting: 5/27 - 1.19" 5/28 - .05" 5/29 - .06"
5/30 - .29" 6/3 - .60" 6/4 - .96" 6/5 - .19" 6/13 - .41"
11. Date of Crop Injury Rating --; Weed Control Rating 10/18
12. Crop Maturity (silking, 50% headed, etc.) _____
13. Date Harvested 10/18
14. Summary: (Weed Control - predominant species, etc.) 1 cultivation
Broadleaf control excellent. Grass control very poor especially when treated in the 3- and 6-leaf stages. Predominant grass was giant fox-tail with just a little panicum and crabgrass.
15. Summary: (Crop Injury - stand reduction, stunting, chlorosis, etc.)
Treatments 6, 11, and 15 applied in water preemerge and the N sol. added later at proper stage of growth. Treatment 1 was in N sol. applied preemerge. The spike stage treatment was actually at the 1- to 2-leaf stage on account of wet fields at the time the corn was in the spike.
Injury was especially noteworthy when treated in the 6-leaf stage with considerable burning occurring in the AAtrex-Lasso and Outfox plots at the 3-leaf stage. Outfox also caused noticeable stunting of the crop particularly in the 6-leaf stage, but with no loss of plants.
16. Summary: (Crop Yield)
Yields were rather erratic with the 2nd rep having the highest yields quite consistently. Plot 301 and 302 were on an area that got no N during the years 1958 through 1968 and the corn appeared to be quite deficient in N. These plots were on the same area as in 1972.

KANSAS STATE UNIVERSITY
AGRONOMY DEPARTMENT

HERBICIDE NITROGEN SOLUTIONS
CORN 1973
POWHATTAN

NO. TREATMENT	LBS. A.I. PER A.	WHEN* APPLIED	BU. PER A.	WEED CONTROL RATING**		CROP*** INJURY
				BROADLEAF	GRASSY	
1. OUTFOX	.50	PRE	102.0	10.0	8.0	0.0
2. ATRAZINE	1.0	PRE	105.3	10.0	9.0	0.0
3. ATRAZINE + LASSO	1.0 + 2.0	PRE	107.3	10.0	9.8	0.0
4. ATRAZINE	2.0	PRE	109.0	10.0	9.5	0.0
5. HAND WEED (NITROGEN)		PRE	113.0	10.0	10.0	0.0
6. OUTFOX	.50	SPI	100.7	10.0	8.5	2.0
7. ATRAZINE	1.0	SPI	114.3	10.0	8.2	0.0
8. ATRAZINE	2.0	SPI	115.0	10.0	9.5	0.0
9. HAND WEED		SPI	115.7	10.0	10.0	0.0
10. ATRAZINE + LASSO	1.0 + 2.0	SPI	122.7	10.0	10.0	1.0
11. ATRAZINE	1.0	3-L	86.3	10.0	5.8	0.3
12. OUTFOX	.50	3-L	96.0	10.0	8.8	2.0
13. ATRAZINE	2.0	3-L	100.0	10.0	7.5	0.0
14. HAND WEED		3-L	106.0	10.0	10.0	0.0
15. ATRAZINE + LASSO	1.0 + 2.0	3-L	113.3	10.0	9.8	1.0
16. HAND WEED		6-L	107.3	10.0	9.8	3.7
17. ATRAZINE	1.0	6-L	89.3	10.0	2.7	3.3
18. ATRAZINE	2.0	6-L	88.3	10.0	2.7	3.7
19. ATRAZINE + LASSO	1.0 + 2.0	6-L	90.3	10.0	4.3	4.0
20. OUTFOX	.50	6-L	88.7	10.0	1.7	4.0
TEST AVERAGES			103.5	10.0	7.8	1.2
L.S.D. (.05)			21.6	0.0	1.3	0.4

* WHEN APPLIED: PRE (COMPLETE COVERAGE AFTER PLANTING)
SPI SPIKE STAGE
3-L 3 LEAF STAGE
6-L 6 LEAF STAGE

** WEED CONTROL RATING: 10 - COMPLETE CONTROL
0 - NO CONTROL

*** CROP INJURY RATING: 10 - COMPLETE KILL
0 - NO INJURY

Weed Control Research Plot Data

1. Location: Manhattan, Kansas Cooperator: Oliver G. Russ, KSU
2. Soil: Texture Reading SL pH 6.6 Organic Matter 2.5
3. Planting: Date 5/12/73 Rate 1 seed every 11" Depth 2.0"
4. Crop Corn Variety Pioneer 3369A
5. Fertilizer Applied: N 140 P 100 K none
6. Seedbed Condition: (X) Excellent () Fair () Poor () _____
7. Replications 3 Plot Size 10 ft. x 30 ft.
8. Gallons of Spray per Acre 20 Carrier: (X) Water () Fert.
9. Date Herbicide Applied: Preplant Incorporated 5/11/73
 Preemergent 5/12/73 Early Post 5/25/73
10. Precipitation after Planting: 5/22-.84 6/3 - .28
6/4 - 1.65 6/5 - .15 6/6 - .11
6/13 - .92 6/21 - .05 6/27 - .32
11. Date of Crop Injury Rating 6/15/73; Weed Control Rating 6/15/73
12. Crop Maturity (Silking, 50% headed, etc.) _____
13. Date Harvested 10/24/73
14. Summary: (Weed Control - predominant species, etc.)
 The plot area was overseeded with alfalfa screenings. The predominant weeds included pigweed, velvetleaf, morningglory, crabgrass, foxtail spp. and three seeded mercury. Weed control was generally better with the preplant incorporated treatments.
15. Summary: (Crop Injury - stand reduction, stunting, chlorosis, etc.)
 Sencor applied preplant incorporated injured the corn severely. When Sencor was applied preemergent injury was slight.
16. Summary: (Crop Yield)
 Very good dryland corn production.

KANSAS STATE UNIVERSITY
AGRONOMY DEPARTMENT

HERBICIDE PERFORMANCE
CORN 1973
MANHATTAN

NO. TREATMENT	LBS. A.I. PER A.	WHEN* APPLIED	BU. PER A.	WEED CONTROL RATING**		CROP*** INJURY
				BROADLEAF	GRASSY	
1. SUTAN	4.0	PPI	122.8	9.2	9.5	0.0
2. ERADICANE + ATRAZINE	4.0 + 1.0	PPI	123.3	9.8	9.5	0.3
3. BLADEX + SUTAN	1.4 + 2.0	PPI	124.1	9.7	9.2	0.0
4. FOX 4 + SUTAN	.75 + 3.0	PPI	127.8	9.8	9.5	0.2
5. SUTAN + ATRAZINE	3.0 + 1.0	PPI	128.2	9.7	9.3	0.0
6. LASSO + ATRAZINE	2.0 + 1.5	PPI	128.6	9.7	9.7	0.0
7. MOODOWN + LASSO	1.25 + 1.5	PRE	115.2	8.5	9.5	0.3
8. ROWTATE + LASSO	1.5 + 1.5	PRE	118.7	9.2	9.5	0.0
9. BLADEX + LASSO	1.4 + 1.5	PRE	119.1	9.3	9.3	0.0
10. RAMROD/ATRAZINE	4.14	PRE	120.3	9.3	9.3	0.0
11. ROWTATE A	4.8	PRE	121.2	8.7	9.2	0.0
12. LASSO + ATRAZINE	1.5 + 1.5	PRE	122.4	9.7	9.5	0.0
13. BLADEX	3.0	PRE	123.3	9.0	9.5	0.0
14. LASSO	2.0	PRE	124.2	9.0	9.2	0.2
15. BLADEX + RAMROD	1.4 + 3.0	PRE	124.8	9.0	9.5	0.0
16. BLADEX + ATRAZINE	1.2 + 1.2	PRE	125.3	9.5	9.3	0.0
17. ATRAZINE	2.4	PRE	125.3	9.8	9.0	0.0
18. AMIBEN + ATRAZINE	.75 + 1.5	PRE	126.2	9.7	7.3	0.0
19. LOROX + LASSO	1.0 + 1.5	PRE	127.0	9.2	9.5	0.0
20. MOODOWN	2.0	PRE	127.4	9.2	7.8	0.5
21. ATRAZINE + OIL (GAL)	2.0 + 1.0	EP	115.1	9.8	8.8	0.5
22. LASSO + ATRAZINE	2.0 + 1.0	EP	118.7	9.8	9.3	0.2
23. OUTFOX 4L	.75	EP	130.0	9.8	8.8	0.0
24. HAND WEED			124.5	9.3	9.3	0.0
25. NO TREATMENT			93.5	0.0	0.0	0.0
TEST AVERAGES			122.3	9.0	8.8	0.1
L.S.D. (.05)			13.9	0.6	0.8	0.4

* WHEN APPLIED: PRE (COMPLETE COVERAGE IMMEDIATELY AFTER
EP (EARLY POST)
PPI (PREPLANT INCORPORATED) PLANTING)

** WEED CONTROL RATING: 10 - COMPLETE CONTROL
0 - NO CONTROL

*** CROP INJURY RATING: 10 - COMPLETE KILL
0 - NO INJURY

Weed Control Research Plot Data

1. Location: Manhattan, Kansas Cooperator: Oliver G. Russ, KSU
2. Soil: Texture Reading SL pH 6.6 Organic Matter 2.5
3. Planting: Date 5/23/73 Rate 1 seed every 6" Depth 2.0"
4. Crop Corn Variety Pioneer 3369A
5. Fertilizer Applied: N 210 P 100 K none
6. Seedbed Condition: (X) Excellent () Fair () Poor () _____
7. Replications 3 Plot Size 10 ft. x 30 ft.
8. Gallons of Spray per Acre 20 Carrier: () Water (X) Fert. 32% N
9. Date Herbicide Applied: Preplant Incorporated _____
 Preemergent 5/23/73 Early Post Spike-5/31, 3-leaf-6/8, 6-leaf-6/15
10. Precipitation after planting: 5/23 - .36 5/29 - .17
6/4 - 1.93 6/5 - .15 6/6 - .11
6/13 - .92 6/21 - .05 6/27 - .32
11. Date of Crop Injury Rating --; Weed Control Rating --
12. Crop Maturity (Silking, 50% headed, etc.) _____
13. Date Harvested 10/26/73
14. Summary: (Weed Control - predominant species, etc.)
 Plot area had good weed control. The area was cultivated twice with Lilliston cultivator and then furrowed for irrigation.
15. Summary: (Crop Injury - stand reduction, stunting, chlorosis, etc.)
 No apparent crop injury where herbicide and nitrogen applied pre-emergent or when corn was in spike stage. All treatments applied in the 3-leaf and 6-leaf stages cause corn leaf burn. Leaf burn was most severe in plots treated with Lasso + Atrazine or Outfox. Corn leaf burn did not influence grain yield.
16. Summary: (Crop Yield)
 The average yield in the plots were below normal. Barren stocks were in all plots. Small ears, rotten cobs, and smut infected stocks contributed to below normal yields.

KANSAS STATE UNIVERSITY
AGRONOMY DEPARTMENT

HERBICIDE NITROGEN SOLUTIONS
CORN 1973
MANHATTAN

10. TREATMENT	LBS. A.I. PER A.	WHEN* APPLIED	BU. PER A.	WEED CONTROL RATING**		CROP*** INJURY
				BROADLEAF	GRASSY	
1. OUTFOX	.50	PRE	109.2	10.0	10.0	0.0
2. ATRAZINE	2.0	PRE	116.8	10.0	10.0	0.0
3. HAND WEED (NITROGEN)		PRE	122.6	10.0	10.0	0.0
4. ATRAZINE + LASSO	1.0 + 2.0	PRE	122.6	10.0	10.0	0.0
5. ATRAZINE	1.0	PRE	130.5	10.0	10.0	0.0
6. ATRAZINE	1.0	SPI	116.6	10.0	10.0	0.0
7. HAND WEED		SPI	119.7	10.0	10.0	0.0
8. ATRAZINE + LASSO	1.0 + 2.0	SPI	121.0	10.0	10.0	0.0
9. ATRAZINE	2.0	SPI	123.9	10.0	10.0	0.0
10. OUTFOX	.50	SPI	131.6	10.0	10.0	0.0
1. ATRAZINE + LASSO	1.0 + 2.0	3-L	112.9	10.0	10.0	0.0
2. ATRAZINE	2.0	3-L	117.3	10.0	10.0	0.0
3. HAND WEED		3-L	118.1	10.0	10.0	0.0
4. OUTFOX	.50	3-L	121.8	10.0	10.0	0.0
5. ATRAZINE	1.0	3-L	125.0	10.0	10.0	0.0
6. HAND WEED		6-L	121.8	10.0	10.0	0.0
7. ATRAZINE	1.0	6-L	120.2	10.0	10.0	0.0
8. ATRAZINE	2.0	6-L	124.4	10.0	10.0	0.0
9. ATRAZINE + LASSO	1.0 + 2.0	6-L	116.2	10.0	10.0	0.0
10. OUTFOX	.50	6-L	118.1	10.0	10.0	0.0
TEST AVERAGES			120.5	10.0	10.0	0.0
L.S.D. (.05)			12.6	0.0	0.0	0.0

* WHEN APPLIED: PRE (COMPLETE COVERAGE AFTER PLANTING)
SPI SPIKE STAGE
3-L 3 LEAF STAGE
6-L 6 LEAF STAGE

** WEED CONTROL RATING: 10 - COMPLETE CONTROL
0 - NO CONTROL

*** CROP INJURY RATING: 10 - COMPLETE KILL
0 - NO INJURY

Weed Control Research Plot Data

1. Location: Scandia (Irrigation) Cooperator: R. J. Raney
2. Soil: Texture Silt Clay pH 5.7 Organic Matter 2.1
3. Planting: Date 5/5/73 Rate 1 seed every 10" Depth 2.0"
4. Crop Corn Variety Pioneer 3149
5. Fertilizer Applied: N 178 P 46 K none
6. Seedbed Condition: () Excellent () Fair () Poor (X) _____
7. Replications 3 Plot Size 10 ft x 30 ft.
8. Gallons of Spray per Acre 20 Carrier: (X) Water () Fert.
9. Date Herbicide Applied: Preplant Incorporated 5/5/73
Preemergent 5/11/73 Early Post 6/13/73
10. Precipitation after planting: 5/73 - 4.41 6/73 - 2.08
7/73 - 8.22 8/73 - 2.30 9/73 - 9.49
11. Date of Crop Injury Rating --; Weed Control Rating 9/5/73
12. Crop Maturity (Silking, 50% headed, etc.) _____
13. Date Harvested 10/31/73
14. Summary: (Weed Control - predominant species, etc.)
Foxtail, crabgrass, pigweed, some kochia
15. Summary: (Crop Injury - stand reduction, stunting, chlorosis, etc.)
Seedbed was prepared on the wet side on April 28. Poor stands, about 70%, so plots were replanted without disturbing seedbed on May 17. Plots were harvested October 31.
16. Summary: (Crop Yield)

KANSAS STATE UNIVERSITY
AGRONOMY DEPARTMENT

HERBICIDE PERFORMANCE
CORN 1973
SCANDIA

NO. TREATMENT	LBS. A.I. PER A.	WHEN* APPLIED	BU. PER A.	WEED CONTROL RATING**		CROP*** INJURY
				BROADLEAF	GRASSY	
1. SUTAN	4.0	PPI	67.7	8.7	4.7	0.0
2. BLADEX + SUTAN	1.4 + 2.0	PPI	81.7	10.0	8.0	0.0
3. LASSO + ATRAZINE	2.0 + 1.5	PPI	83.0	10.0	7.7	0.0
4. EPADICANE + ATRAZINE	4.0 + 1.0	PPI	86.7	10.0	9.3	0.0
5. FOX 4 + SUTAN	.75 + 3.0	PPI	99.0	10.0	9.0	0.0
6. SUTAN + ATRAZINE	3.0 + 1.0	PPI	114.0	10.0	8.7	0.0
7. MDDOWN + LASSO	1.25 + 1.5	PRE	64.7	9.3	6.0	0.0
8. LASSO	2.0	PRE	75.3	8.7	9.0	0.0
9. AMIBEN + ATRAZINE	.75 + 1.5	PRE	80.3	9.7	9.0	0.0
10. BLADEX + RAMROD	1.4 + 3.0	PRE	83.0	9.7	9.0	0.0
11. MDDOWN	2.0	PRF	91.0	10.0	6.3	0.0
12. ROWTATE A	4.8	PRE	96.7	10.0	7.7	0.0
13. LASSO + ATRAZINE	1.5 + 1.5	PRE	99.0	10.0	7.7	0.0
14. ROWTATE + LASSO	1.5 + 1.5	PRE	102.0	10.0	9.3	0.0
15. ATRAZINE	2.4	PRE	105.7	10.0	7.0	0.0
16. BLADEX	3.0	PRF	107.0	9.7	7.3	0.0
17. LOROX + LASSO	1.0 + 1.5	PRE	110.0	9.7	9.3	0.0
18. BLADEX + LASSO	1.4 + 1.5	PRE	111.3	9.7	7.3	0.0
19. RAMROD/ATRAZINE	4.14	PRE	112.7	10.0	8.7	0.0
20. BLADEX + ATRAZINE	1.2 + 1.2	PRE	115.3	9.3	8.7	0.0
21. ATRAZINE + OIL (GAL)	2.0 + 1.0	EP	61.7	10.0	4.3	0.0
22. LASSO + ATRAZINE	2.0 + 1.0	EP	82.0	10.0	7.0	0.0
23. OUTFOX 4L	.75	EP	91.3	10.0	6.3	0.0
24. NO TREATMENT			107.7	8.0	5.7	0.0
25. HAND WEED			79.7	10.0	6.0	0.0
TEST AVERAGES			92.3	9.7	7.6	0.0
L.S.D. (.05)			41.1	1.2	4.8	0.0

* WHEN APPLIED: PRE (COMPLETE COVERAGE IMMEDIATELY AFTER PLANTING)
PPI (PREPLANT INCORPORATED)
EP (EARLY POST)

** WEED CONTROL RATING: 10 - COMPLETE CONTROL
0 - NO CONTROL

*** CROP INJURY RATING: 10 - COMPLETE KILL
0 - NO INJURY

Herbicide Performance
Weed Control Research Plot Data
Corn

1. Location: Topeka Cooperator: Neil Humburg and L. S. Axthelm
2. Soil: Texture Eudora SL pH 7.3 Organic Matter 1.0
3. Planting: Date 5/4/73 Rate c. 18,000 pl/A Depth 2"
4. Crop Corn Variety Pioneer var. 3369A
5. Fertilizer Applied: N 200 P 80 P₂O₅ K 0
6. Seedbed Condition: (X) Excellent () Fair () Poor () _____
7. Replications three Plot Size 4 rows (30") x 30 ft
8. Gallons of spray per acre 20 Carrier: (X) Water () Fert.
9. Date Herbicide Applied: Preplant Incorporated 5/4/73
Preemergent 5/4/73 Early Post 5/24/73
10. Precipitation after planting: 5/5 - 0.34" 5/6 - 1.18" 5/7 - 0.01"
5/9 - 0.01" 5/11 - 0.22" 5/19 - T 5/21 - .80" 5/22 - .17"
5/26 - 1.60" 5/27 - T 5/28 - T 5/29 - .03" 6/1 - T
6/2 - 0.01" 6/3 - 1.18" 6/4 - 0.39" 6/5 - .05" 6/12 - T
11. Date of crop injury rating 5/29/73; weed control rating 8/27/73
corn 8"
12. Crop maturity (Silking, 50% headed, etc.) corn height 9 ft
13. Date harvested 11/2/73
14. Summary: (Weed Control - predominant species, etc.)
Predominant weed species: sunflower and foxtail. Some pigweed, giant foxtail, and lambsquarter. Weed populations in plot area (which was not cultivated in 1972) were high. Herbicide rates generally were higher than recommended for a 1.0% OM soil; weed control was generally excellent. Many preplant-incorporated herbicide plots had some weeds, vis. foxtail, about 3" from corn rows as a result of soil disturbance at planting. Moderate to dense sunflower stands shaded other weeds, especially foxtail.
15. Summary: (Crop Injury - stand reduction, stunting, chlorosis, etc.)
No injury resulted from higher-than-normally-recommended herbicide rates for a 1.0% OM soil. Modown caused a necrotic band across corn leaves, being most evident when corn was 6" to 24" tall; sunflower leaves also were injured. Modown injury to corn and sunflowers was temporary. Corn in Rowtate and Rowtate A plots was stunted and slightly chlorotic, with stunting observed until July.
16. Summary: (Crop Yield)
Soil moisture throughout the season was adequate although plots were not irrigated. Thin weed stands did not significantly reduce yields. Sunflowers markedly lowered yields in Sutan, Lasso, Lorox + Lasso, Modown, and Modown + Lasso plots.

KANSAS STATE UNIVERSITY
AGRONOMY DEPARTMENT

HERBICIDE PERFORMANCE
CORN 1973
KANSAS RIVER VALLEY

NO. TREATMENT	LBS. A.I. PER A.	WHEN* APPLIED	RJ. PER A.	WEED CONTROL RATING**		CROP*** INJURY
				BROADLEAF	GRASSY	
1. SUTAN	4.0	PPI	79.7	2.7	8.8	0.0
2. EPADICANE + ATRAZINE	4.0 + 1.0	PPI	137.7	9.5	8.8	0.0
3. LASSO + ATRAZINE	2.0 + 1.5	PPI	141.0	10.0	6.7	0.0
4. FOX 4 + SUTAN	.75 + 3.0	PPI	141.3	9.7	9.3	0.0
5. BLADEX + SUTAN	1.4 + 2.0	PPI	148.0	8.0	7.7	0.0
6. SUTAN + ATRAZINE	3.0 + 1.0	PPI	156.7	9.3	9.2	0.0
7. MDDOWN	2.0	PRE	76.3	1.0	7.3	0.0
8. LASSO	2.0	PRE	86.3	3.3	8.0	0.0
9. MDDOWN + LASSO	1.25 + 1.5	PRE	92.7	4.7	8.3	0.0
10. LOROX + LASSO	1.0 + 1.5	PRE	111.7	4.3	8.3	0.0
11. AMIBEN + ATRAZINE	.75 + 1.5	PRE	125.7	10.0	9.0	0.0
12. BLADEX + LASSO	1.4 + 1.5	PRE	139.3	9.7	8.7	0.0
13. ROWTATE A	4.8	PRE	142.3	8.0	2.0	0.0
14. BLADEX + RAMROD	1.4 + 3.0	PRE	143.0	8.0	7.8	0.0
15. RAMROD/ATRAZINE	4.14	PRE	144.0	10.0	9.2	0.0
16. BLADEX + ATRAZINE	1.2 + 1.2	PRE	144.7	9.5	8.5	0.0
17. BLADEX	3.0	PRE	149.3	8.3	9.2	0.0
18. ROWTATE + LASSO	1.5 + 1.5	PRE	153.3	8.3	5.3	0.0
19. LASSO + ATRAZINE	1.5 + 1.5	PRE	155.0	10.0	9.3	0.0
20. ATRAZINE	2.4	PRE	161.0	10.0	9.2	0.0
21. LASSO + ATRAZINE	2.0 + 1.0	EP	135.3	9.5	5.3	0.0
22. BUTFOX 4L	.75	EP	149.0	9.7	7.8	0.0
23. ATRAZINE + OIL (GAL)	2.0 + 1.0	EP	152.0	10.0	9.3	0.0
24. HAND WEED			166.7	10.0	9.3	0.0
25. NO TREATMENT			51.3	0.0	0.0	0.0
TEST AVERAGES			131.3	7.7	7.7	0.0
L.S.D. (.05)			25.7	1.5	2.0	0.0

* WHEN APPLIED: PPI (PREPLANT INCORPORATED)
PRE (COMPLETE COVERAGE IMMEDIATELY AFTER PLANTING)
EP (EARLY POST)

** WEED CONTROL RATING: 10 - COMPLETE CONTROL
0 - NO CONTROL

*** CROP INJURY RATING: 10 - COMPLETE KILL
0 - NO INJURY

Weed Control Research Plot Data

1. Location: Manhattan, Kansas Cooperator: Oliver G. Russ
2. Soil: Texture Reading SL pH 6.6 Organic Matter 2.5
3. Planting: Date 5/13/73 Rate 1 seed every 11" Depth 2.0"
4. Crop Corn Variety Pioneer 3369A
5. Fertilizer Applied: N 140 P 100 K none
6. Seedbed Condition: (X) Excellent () Fair () Poor () _____
7. Replications 3 Plot Size 10 ft. x 50 ft.
8. Gallons of Spray per Acre 20 Carrier: (X) Water () Fert.
9. Date Herbicide Applied: Preplant Incorporated 5/15/73
 Preemergent -- Early Post --
10. Precipitation after planting: 5/22 - .36 5/23 - .48
5/29 - .17 6/3 - .28 6/4 - 1.65
6/5 - .15 6/6 - .11 6/13 - .92
11. Date of Crop Injury Rating --; Weed Control Rating --
12. Crop Maturity (Silking, 50% headed, etc.) _____
13. Date Harvested --
14. Summary: (Weed Control - predominant species, etc.)
 Plot area was overseeded with wild cane seed providing a heavy population. Predominant weed species present were wild cane and some foxtail spp., pigweed, velvetleaf, and morningglory.
15. Summary: (Crop Injury - stand reduction, stunting, chlorosis, etc.)
 No apparent injury occurred from herbicide treatments.
16. Summary: (Crop Yield)
 Grain yields were about normal for Kansas.

KANSAS STATE UNIVERSITY
AGRONOMY DEPARTMENT

WILD CANE CONTROL
CORN 1973
MANHATTAN

NO. TREATMENT	LBS. A.I. PER A.	WHEN* APPLIED	BU. PER A.	WEED CONTROL RATING**		CROP*** INJURY
				BROADLEAF	GRASSY	
1. SIMAZINE	4.0	PPI	103.3	8.3	5.0	0.0
2. PREFDX	4.75	PPI	104.2	7.0	7.2	0.0
3. SUTAN + ATR. (PROT.)	4.0 + 1.0	PPI	105.4	6.0	6.8	0.0
4. EPTAM + ATR. (PROT.)	4.0 + 1.0	PPI	110.4	8.2	9.3	0.2
5. SUTAN A + ATRAZINE	4.0 + 1.0	PPI	112.3	8.2	8.5	0.0
6. ERADICANE + ATRAZINE	6.0 + 1.0	PPI	117.3	9.5	9.5	0.2
7. SUTAN + ATRAZINE	4.0 + 1.0	PPI	118.0	8.5	8.0	0.0
8. EPTAM + ATRAZINE	4.0 + 1.0	PPI	118.5	7.8	9.3	0.0
9. ERADICANE + ATRAZINE	4.0 + 1.0	PPI	123.6	7.2	9.2	0.0
10. NO TREATMENT			76.2	0.0	0.0	0.0
TEST AVERAGES			108.9	7.1	7.3	0.0
L.S.D. (.05)			14.0	2.7	2.3	0.2

* WHEN APPLIED: PPI (PREPLANT INCORPORATED)

** WEED CONTROL RATING: 10 - COMPLETE CONTROL
0 - NO CONTROL

*** CROP INJURY RATING: 10 - COMPLETE KILL
0 - NO INJURY

Herbicide Performance
Weed Control Research Plot Data
Wild Cane Control
Corn

1. Location: Rossville Cooperator: Neil Humburg and L. S. Axthelm
2. Soil: Texture Eudora SL pH 5.8 Organic Matter 1.9
3. Planting: Date 5/24/73 Rate 23,700 p1/A Depth 2"
4. Crop Corn (yellow) Variety Pioneer var. 3369 A
5. Fertilizer Applied: N 208 P 32 P₂O₅ K 16 K₂O
6. Seedbed Condition: (X) Excellent () Fair () Poor () _____
7. Replications 4 Plot Size 4 rows (30") x 100 ft
8. Gallons of Spray per Acre 20 Carrier: (X) Water () Fert.
9. Date Herbicide Applied: Preplant Incorporated 5/17/73
Preemergent none Early Post none
10. Precipitation after planting: 5/27 - 0.37" 5/28 - 0.06" 6/2 - 0.03"
6/4 - 0.68" 6/5 - 0.27" 6/13 - 0.11" 6/14 - 0.08" 6/27 - 0.18"
7/3 - 0.75" Irrigation: 6/21 - 2.10" 6/30 - 2.09" 7/6 - 1.82"
7/13 - 4.76"
11. Date of Crop Injury Rating --; Weed Control Rating 7/11/73
12. Crop Maturity (Silking, 50% headed, etc.) Corn height 4.5 - 6.0 ft.
13. Date Harvested 10/24/73
14. Summary: (Weed Control - predominant species, etc.)

Predominant weed species: wild cane (natural, heavy infestation with overseeding 5/17/73). Excellent control with Eradicane + atrazine at 4 lb AI/A + 1 lb AI/A and 6 + 1 rates, Eptam + atrazine at 4 + 1, Eptam + atrazine at 4 + 1 with Protect, and Sutan + atrazine at 4 + 1 with Protect. Good control with Sutan + atrazine at 4 + 1, and Sutan "A" + atrazine at 4 + 1. Fair control with Prefox at 4 qt/A and Simazine at 4 lb AI/A. Weed species present but not competitive: crabgrass, yellow foxtail, smartweed, morningglory and climbing milkweed.

15. Summary: (Crop Injury - stand reduction, stunting, chlorosis, etc.)
No corn injury was observed.

16. Summary: (Crop Yield)

Grain yields were not significantly different among herbicide treatments. The untreated control-plot yields were 36 to 46% of herbicide-treated plots. Crop yields were very low, primarily as a result of compaction from land leveling in 1972.

KANSAS STATE UNIVERSITY
AGRONOMY DEPARTMENT

WILD CANE CONTROL
CORN 1973
KANSAS RIVER VALLEY

NO. TREATMENT	LBS. A.I. PER A.	WHEN* APPLIED	BU. PER A.	WEED CONTROL RATING**		CROP*** INJURY
				BROADLEAF	GRASSY	
1. SUTAN + ATRAZINE	4.0 + 1.0	PPI	50.4	10.0	8.0	0.0
2. SUTAN + ATR. (PROT.)	4.0 + 1.0	PPI	50.5	10.0	9.0	0.0
3. PREFOX	4.75	PPI	51.0	10.0	6.3	0.0
4. ERADICANE + ATRAZINE	6.0 + 1.0	PPI	52.8	10.0	9.8	0.0
5. SUTAN A + ATRAZINE	4.0 + 1.0	PPI	54.3	10.0	8.3	0.0
6. SIMAZINE	4.0	PPI	54.3	10.0	6.3	0.0
7. EPTAM + ATR. (PROT.)	4.0 + 1.0	PPI	55.7	10.0	9.5	0.0
8. EPTAM + ATRAZINE	4.0 + 1.0	PPI	60.0	10.0	9.5	0.0
9. ERADICANE + ATRAZINE	4.0 + 1.0	PPI	62.5	10.0	10.0	0.0
10. NO TREATMENT			22.8	0.0	0.0	0.0
TEST AVERAGES			51.4	9.0	7.6	0.0
L.S.D. (.05)			13.0	0.0	1.9	0.0

* WHEN APPLIED: PPI (PREPLANT INCORPORATED)

** WEED CONTROL RATING: 10 - COMPLETE CONTROL
0 - NO CONTROL

*** CROP INJURY RATING: 10 - COMPLETE KILL
0 - NO INJURY

Weed Control Research Plot Data

1. Location: Manhattan, Kansas Cooperator: Oliver G. Russ, KSU
2. Soil: Texture Reading SL pH 6.6 Organic Matter 2.5
3. Planting: Date 5/25/73 Rate 10 beans/ft. of row Depth 2.0"
4. Crop Soybeans Variety Clark 63
5. Fertilizer Applied: N 40 P 100 K none
6. Seedbed Condition: (X) Excellent () Fair () Poor () _____
7. Replications 3 Plot Size 10 ft. x 30 ft.
8. Gallons of Spray per Acre 20 Carrier: (X) Water () Fert.
9. Date Herbicide Applied: Preplant Incorporated 5/24/73
Preemergent 5/25/73 Early Post 6/13/73
10. Precipitation after planting: 5/29 - .17 6/4 - 1.93
6/5 - .15 6/6 - .11 6/13 - .92
6/21 - .05 6/27 - .32 7/14 - 1.65
11. Date of Crop Injury Rating 6/14 ; Weed Control Rating 6/21
12. Crop Maturity (Silking, 50% headed, etc.) _____
13. Date Harvested 10/5/73
14. Summary: (Weed Control - predominant species, etc.)
Plot area was overseeded with alfalfa seed screenings. Predominant weeds were pigweed, velvetleaf, foxtail spp., crabgrass, sunflower, and three seeded mercury. Broadleaf and grassy weed control was generally good in both preemergent and preplant incorporated treatments.
15. Summary: (Crop Injury - stand reduction, stunting, chlorosis, etc.)
Lasso Bladex caused severe injury and a reduction in stand. Sencor applied preplant incorporated caused considerable injury. Moderate injury occurred when Sencor was applied preemergent. Injury from Modown was observed when applied alone or in combination.
16. Summary: (Crop Yield)
Very good soybean production.

KANSAS STATE UNIVERSITY
AGRONOMY DEPARTMENT

PERFORMANCE HERBICIDES
SOYBEAN 1973
MANHATTAN

NO. TREATMENT	LBS. A.I. PER A.	WHEN* APPLIED	BU. PER A.	WEED CONTROL RATING**		CROP*** INJURY
				BROADLEAF	GRASSY	
1. COBEX	.66	PPI	40.2	7.2	7.8	0.3
2. PLANAVIN	1.0	PPI	40.5	6.2	7.7	0.0
3. TRIFLAN + SENCOR	.75 + .38	PPI	41.3	9.2	9.0	0.8
4. VERNAM	3.0	PPI	42.9	8.2	9.0	0.3
5. CGA 10832	1.25	PPI	43.4	6.8	9.0	0.0
6. COBEX	.5	PPI	43.6	7.3	7.5	0.0
7. TRIFLAN	1.0	PPI	46.6	7.8	9.0	0.0
8. SOLD	5QT	PRE	41.0	6.3	2.3	0.0
9. LASSO + BLADEX	2.0 + 1.5	PRE	41.3	9.0	10.0	4.3
10. AMIBEN	3.0	PRE	42.6	9.0	9.0	0.0
11. MODOWN	2.0	PRE	42.9	9.0	4.5	0.5
12. LASSO + MODOWN	1.5 + 1.25	PRE	43.9	9.3	9.5	0.7
13. SOYEX	3.75	PRE	44.0	7.0	8.7	0.3
14. LASSO	2.0	PRE	44.9	8.5	9.8	0.0
15. LASSO + SENCOR	1.5 + .38	PRE	45.7	9.7	9.7	0.0
16. LASSO + MALORAN	1.5 + 1.5	PRE	46.0	8.0	9.7	0.0
17. LASSO + BASAGRAN (EP)	2.0 + .75	PRE	46.0	8.5	9.7	0.0
18. LASSO + LOROX	1.5 + 1.0	PRE	47.6	8.8	9.7	0.0
19. LASSO + SOLD	1.5 + 3QT	PRE	47.8	8.8	9.3	0.0
20. SENCOR	.5	PPE	47.9	8.8	6.5	0.3
21. SOYEX	4.5	PRE	49.0	7.8	8.8	0.2
22. SENCOR + SURFLAN	.33 + 1.0	PRE	49.7	9.3	8.5	0.0
23. TRIF. + BASAGRAN(EP)	1.0 + .75	PPI	46.1	8.5	8.8	0.0
24. HAND WEED			48.6	8.2	9.8	0.0
25. NO TREATMENT			32.8	0.0	0.0	0.0
TEST AVERAGES			44.2	7.9	8.1	0.3
L.S.D. (.05)			8.4	1.2	2.0	0.5

* WHEN APPLIED:

PPI (PREPLANT INCORPORATED)
PRE (COMPLETE COVERAGE AFTER PLANTING)
EP (EARLY POST)

** WEED CONTROL RATING:

10 - COMPLETE CONTROL
0 - NO CONTROL

*** CROP INJURY RATING:

10 - COMPLETE KILL
0 - NO INJURY

Weed Control Research Plot Data

1. Location: Powhattan Cooperator: R. F. Sloan
2. Soil: Texture Silty Clay Loam pH 5.8 Organic Matter 2.8
3. Planting: Date 6/8 Rate 52#/A Depth 1-1 1/2"
4. Crop Soybeans Variety Foundation Williams
5. Fertilizer Applied: N 5 P 20 K 10
6. Seedbed Condition: (X) Excellent () Fair () Poor () _____
7. Replications 3 Plot Size 4 30" rows x 30'
8. Gallons of Spray per Acre 30 Carrier: (X) Water () Fert.
9. Date Herbicide Applied: Preplant Incorporated 6/1
Preemergent 6/9 Early Post 6/22
10. Precipitation after planting: 6/13 - .41" 6/15 - .07" 6/22 - .15"
7/2 - 1.36" 7/3 - 2.57" 7/4 - .21" 7/10 - .49"
7/19 - 1.5" 7/20 - 3.2"
11. Date of Crop Injury Rating --; Weed Control Rating 9/7/23
12. Crop Maturity (Silking, 50% headed, etc.) _____
13. Date Harvested October 30
14. Summary: (Weed Control - predominant species, etc.)

Weed control was quite good on PPI treatments and was generally unsatisfactory on the PRE treatments, which was probably due to the absence of effective rainfall for the first 3 weeks following planting. Broadleaf weeds consisted of occasional pigweeds, velvetleaf, and a few cocklebur. Grasses were almost entirely giant foxtail.

15. Summary: (Crop Injury - stand reduction, stunting, chlorosis, etc.)

No crop injury rating was made as none of the differences between plots could be definitely attributed to the herbicide. Any differences that did exist between plots were very small and quite difficult to see.

16. Summary: (Crop Yield)

Yields were generally good averaging 42.9 bus./A. Yield differences were probably due more to differences in degree of weed control than any other single factor. PPI treatments averaged 46 bus./A., PRE treatments 40.6 bus./A. and PPI + EP treatments averaged 46.9 bus./A.

KANSAS STATE UNIVERSITY
AGRONOMY DEPARTMENT

HERBICIDE PERFORMANCE
SOYBEANS 1973
POWHATTAN

TREATMENT	LBS. A.I. PER A.	WHEN* APPLIED	BU. PER A.	WEED CONTROL RATING**		CROP*** INJURY
				BROADLEAF	GRASSY	
CGA 10832	1.25	PPI	45.0	9.6	9.8	0.0
COBEX	.5	PPI	45.2	9.9	9.2	0.0
TREFLAN	1.0	PPI	45.7	9.7	9.9	0.0
COBEX	.66	PPI	45.8	10.0	9.4	0.0
TREFLAN + SENCOR	.75 + .38	PPI	46.4	10.0	9.7	0.0
PLANAVIN	1.0	PPI	48.1	10.0	9.3	0.0
VERNAM	3.0	PPI	48.6	10.0	7.5	0.0
MODOWN	2.0	PRE	34.2	10.0	1.0	0.0
SOYEX	3.75	PRE	36.8	9.8	1.8	0.0
SOYEX	4.5	PRE	37.0	6.6	1.7	0.0
SENCOR	.5	PRE	38.4	10.0	2.0	0.0
LASSO + MALORAN	1.5 + 1.5	PRE	38.8	9.9	4.7	0.0
SOLO	5QT	PRE	39.0	9.9	2.2	0.0
LASSO + LOROX	1.5 + 1.0	PRE	39.6	10.0	4.8	0.0
LASSO + MODOWN	1.5 + 1.25	PRE	40.4	9.9	2.7	0.0
LASSO + BASAGRAN (EP)	2.0 + .75	PRE	41.6	9.9	7.0	0.0
LASSO + SENCOR	1.5 + .38	PRE	42.1	9.9	5.7	0.0
LASSO	2.0	PRE	43.3	9.9	5.3	0.0
LASSO + SOLO	1.5 + 3QT	PRE	44.2	9.9	6.7	0.0
LASSO + BLADDEX	2.0 + 1.5	PRE	45.1	9.9	8.2	0.0
SENCOR + SURFLAN	.33 + 1.0	PRE	45.2	9.9	8.8	0.0
AMIBEN	3.0	PRE	48.2	10.0	9.5	0.0
TREF. + BASAGRAN(EP)	1.0 + .75	PPI	47.9	10.0	9.9	0.0
HAND WEED			46.3	10.0	10.0	0.0
NO TREATMENT			41.6	0.0	0.0	0.0
TEST AVERAGES			43.0	9.4	6.3	0.0
L.S.D. (.05)			5.1	1.9	1.6	0.0

* WHEN APPLIED: PPI (PREPLANT INCORPORATED)
PRE (COMPLETE COVERAGE AFTER PLANTING)
EP (EARLY POST)

** WEED CONTROL RATING: 10 - COMPLETE CONTROL
0 - NO CONTROL

*** CROP INJURY RATING: 10 - COMPLETE KILL
0 - NO INJURY

Weed Control Research Plot Data

1. Location: Ottawa Cooperator: Charles Knight
2. Soil: Texture sic1 pH -- Organic Matter --
3. Planting: Date May 19, 1973 Rate 60 lbs/acre Depth 1 1/2 inch
4. Crop Soybeans Variety Columbus
5. Fertilizer Applied: N 0 P 0 K 0
6. Seedbed Condition: () Excellent (X) Fair () Poor () _____
7. Replications 3 Plot Size 10 x 50 ft. (harvested 5 x 50 ft.)
8. Gallons of Spray per Acre 20 Carrier: (X) Water () Fert.
9. Date Herbicide Applied: Preplant Incorporated May 18, 1973
Preemergent May 19, 1973 Early Post June 19, 1973
10. Precipitation after planting: May 22 - 1.50" May 28 - 1.20"
June 2 - .40" June 4 - .60" June 5 - .30" June 14 - .20"
June 16 - .20" June 28 - .50" July (Total) - 8.05" Aug. (Total).55"
Sept. (Total) - 10.65"
11. Date of Crop Injury Rating June 27; Weed Control Rating Nov. 1, 1973
12. Crop Maturity (Silking, 50% headed, etc.) ---
13. Date Harvested Nov. 2, 1973
14. Summary: (Weed Control - predominant species, etc.)
15. Summary: (Crop Injury - stand reduction, stunting, chlorosis, etc.)
Modown - 2# - Slightly stunted growth.
Sencor + Lasso - .38 + 1.5 - Some burning of lower leaves.
Treflan + Sencor - .75 + .38 - Very slight damage to lower leaves.
Lasso + Maloran - 1.5 + 1.5 - Stand reduced in spots.
Lasso + Bladex - 2 + 1.5 - Severe damage and stand reduction.
Treflan (Basagran) - Some yellowing of leaves but no stunting.
Sencor + Surflan - .33 + 1.0 - Some stunting and leaf damage in spots.
Lasso (Basagran) - Slight yellowing of leaves but growth O.K.
16. Summary: (Crop Yield)

KANSAS STATE UNIVERSITY
AGRONOMY DEPARTMENT

PERFORMANCE HERBICIDES
SOYBEANS 1973
OTTAWA

NO. TREATMENT	LBS. A.I. PER A.	WHEN* APPLIED	BU. PER A.	WEED CONTROL RATING**		CROP*** INJURY
				BROADLEAF	GRASSY	
1. CGA 10832	1.25	PPI	26.4	7.0	9.0	0.0
2. COBEX	.66	PPI	27.3	7.7	7.7	0.0
3. VERNAM	3.0	PPI	27.6	6.8	4.7	0.0
4. COBEX	.5	PPI	28.7	7.0	6.8	0.0
5. TRIFLAN	1.0	PPI	29.2	6.8	8.7	0.0
6. PLANAVIN	1.0	PPI	29.2	6.7	4.7	0.0
7. TRIFLAN + SENCOR	.75 + .38	PPI	30.3	8.8	8.5	0.0
8. LASSO + BLADEX	2.0 + 1.5	PRE	16.5	8.8	6.7	0.0
9. SOYEX	4.5	PRE	24.3	6.2	5.7	0.0
10. MDDOWN	2.0	PRE	24.4	7.3	3.8	0.0
11. LASSO + MDDOWN	1.5 + 1.25	PRE	24.8	8.8	7.5	0.0
12. SOLD	50T	PRE	24.8	6.2	4.0	0.0
13. SENCOR + SUREFLAN	.33 + 1.0	PRE	25.1	9.2	8.2	0.0
14. LASSO + LUDOX	1.5 + 1.0	PRE	25.3	7.3	7.7	0.0
15. LASSO + MALORAN	1.5 + 1.5	PRE	25.5	7.7	7.7	0.0
16. SOYEX	3.75	PRE	25.5	7.3	6.0	0.0
17. LASSO + SENCOR	1.5 + .38	PRE	25.6	9.0	7.7	0.0
18. LASSO + SOLD	1.5 + 30T	PRE	26.0	8.7	8.3	0.0
19. SENCOR	.5	PRE	26.1	9.0	7.7	0.0
20. LASSO	2.0	PRE	26.6	6.5	7.7	0.0
21. AMIBEN	3.0	PRE	27.3	8.7	7.3	0.0
22. LASSO + BASAGRAN (EP)	2.0 + .75	PRE	27.4	9.3	8.0	0.0
23. TRIF. + BASAGRAN(EP)	1.0 + .75	PPI	29.8	8.5	8.0	0.0
24. HAND WEED			29.5	9.5	9.5	0.0
25. NO TREATMENT			25.1	3.7	1.7	0.0
TEST AVERAGES			26.3	7.7	6.9	0.0
L.S.D. (.05)			4.7	2.5	2.4	0.0

* WHEN APPLIED: PPI (PREPLANT INCORPORATED)
PRE (COMPLETE COVERAGE IMMEDIATELY AFTER
EP (EARLY POST) PLANTING)

** WEED CONTROL RATING: 10 - COMPLETE CONTROL
0 - NO CONTROL

*** CROP INJURY RATING: 10 - COMPLETE KILL
0 - NO INJURY

Weed Control Research Plot Data

1. Location: Belleville, Kansas Cooperator: R. J. Raney
2. Soil: Texture Crete SCL pH -- Organic Matter --
3. Planting: Date 5/30/73 Rate 8 beans/ft. row Depth 1.0"
4. Crop Soybeans Variety Calland
5. Fertilizer Applied: N 0 P 0 K 0
6. Seedbed Condition: (X) Excellent () Fair () Poor ()
7. Replications 3 Plot Size 10 ft. x 30 ft.
8. Gallons of Spray per Acre 26 Carrier: (X) Water () Fert.
9. Date Herbicide Applied: Preplant Incorporated 5/23/73
Preemergent 5/31/73 Early Post 6/21/73
10. Precipitation after planting: --
11. Date of Crop Injury Rating --; Weed Control Rating 10/8/73
12. Crop Maturity (Silking, 50% headed, etc.)
13. Date Harvested 10/17/73
14. Summary: (Weed Control - predominant species, etc.)
Weeds present were pigweed and crabgrass.
15. Summary: (Crop Injury - stand reduction, stunting, chlorosis, etc.)
16. Summary: (Crop Yield)

KANSAS STATE UNIVERSITY
AGRONOMY DEPARTMENT

HERRICIDE PERFORMANCE
SOYBEAN 1973
BELLEVILLE

TREATMENT	LBS. A.I. PER A.	WHEN* APPLIED	BU. PER A.	WEED CONTROL RATING**		CROP*** INJURY
				BROADLEAF	GRASSY	
VERNAM	3.0	PPI	24.2	8.3	5.3	0.0
COBEX	.66	PPI	24.2	9.3	9.3	0.0
TREFLAN + SENCOR	.75 + .38	PPI	28.9	9.0	8.7	0.0
PLANAVIN	1.0	PPI	31.4	8.3	9.0	0.0
COBEX	.5	PPI	33.7	7.7	9.0	0.0
CGA 10832	1.25	PPI	35.9	9.7	9.3	0.0
TREFLAN	1.0	PPI	43.2	8.3	10.0	0.0
AMIBEN	3.0	PRE	24.9	10.0	9.0	0.0
LASSO + SENCOR	1.5 + .38	PRE	25.8	10.0	9.3	0.0
MODOWN	2.0	PRE	26.8	5.7	7.7	0.0
SOYEX	4.5	PRE	28.4	3.3	6.3	0.0
LASSO + SOLO	1.5 + 3QT	PRE	28.6	9.0	9.3	0.0
LASSO + LOROX	1.5 + 1.0	PRE	32.2	8.3	8.3	0.0
SOLO	5QT	PRE	34.1	6.0	7.7	0.0
SENCOR	.5	PRE	34.6	9.0	9.7	0.0
SENCOR + SURFLAN	.33 + 1.0	PRE	35.9	10.0	9.0	0.0
LASSO + BASAGRAN (EP)	2.0 + .75	PRE	38.0	9.0	9.0	0.0
SOYEX	3.75	PRE	38.1	7.0	7.7	0.0
LASSO + MODOWN	1.5 + 1.25	PRE	38.3	9.3	8.7	0.0
LASSO	2.0	PRE	38.4	9.0	9.0	0.0
LASSO + BLADEX	2.0 + 1.5	PRE	40.3	8.3	10.0	0.0
LASSO + MALORAN	1.5 + 1.5	PRE	41.3	9.0	9.3	0.0
TREF. + BASAGRAN(EP)	1.0 + .75	PPI	40.0	8.7	10.0	0.0
HAND WEED			41.1	8.7	9.0	0.0
NO TREATMENT			28.3	1.0	6.3	0.0
TEST AVERAGES			33.5	8.1	8.6	0.0
L.S.D. (.05)			14.3	2.1	1.7	0.0

* WHEN APPLIED: PPI (PREPLANT INCORPORATED)
PRE (COMPLETE COVERAGE AFTER PLANTING)
EP (EARLY POST)

** WEED CONTROL RATING: 10 - COMPLETE CONTROL
0 - NO CONTROL

*** CROP INJURY RATING: 10 - COMPLETE KILL
0 - NO INJURY

Herbicide Performance
Weed Control Research Plot Data
Soybeans

1. Location: Rossville Cooperator: Neil Humburg and L.S.Axthelm
2. Soil: Texture Eudora SL pH 5.6 Organic Matter 2.0
3. Planting: Date 5/17/73 Rate 1.1 bu/A Depth 1"
4. Crop Soybeans Variety Clark 63
5. Fertilizer Applied: N 11 P ⁴³P₂O₅ K 21 K₂O
6. Seedbed Condition: () Excellent (X) Fair () Poor () _____
7. Replications 3 Plot Size 4 rows (30") x 30 ft
8. Gallons of Spray per Acre 20 Carrier: (X) Water () Fert.
9. Date Herbicide Applied: Preplant Incorporated 5/17/73
Preemergent 5/17/73 Early Post 6/13/73
10. Precipitation after planting: 5/22 - 0.92" 5/27 - 0.37"
5/28 - 0.06" 6/2 - 0.03" 6/4 - 0.68"
6/5 - 0.27" 6/13 - 0.11" 6/14 - 0.08"
11. Date of Crop Injury Rating 6/17/73; Weed Control Rating 9/20/73
12. Crop Maturity (Silking, 50% headed, etc.) physiologically mature
13. Date Harvested 10/31/73
14. Summary: (Weed Control - predominant species, etc.)

Weed control was influenced by a low soybean population resulting from low-germination seed, poor conditions for germination, and variable planting depth. Predominant species: pigweed, crabgrass, and smartweed. Other species: ivy-leaved morning glory, barnyardgrass, and foxtail. Broadleaf and grassy weed control varied, with most herbicides providing adequate control to allow combine harvesting. For the particular weed species present, marginal control was observed with Soyex, Cobex, Modown and Basagran in combinations. Basagran was applied later than desired.

15. Summary: (Crop Injury - stand reduction, stunting, chlorosis, etc.)

Soybean injury was in part related to low-germination seed, poor conditions for germination, and variable planting depth. Leaf injury was observed on Sencor, Treflan-Sencor, and Vernam plots, with recovery of Vernam-injured plants but severe stand reduction of Sencor-treated plots. The above herbicides, Cobex, and Treflan caused some stand reduction and stunting.

16. Summary: (Crop Yield)

Combine-harvested yields ranged from 48.2 bu/A to 10.4 bu/A for the no-treatment plots. Yields generally were correlated with effectiveness of weed control and lack of crop injury.

KANSAS STATE UNIVERSITY
AGRONOMY DEPARTMENT

HERBICIDE PERFORMANCE
SOYBEANS 1973
KANSAS RIVER VALLEY

NO.	TREATMENT	LBS. A.I. PER A.	WHEN* APPLIED	BU. PER A.	WEED CONTROL RATING**		CROP*** INJURY
					BROADLEAF	GRASSY	
1.	COBEX	.66	PPI	21.7	5.3	7.3	0.0
2.	TREFLAN	1.0	PPI	29.5	6.7	9.3	0.0
3.	COBEX	.5	PPI	31.8	6.7	7.7	0.0
4.	TREFLAN + SENCOR	.75 + .38	PPI	34.6	8.7	9.0	0.0
5.	CGA 10832	1.25	PPI	44.1	7.3	9.3	0.0
6.	VERNAM	3.0	PPI	47.2	8.7	8.3	0.0
7.	PLANAVIN	1.0	PPI	48.2	8.3	8.7	0.0
8.	SOYEX	3.75	PRE	28.2	3.7	8.0	0.0
9.	MODDWN	2.0	PRE	29.5	4.7	5.7	0.0
10.	SOYEX	4.5	PRE	32.2	5.7	7.3	0.0
11.	SENCOR	.5	PRE	32.2	8.0	6.3	0.0
12.	AMIBEN	3.0	PRE	34.1	6.0	9.3	0.0
13.	SOLO	5QT	PRE	34.4	5.0	6.0	0.0
14.	LASSO + BASAGRAN (EP)	2.0 + .75	PRE	36.5	6.3	6.7	0.0
15.	LASSO + MALORAN	1.5 + 1.5	PRE	37.9	6.7	9.0	0.0
16.	LASSO + MODDWN	1.5 + 1.25	PRE	38.3	7.3	7.3	0.0
17.	LASSO + BLADEX	2.0 + 1.5	PRE	39.2	7.3	9.0	0.0
18.	LASSO + SOLO	1.5 + 3QT	PRE	43.6	8.0	9.3	0.0
19.	LASSO + SENCOR	1.5 + .38	PRE	44.5	7.7	7.7	0.0
20.	SENCOR + SURFLAN	.33 + 1.0	PRE	44.7	8.7	9.0	0.0
21.	LASSO + LOROX	1.5 + 1.0	PRE	46.7	9.3	9.3	0.0
22.	LASSO	2.0	PRE	47.8	7.7	10.0	0.0
23.	TREF. + BASAGRAN(EP)	1.0 + .75	PPI	15.3	2.0	3.7	0.0
24.	HAND WEED			45.1	9.7	9.0	0.0
25.	NO TREATMENT			10.4	0.0	0.0	0.0
TEST AVERAGES				35.9	6.6	7.7	0.0
L.S.D. (.05)				11.7	2.7	2.5	0.0

* WHEN APPLIED: PPI (PREPLANT INCORPORATED)
PRE (COMPLETE COVERAGE AFTER PLANTING)
EP (EARLY POST)

** WEED CONTROL RATING: 10 - COMPLETE CONTROL
0 - NO CONTROL

*** CROP INJURY RATING: 10 - COMPLETE KILL
0 - NO INJURY

Weed Control Research Plot Data

1. Location: Manhattan, Kansas Cooperator: Oliver G. Russ, KSU
2. Soil: Texture Reading SL pH 6.6 Organic Matter 2.5
3. Planting: Date 6/8/73 Rate 1 seed every 4" Depth 2.0"
4. Crop Grain Sorghum Variety Pioneer 8674
5. Fertilizer Applied: N 140 P 100 K none
6. Seedbed Condition: (X) Excellent () Fair () Poor () _____
7. Replications 3 Plot Size 10 ft. x 30 ft.
8. Gallons of Spray per Acre 20 Carrier: (X) Water () Fert.
9. Date Herbicide Applied: Preplant Incorporated --
 Preemergent 6/8/73 Early Post 6/25/73
10. Precipitation after planting: 6/13 - .92 6/21 - .05
6/27 - .32 7/14 - 1.65 7/19 - 1.50
7/20 - 2.55 7/23 - .36 7/24 - .20
11. Date of Crop Injury Rating --; Weed Control Rating 7/5/73
12. Crop Maturity (Silking, 50% headed, etc.) _____
13. Date Harvested 10/5/73
14. Summary: (Weed Control - predominant species, etc.)
 Plot area was overseeded with alfalfa seed screenings. Predominant weed species present were pigweed, velvetleaf, crabgrass, foxtail ssp., sunflower, and morningglory. Modown alone did not provide adequate morningglory control.
15. Summary: (Crop Injury - stand reduction, stunting, chlorosis, etc.)
 Igran + Atrazine applied early post caused a reduction in stand. Moderate injury was observed from Bladex + Ramrod early post.
16. Summary: (Crop Yield)
 Excessive moisture fell in September causing sprout damage to occur in the head. Some shattering occurred as a result of sprouting.

KANSAS STATE UNIVERSITY
AGRONOMY DEPARTMENT

HERBICIDE PERFORMANCE
GRAIN SORGHUM 1973
MANHATTAN

NO. TREATMENT	LBS. A.I. PER A.	WHEN* APPLIED	BU. PER A.	WEED CONTROL RATING**		CROP*** INJURY
				BROADLEAF	GRASSY	
1. NO TREATMENT		PRE	42.3	0.0	0.0	0.0
2. MODOWN + RAMROD	1.25 + 3.0	PRE	75.0	5.3	8.8	0.0
3. MODOWN + HERBAN	1.2 + 1.6	PRE	76.9	7.2	7.8	0.0
4. HERBAN 21A	2.4	PRE	79.7	9.0	9.0	0.0
5. IGRAN + GS 13529	2.0 + .8	PRE	80.4	9.2	8.3	0.0
6. MODOWN	2.0	PRE	87.6	6.0	7.5	0.0
7. MODOWN	4.0	PRE	87.8	7.0	7.0	0.0
8. BLADEX + PROPAZINE	1.0 + 2.0	PRE	95.1	9.8	8.3	0.0
9. MODOWN + BLADEX	1.0 + 1.0	PRE	99.4	9.2	8.2	0.0
10. IGRAN	2.4	PRE	99.9	8.8	8.2	0.0
11. IGRAN + PROPAZINE	2.0 + .8	PRE	101.3	8.3	8.3	0.0
12. BLADEX + RAMROD	1.0 + 3.0	PRE	108.4	9.2	9.2	0.0
13. IGRAN + ATRAZINE	2.0 + .8	PRE	110.8	8.8	8.3	0.0
14. MODOWN + HERBAN	.8 + 1.6	PRE	111.8	6.5	7.7	0.0
15. PROPAZINE	3.0	PRE	116.1	9.3	7.7	0.0
16. ATRAZINE	2.0	PRE	116.5	9.7	8.8	0.0
17. HAND WEED		PRE	117.5	10.0	10.0	0.0
18. RAMROD	4.0	PRE	119.9	9.0	9.5	0.0
19. RAMROD/ATRAZINE	4.14	PRE	128.6	9.5	9.5	0.0
20. LASSO + ATRAZINE	1.5 + 1.0	EP	116.7	9.7	5.8	0.0
21. LASSO + ATRAZINE	2.0 + 1.2	EP	111.3	9.7	7.5	0.0
22. RAMROD/ATRAZINE	4.14	EP	113.9	9.3	7.0	0.0
23. ATRAZINE	2.0	EP	118.7	8.8	7.0	0.0
24. IGRAN + ATRAZINE	2.0 + .8	EP	114.2	9.8	9.5	2.2
25. BLADEX + RAMROD	1.0 + 3.0	EP	104.7	9.8	8.8	0.7
TEST AVERAGES			101.4	8.4	7.9	0.1
L.S.D. (.05)			32.8	2.2	0.8	0.1

* WHEN APPLIED:

PRE (COMPLETE COVERAGE AFTER PLANTING)
EP (EARLY POST)

** WEED CONTROL RATING:

10 - COMPLETE CONTROL
0 - NO CONTROL

*** CROP INJURY RATING:

10 - COMPLETE KILL
0 - NO INJURY

Weed Control Research Plot Data

1. Location: Manhattan, Kansas Cooperator: Oliver G. Russ, KSU
2. Soil: Texture Reading SL pH 6.6 Organic Matter 2.5
3. Planting: Date 6/1/73 Rate 1 seed every 4" Depth 2.0"
4. Crop Grain Sorghum Variety Pioneer 8674
5. Fertilizer Applied: N 210 P 100 K None
6. Seedbed Condition: () Excellent () Fair () Poor (X) _____
7. Replications 3 Plot Size 10 ft. x 30 ft.
8. Gallons of Spray per Acre 20 Carrier: () Water (X) Fert. 32% N
9. Date Herbicide Applied: Preplant Incorporated --
 Preemergent 6/1/73 Early Post Spike - 6/8/73, 3-leaf - 6/15, 6-leaf-6/20
6/5 - .15"
10. Precipitation after planting: 6/4 - 1.93" 6/5 - .15"
6/6 - .11" 6/13 - .92" 6/21 - .05"
6/27 - .32" 7/14 - 1.65" 7/19 - 1.50"
11. Date of Crop Injury Rating --; Weed Control Rating --
12. Crop Maturity (Silking, 50% headed, etc.) _____
13. Date Harvested 10/8/73
14. Summary: (Weed Control - predominant species, etc.)
 Two cultivations with the Lilliston cultivator and furrowed for irrigation, combined with herbicide treatments, gave the plot area excellent weed control.
15. Summary: (Crop Injury - stand reduction, stunting, chlorosis, etc.)
 No apparent crop injury when herbicide and nitrogen treatments were applied preemergent or when sorghum was in spike stage. All treatments applied in the three-leaf and six-leaf growth stages caused slight leaf burn. Leaf burn was more noticeable in the Ramrod + Atrazine treatments. Leaf burn caused no reduction in grain yield.
16. Summary: (Crop Yield)

KANSAS STATE UNIVERSITY
AGRONOMY DEPARTMENT

HERBICIDE NITROGEN SOLUTIONS
GRAIN SORGHUM 1973
MANHATTAN

NO. TREATMENT	LBS. A.I. PER A.	WHEN* APPLIED	BU. PER A.	WEED CONTROL RATING**		CROP*** INJURY
				BROADLEAF	GRASSY	
1. HAND WEED (NITROGEN)	0.0	PRE	131.0	10.0	10.0	0.0
2. ATRAZINE + RAMROD	4.14	PRE	131.2	10.0	10.0	0.0
3. HERBAN 21 A	2.4	PRE	133.1	10.0	10.0	0.0
4. ATRAZINE	1.0	PRE	133.8	10.0	10.0	0.0
5. ATRAZINE	2.0	PRE	145.5	10.0	10.0	0.0
6. HAND WEED (NITROGEN)	0.0	SPI	133.8	10.0	10.0	0.0
7. ATRAZINE	2.0	SPI	136.9	10.0	10.0	0.0
8. HERBAN 21 A	2.4	SPI	137.1	10.0	10.0	0.0
9. ATRAZINE + RAMROD	4.14	SPI	137.6	10.0	10.0	0.0
10. ATRAZINE	1.0	SPI	146.6	10.0	10.0	0.0
11. ATRAZINE + RAMROD	4.14	3-L	133.1	10.0	10.0	0.0
12. HERBAN 21 A	2.4	3-L	134.1	10.0	10.0	0.0
13. ATRAZINE	1.0	3-L	134.6	10.0	10.0	0.0
14. HAND WEED (NITROGEN)	0.0	3-L	135.5	10.0	10.0	0.0
15. ATRAZINE	2.0	3-L	138.1	10.0	10.0	0.0
16. HAND WEED (NITROGEN)	0.0	6-L	138.3	10.0	10.0	0.0
17. ATRAZINE	1.0	6-L	131.5	10.0	10.0	0.0
18. ATRAZINE	2.0	6-L	133.1	10.0	10.0	0.0
19. ATRAZINE + RAMROD	4.14	6-L	142.9	10.0	10.0	0.0
20. HERBAN 21 A	2.4	6-L	139.5	10.0	10.0	0.0
TEST AVERAGES			136.4	10.0	10.0	0.0
L.S.D. (.05)			12.5	0.0	0.0	0.0

* WHEN APPLIED: PRE (COMPLETE COVERAGE AFTER PLANTING)
SPI SPIKE STAGE
3-L 3 LEAF STAGE
6-L 6 LEAF STAGE

** WEED CONTROL RATING: 10 - COMPLETE CONTROL
0 - NO CONTROL

*** CROP INJURY RATING: 10 - COMPLETE KILL
0 - NO INJURY

Weed Control Research Plot Data

1. Location: Powhattan Cooperator: R. F. Sloan
2. Soil: Texture Silty Clay Loam pH 6.0 Organic Matter 2.8
3. Planting: Date June 12, 1973 Rate 4#/acre Depth 1-1 1/2"
4. Crop Grain Sorghum Variety Excel 733
5. Fertilizer Applied: N 70# all as N sol. P 0 K 0
6. Seedbed Condition: () Excellent (X) Fair () Poor () Good tilth but a trifle dry
7. Replications 3 Plot Size 4 30" rows x 30'
32% N
8. Gallons of Spray per Acre 20 Carrier: () Water (X) Fert. Sol.
9. Date Herbicide Applied: Preplant Incorporated --
Spike - 6/19 6-leaf - 6/29
Preemergent 6/12 tmts 1-5,6,11,& 16 Post 3-leaf - 6/22
10. Precipitation after planting: 6/13 - .41" 6/15 - .07" 6/22 - .15"
7/2 - 1.36" 7/3 - 2.57" 7/4 - .21"
7/10 - .49" 7/19 - 1.50" 7/20 - 3.20"
11. Date of Crop Injury Rating 6/22 & 7/2; Weed Control Rating 10/16
12. Crop Maturity (Silking, 50% headed, etc.) _____
13. Date Harvested October 23, 1973
14. Summary: (Weed Control - predominant species, etc.)
Weed control was generally excellent. All plots were cultivated July 16 which cleaned out most of the few existing weeds.
15. Summary: (Crop Injury - stand reduction, stunting, chlorosis, etc.)
Some injury was noted on nearly all post treatments. Atrazine + Ramrod was most damaging particularly at the spike and 3-leaf stages where some stand reductions occurred. It caused severe leaf burning at the 6-leaf stage but killed no plants. It also caused some apparent delay in maturity at the 6-leaf stage and 3-leaf stage as did the Outfox treatment. Even N solution alone caused noticeable leaf burning at all stages but the leaf burning apparently caused little or no permanent damage.
16. Summary: (Crop Yield)
Yields were good considering the relatively low rate of fertilization and late planting date. PRE treatments averaged 119.6 bu/A, spike stage - 117.7 bu/A, 3 leaf stage treatments - 114.2 bu/A and 6 leaf stage treatments 114.7 bu/A. Hand weed plots averaged 118.1 bu/A. Treatments 6,11, and 16 (hand weed) all received Ramrod-AAtrex at 4.14# A.I. in water PRE and then N sol. over the top at the various stages of growth. Treatment 1 received the Ramrod-AAtrex in N sol. applied premerge.

KANSAS STATE UNIVERSITY
AGRONOMY DEPARTMENT

HERBICIDE NITROGEN SOLUTIONS
GRAIN SORGHUM 1973
POWHATTAN

NO.	TREATMENT	LBS. A.I. PER A.	WHEN* APPLIED	BU. PER A.	WEED CONTROL RATING**		CROP*** INJURY
					BROADLEAF	GRASSY	
1.	HAND WEED (NITROGEN)	0.0	PRE	118.0	10.0	10.0	0.0
2.	HERBAN 21 A	2.4	PRE	118.3	10.0	9.7	0.3
3.	ATRAZINE	1.0	PRE	120.7	10.0	9.9	0.3
4.	ATRAZINE	2.0	PRE	120.7	10.0	10.0	0.3
5.	ATRAZINE + RAMROD	4.14	PRE	121.3	10.0	10.0	0.3
6.	ATRAZINE + RAMROD	4.14	SPI	109.7	10.0	9.9	3.7
7.	ATRAZINE	2.0	SPI	116.3	10.0	10.0	0.3
8.	HERBAN 21 A	2.4	SPI	117.0	10.0	9.8	1.7
9.	HAND WEED (NITROGEN)	0.0	SPI	119.0	10.0	10.0	1.7
10.	ATRAZINE	1.0	SPI	126.7	10.0	9.8	0.7
11.	ATRAZINE + RAMROD	4.14	3-L	106.7	10.0	10.0	4.0
12.	ATRAZINE	1.0	3-L	112.0	10.0	9.0	1.0
13.	HERBAN 21 A	2.4	3-L	116.7	10.0	9.8	1.0
14.	HAND WEED (NITROGEN)	0.0	3-L	117.7	10.0	10.0	0.7
15.	ATRAZINE	2.0	3-L	118.0	10.0	9.8	1.0
16.	HAND WEED (NITROGEN)	0.0	6-L	118.0	10.0	10.0	2.0
17.	ATRAZINE	1.0	6-L	113.3	10.0	9.0	2.7
18.	ATRAZINE	2.0	6-L	117.0	10.0	10.0	3.0
19.	ATRAZINE + RAMROD	4.14	6-L	113.3	10.0	9.8	4.0
20.	HERBAN 21 A	2.4	6-L	111.7	10.0	10.0	3.3
TEST AVERAGES				116.6	10.0	9.8	1.6
L.S.D. (.05)				10.9	0.0	0.7	0.9

* WHEN APPLIED: PRE (COMPLETE COVERAGE AFTER PLANTING)
SPI SPIKE STAGE
3-L 3 LEAF STAGE
6-L 6 LEAF STAGE

** WEED CONTROL RATING: 10 - COMPLETE CONTROL
0 - NO CONTROL

*** CROP INJURY RATING: 10 - COMPLETE KILL
0 - NO INJURY

Weed Control Research Plot Data

1. Location: Powhattan Cooperator: R. F. Sloan
2. Soil: Texture Silty Clay Loam pH 6.0 Organic Matter 2.7
3. Planting: Date June 12, '73 Rate 4#/Acre Depth 1"
4. Crop Grain sorghum Variety Pioneer 842
5. Fertilizer Applied: N 125 P 30 K 15
6. Seedbed Condition: (X) Excellent () Fair () Poor ()
7. Replications 3 Plot Size 4 30" rows x 30'
8. Gallons of Spray per Acre 30 Carrier: (X) Water () Fert.
9. Date Herbicide Applied: Preplant Incorporated None
Preemergent 6/12/73 Early Post 6/25
10. Precipitation after planting: 6/13 - .41" 6/15 - .07" 6/22 - .15"
July 2 - 1.36" July 3 - 2.57" July 4 - .21"
July 10 - .49" July 19 - 1.50" July 20 - 3.20"
11. Date of Crop Injury Rating 6/29; Weed Control Rating 9/7
12. Crop Maturity (Silking, 50% headed, etc.) _____
13. Date Harvested 10/18/73
14. Summary: (Weed Control - predominant species, etc.)
Broadleaf weeds were practically all pigweed with a few occasional velvet leaf. Grasses were essentially all giant foxtail. I felt that weed control could have been better but probably wasn't because of the relatively dry 3 weeks following PRE treatments. EP treatments gave good weed control but some PRE treatments didn't.
15. Summary: (Crop Injury - stand reduction, stunting, chlorosis, etc.)
No crop injury was noted on any of the PRE treatments except some slight crinkling of the leaves on plots treated with Modown. Yields were possibly lowered some in treatments 12 and 13 but this may have been due to the rather unsatisfactory control of weeds by Modown. All Igran plots except treatment 24 gave unsatisfactory weed control but this could possibly have been caused by the Igran clogging the screens. In fact, it probably was.
16. Summary: (Crop Yield)
Yields were quite satisfactory overall considering the planting date and rather poor weed control on many of the plots. The mean yield was 114.7 bu./A.

KANSAS STATE UNIVERSITY
AGRONOMY DEPARTMENT

HERBICIDE PERFORMANCE
GRAIN SORGHUM 1973
POWHATTAN

NO. TREATMENT	LBS. A.I. PER A.	WHEN* APPLIED	BU. PER A.	WEED CONTROL RATING**		CROP*** INJURY
				BROADLEAF	GRASSY	
1. IGRAN	2.4	PRE	100.0	3.0	4.7	0.0
2. MDDOWN	2.0	PRE	104.7	9.8	3.3	1.0
3. MDDOWN + HERBAN	.8 + 1.6	PRE	105.0	7.2	6.7	0.0
4. IGRAN + ATRAZINE	2.0 + .8	PRE	107.0	6.0	7.2	0.0
5. IGRAN + GS13529	2.0 + .8	PRE	108.0	5.0	4.7	0.0
6. IGRAN + PROPAZINE	2.0 + .8	PRE	110.0	9.5	5.7	0.0
7. MDDOWN + BLADEX	1.0 + 1.0	PRE	111.7	7.5	8.7	0.0
8. MDDOWN	4.0	PRE	112.0	9.9	7.0	1.5
9. MDDOWN + HERBAN	1.2 + 1.6	PRE	114.0	9.9	8.0	0.0
10. BLADEX + PROPAZINE	1.0 + 2.0	PRE	119.0	9.8	9.8	0.0
11. RAMROD	4.0	PRE	119.3	9.8	9.6	0.0
12. ATRAZINE	2.0	PRE	120.0	9.9	8.8	0.0
13. PROPAZINE	3.0	PRE	120.7	9.9	8.3	0.0
14. MDDOWN + RAMROD	1.25 + 3.0	PRE	121.0	9.9	9.6	0.0
15. BLADEX + RAMROD	1.0 + 3.0	PRE	121.3	10.0	9.1	0.0
16. HERBAN 21A	2.4	PRE	123.0	9.7	9.1	0.0
17. RAMROD/ATRAZINE	4.14	PRE	125.7	9.8	9.7	0.0
18. NO TREATMENT			92.3	0.7	2.0	0.0
19. HAND WEED			121.0	10.0	10.0	0.0
20. LASSO + ATRAZINE	1.5 + 1.0	EP	116.7	10.0	9.7	1.2
21. LASSO + ATRAZINE	2.0 + 1.2	EP	113.7	10.0	9.9	3.5
22. RAMROD/ATRAZINE	4.14	EP	117.0	10.0	9.7	0.0
23. ATRAZINE	2.0	EP	123.7	10.0	9.6	0.0
24. IGRAN + ATRAZINE	2.0 + .8	EP	122.0	10.0	9.2	1.2
25. BLADEX + RAMROD	1.0 + 3.0	EP	118.7	10.0	9.7	3.3
TEST AVERAGES			114.7	8.7	8.0	0.5
L.S.D. (.05)			12.0	2.2	2.6	0.3

* WHEN APPLIED: PRE (COMPLETE COVERAGE AFTER PLANTING)
EP (EARLY POST)

** WEED CONTROL RATING: 10 - COMPLETE CONTROL
0 - NO CONTROL

*** CROP INJURY RATING: 10 - COMPLETE KILL
0 - NO INJURY

Weed Control Research Plot Data

1. Location: Ottawa Cooperator: Charles Knight
2. Soil: Texture sic1 pH -- Organic Matter --
3. Planting: Date June 8, 1973 Rate 4 1/2 lbs/A Depth 1"
4. Crop Grain Sorghum Variety Asgrow Dorado
5. Fertilizer Applied: N 88 P P₂O₅ 46 K 0
6. Seedbed Condition: (X) Excellent () Fair () Poor ()
7. Replications 3 Plot Size 10 x 50 ft. (harvested 5 x 50 ft.)
8. Gallons of Spray per Acre 20 Carrier: (X) Water () Fert.
9. Date Herbicide Applied: Preplant Incorporated June 8, 1973
Preemergent June 9, 1973 Early Post June 19, 1973
10. Precipitation after planting: June 14 - .20" June 16 - .20"
June 28 - .50" July (Total) - 8.05" August (Total) -.55"
Sept. (Total) - 10.65"
11. Date of Crop Injury Rating June 27; Weed Control Rating Nov.1,1973
12. Crop Maturity (Silking, 50% headed, etc.)
13. Date Harvested Dec. 3, 1973
14. Summary: (Weed Control - predominant species, etc.)
Weeds were not a severe problem in any grain sorghum plots this year.
15. Summary: (Crop Injury - stand reduction, stunting, chlorosis, etc.)
All Modown plots showed some burning to leaves near the center of the plants, not on the leaf tips.
Plot 104 (4# Modown) showed severe stunting of plants during early stages of growth.
Igran + Atrazine caused damage to tips of sorghum leaves during early stages of growth.
16. Summary: (Crop Yield)

KANSAS STATE UNIVERSITY
AGRONOMY DEPARTMENT

HERBICIDE PERFORMANCE
GRAIN SORGHUM 1973
OTTAWA

NO. TREATMENT	LRS. A.T. PER A.	WHEN* APPLIED	RU. PER A.	WEED CONTROL RATING**		CROP*** INJURY
				BROADLEAF	GRASSY	
1. MODOWN	4.0	PRE	89.8	8.8	9.5	0.0
2. IGRAN + GS13529	2.0 + .8	PRE	90.4	9.0	9.5	0.0
3. PROPAZINE	2.0	PRE	90.9	7.7	8.2	0.0
4. MODOWN + HERBAN	.8 + 1.6	PRE	91.4	8.5	9.7	0.0
5. IGRAN	2.4	PRE	91.6	8.8	9.5	0.0
6. RAMBOD	4.0	PRE	92.6	7.0	9.7	0.0
7. MODOWN	2.0	PRE	93.2	8.8	9.5	0.0
8. IGRAN + PROPAZINE	2.0 + .8	PRE	93.9	9.2	9.8	0.0
9. MODOWN + HERBAN	1.2 + 1.6	PRE	94.0	8.8	9.5	0.0
10. BLADDEX + RAMBOD	1.0 + 3.0	PRE	95.2	8.5	8.2	0.0
11. MODOWN + BLADDEX	1.0 + 1.0	PPE	95.9	8.7	9.7	0.0
12. HERBAN 21A	2.4	PRE	96.7	8.2	9.0	0.0
13. IGRAN + ATRAZINE	2.0 + .8	PRE	96.9	8.7	9.2	0.0
14. ATRAZINE	2.0	PRE	97.3	8.3	9.5	0.0
15. MODOWN + RAMBOD	1.25 + 3.0	PRE	97.7	8.8	9.7	0.0
16. BLADDEX + PROPAZINE	1.0 + 2.0	PPE	100.2	8.5	8.7	0.0
17. RAMBOD/ATRAZINE	4.14	PRE	104.0	8.5	9.2	0.0
18. NO TREATMENT			82.4	6.2	9.2	0.0
19. HAND WEED			96.4	9.8	10.0	0.0
20. LASSO + ATRAZINE	1.5 + 1.0	EP	96.8	8.5	8.8	0.0
21. LASSO + ATRAZINE	2.0 + 1.2	EP	96.1	8.7	8.5	0.0
22. RAMBOD/ATRAZINE	4.14	EP	96.7	9.2	9.3	0.0
23. ATRAZINE	2.0	EP	98.9	8.5	8.8	0.0
24. IGRAN + ATRAZINE	2.0 + .8	EP	92.4	8.8	9.2	0.0
25. BLADDEX + RAMBOD	1.0 + 3.0	EP	90.1	8.2	9.0	0.0
T. ST. AVERAGES			94.5	8.5	9.2	0.0
L.S.P. (.05)			14.0	1.7	1.2	0.0

* WHEN APPLIED:

PRE (COMPLETE COVERAGE AFTER PLANTING)
EP (EARLY POST)

** WEED CONTROL RATING:

10 - COMPLETE CONTROL
0 - NO CONTROL

*** CROP INJURY RATING:

1 - COMPLETE KILL
0 - NO INJURY

Weed Control Research Plot Data

1. Location: Belleville, Kansas Cooperator: R. J. Raney
2. Soil: Texture Crete SCL pH --- Organic Matter ---
3. Planting: Date 5/31/73 Rate 1 seed every 5" Depth 2.0"
4. Crop Grain Sorghum Variety DeKalb C42C
5. Fertilizer Applied: N 88 P 48 K none
6. Seedbed Condition: () Excellent () Fair () Poor (X) ---
7. Replications 3 Plot Size 10 ft. x 30 ft.
8. Gallons of Spray per Acre 26 Carrier: (X) Water () Fert.
9. Date Herbicide Applied: Preplant Incorporated ---
Preemergent 6/1/73 Early Post 7/10/73
10. Precipitation after planting: ---

11. Date of Crop Injury Rating ---; Weed Control Rating ---
12. Crop Maturity (Silking, 50% headed, etc.) -----
13. Date Harvested 10/22/73
14. Summary: (Weed Control - predominant species, etc.)
Pigweed and crabgrass
15. Summary: (Crop Injury - stand reduction, stunting, chlorosis, etc.)
16. Summary: (Crop Yield)

KANSAS STATE UNIVERSITY
AGRONOMY DEPARTMENT

HERBICIDE PERFORMANCE
GRAIN SORGHUM 1973
BELLEVILLE

NO.	TREATMENT	LBS. A.I. PER A.	WHEN* APPLIED	BU. PER A.	WEED CONTROL RATING**		CROP*** INJURY
					BROADLEAF	GRASSY	
1.	RAMROD	4.0	PRE	29.1	1.7	3.0	0.0
2.	MODOWN + RAMROD	1.25 + 3.0	PRE	32.8	3.0	3.7	0.0
3.	IGRAN	2.4	PRE	33.5	8.0	7.7	0.0
4.	MODOWN + HERBAN	1.2 + 1.6	PRE	40.3	6.0	7.3	0.0
5.	MODOWN + BLADEX	1.0 + 1.0	PRE	40.9	4.0	7.0	0.0
6.	MODOWN + HERBAN	.8 + 1.6	PRE	43.6	3.0	7.3	0.0
7.	MODOWN	2.0	PRE	43.8	6.3	5.0	0.0
8.	BLADEX + RAMROD	1.0 + 3.0	PRE	45.6	3.0	8.0	0.0
9.	MODOWN	4.0	PRE	47.9	9.0	6.0	0.0
10.	IGRAN + GS13529	2.0 + .8	PRE	50.0	6.7	7.7	0.0
11.	RAMROD/ATRAZINE	4.14	PRE	50.7	7.3	8.7	0.0
12.	PROPAZINE	3.0	PRE	58.6	9.0	3.7	0.0
13.	IGRAN + ATRAZINE	2.0 + .8	PRE	59.9	8.3	7.7	0.0
14.	IGRAN + PROPAZINE	2.0 + .8	PRE	59.9	6.3	4.0	0.0
15.	BLADEX + PROPAZINE	1.0 + 2.0	PRE	61.5	9.0	8.3	0.0
16.	HERBAN 21A	2.4	PRE	62.8	9.0	7.0	0.0
17.	ATRAZINE	2.0	PRE	67.5	8.3	8.0	0.0
18.	NO TREATMENT			17.8	1.0	2.3	0.0
19.	HAND WEED			56.6	10.0	9.0	0.0
20.	LASSO + ATRAZINE	1.5 + 1.0	EP	12.0	2.0	2.7	0.0
21.	LASSO + ATRAZINE	2.0 + 1.2	EP	23.5	5.7	2.7	0.0
22.	RAMROD/ATRAZINE	4.14	EP	19.1	1.3	5.7	0.0
23.	ATRAZINE	2.0	EP	26.5	1.7	6.3	0.0
24.	IGRAN + ATRAZINE	2.0 + .8	EP	18.2	1.7	3.0	0.0
25.	BLADEX + RAMROD	1.0 + 3.0	EP	9.1	4.0	2.7	0.0
TEST AVERAGES				40.4	5.4	5.8	0.0
L.S.D. (.05)				22.1	2.6	2.9	0.0

* WHEN APPLIED: PRE (COMPLETE COVERAGE AFTER PLANTING)
EP (EARLY POST)

** WEED CONTROL RATING: 10 - COMPLETE CONTROL
0 - NO CONTROL

*** CROP INJURY RATING: 10 - COMPLETE KILL
0 - NO INJURY

Weed Control Research Plot Data

1. Location: Mankato, Kansas Cooperator: R. J. Raney
2. Soil: Texture Crete SCL pH -- Organic Matter --
3. Planting: Date 6/12/73 Rate 1 seed every 5" Depth 1.0"
4. Crop Grain Sorghum Variety NC+70X
5. Fertilizer Applied: N 88 P 48 K none
6. Seedbed Condition: (X) Excellent () Fair () Poor () ---
7. Replications 3 Plot Size 10 ft. x 30 ft.
8. Gallons of Spray per Acre 26 Carrier: (X) Water () Fert.
9. Date Herbicide Applied: Preplant Incorporated --
 Preemergent 6/12/73 Early Post 7/17/73
10. Precipitation after planting: --

11. Date of Crop Injury Rating --; Weed Control Rating --
12. Crop Maturity (Silking, 50% headed, etc.) -----
13. Date Harvested 10/24/73
14. Summary: (Weed Control - predominant species, etc.)
 Weeds present were dogbane, pigweed, punturevine, cocklebur, fox-tail and ticklegrass.
15. Summary: (Crop Injury - stand reduction, stunting, chlorosis, etc.)
16. Summary: (Crop Yield)

KANSAS STATE UNIVERSITY
AGRONOMY DEPARTMENT

PERFORMANCE HERBICIDES
GRAIN SORGHUM 1973
MANKATO

NO. TREATMENT	LBS. A.I. PER A.	WHEN* APPLIED	BU. PER A.	WEED CONTROL RATING**		CROP*** INJURY
				BROADLEAF	GRASSY	
1. MODOWN + HERBAN	1.2 + 1.6	PRE	46.7	4.3	8.7	0.0
2. MODOWN	4.0	PRE	48.9	6.7	9.3	0.0
3. IGRAN + PROPAZINE	2.0 + .8	PRE	51.5	6.7	9.0	0.0
4. IGRAN	2.4	PRE	52.5	5.3	8.7	0.0
5. RAMROD/ATRAZINE	4.14	PRE	59.5	6.7	9.0	0.0
6. IGRAN + GS13529	2.0 + .8	PRE	60.5	5.7	8.7	0.0
7. MODOWN	2.0	PRE	60.6	7.3	9.7	0.0
8. IGRAN + ATRAZINE	2.0 + .8	PRE	63.4	7.7	9.3	0.0
9. RAMROD	4.0	PRE	63.7	5.3	9.7	0.0
10. MODOWN + HERBAN	.8 + 1.6	PRE	67.4	5.3	9.3	0.0
11. MODOWN + BLADEX	1.0 + 1.0	PRE	68.1	6.7	9.7	0.0
12. ATRAZINE	2.0	PRE	68.2	7.7	8.7	0.0
13. PROPAZINE	3.0	PRE	68.2	7.3	8.7	0.0
14. BLADEX + PROPAZINE	1.0 + 2.0	PRE	68.7	6.3	9.0	0.0
15. BLADEX + RAMROD	1.0 + 3.0	PRE	68.8	4.3	9.7	0.0
16. HERBAN 21A	2.4	PRE	71.1	6.3	8.7	0.0
17. MODOWN + RAMROD	1.25 + 3.0	PRE	75.2	6.7	9.7	0.0
18. HAND WEED			68.0	8.0	9.3	0.0
19. NO TREATMENT			69.5	2.3	9.0	0.0
20. LASSO + ATRAZINE	1.5 + 1.0	EP	52.9	3.7	9.0	0.0
21. LASSO + ATRAZINE	2.0 + 1.2	EP	69.2	8.0	10.0	0.0
22. RAMROD/ATRAZINE	4.14	EP	63.8	8.3	9.3	0.0
23. ATRAZINE	2.0	EP	71.8	8.0	9.3	0.0
24. IGRAN + ATRAZINE	2.0 + .8	EP	42.0	8.3	9.3	0.0
25. BLADEX + RAMROD	1.0 + 3.0	EP	65.2	7.3	9.7	0.0
TEST AVERAGES			62.6	6.4	9.2	0.0
L.S.D. (.05)			23.9	3.1	1.0	0.0

* WHEN APPLIED: PRE (COMPLETE COVERAGE AFTER PLANTING)
EP (EARLY POST)

** WEED CONTROL RATING: 10 - COMPLETE CONTROL
0 - NO CONTROL

*** CROP INJURY RATING: 10 - COMPLETE KILL
0 - NO INJURY

Weed Control Research Plot Data

1. Location: Hutchinson, Kansas Cooperator: W. A. Moore
2. Soil: Texture Clark-Ost CL pH 6.2 Organic Matter 2.1
3. Planting: Date 7/19/73 Rate 1 seed every 5" Depth 2.0"
4. Crop Grain Sorghum Variety Frontier - Grassy - Grain Number 1
5. Fertilizer Applied: N -- P -- K --
6. Seedbed Condition: () Excellent (X) Fair () Poor () _____
7. Replications 3 Plot Size 10 ft. x 30 ft.
8. Gallons of Spray per Acre 20 Carrier: (X) Water () Fert.
9. Date Herbicide Applied: Preplant Incorporated _____
 Preemergent 7/19/73 Early Post 8/15/73
10. Precipitation after planting: _____

11. Date of Crop Injury Rating 8/15/73; Weed Control Rating 8/15/73
12. Crop Maturity (Silking, 50% headed, etc.) _____
13. Date Harvested 11/30/73
14. Summary: (Weed Control - predominant species, etc.)
 Predominant weed species present were crabgrass, foxtail, pigweed, carpetweed, puncturevine. Broadleaf weed control was much stronger than grassy weed control.
15. Summary: (Crop Injury - stand reduction, stunting, chlorosis, etc.)
 Modown caused considerable injury to the sorghum. This stand reduction was revealed in the yield.
16. Summary: (Crop Yield)
 Due to the dry conditions which delayed planting, a short season variety was planted. It matured but yielded poorly.

KANSAS STATE UNIVERSITY
AGRONOMY DEPARTMENT

HERBICIDE PERFORMANCE
GRAIN SORGHUM 1973
HUTCHINSON

NO. TREATMENT	LBS. A.I. PER A.	WHEN* APPLIED	BU. PER A.	WEED CONTROL RATING**		CROP*** INJURY
				BROADLEAF	GRASSY	
1. MODDOWN	4.0	PRE	9.6	9.8	8.0	2.7
2. MODDOWN + HERBAN	.8 + 1.6	PRE	11.9	9.5	9.2	0.5
3. MODDOWN	2.0	PRE	12.6	8.3	7.8	1.3
4. MODDOWN + RAMROD	1.25 + 3.0	PRE	13.7	7.7	9.3	0.8
5. MODDOWN + BLADEX	1.0 + 1.0	PRE	15.1	9.8	8.3	0.0
6. IGRAN + PROPAZINE	2.0 + .8	PRE	16.5	10.0	8.7	0.0
7. MODDOWN + HERBAN	1.2 + 1.6	PRE	16.6	8.7	9.2	0.2
8. HERBAN 21A	2.4	PRE	16.8	9.8	9.0	0.0
9. IGRAN + GS 13529	2.0 + .8	PRE	16.8	9.5	8.0	0.0
10. BLADEX + PROPAZINE	1.0 + 2.0	PRE	16.8	10.0	9.0	0.0
11. IGRAN	2.4	PRE	18.0	4.8	7.8	0.0
12. BLADEX + RAMROD	1.0 + 3.0	PRE	19.7	10.0	9.5	0.0
13. IGRAN + ATRAZINE	2.0 + .8	PRE	19.9	10.0	9.5	0.2
14. RAMROD	4.0	PRE	20.5	8.2	9.3	0.0
15. ATRAZINE	2.0	PRE	21.4	10.0	9.2	0.0
16. RAMROD/ATRAZINE	4.14	PRE	21.4	10.0	9.5	0.0
17. PROPAZINE	3.0	PRE	22.8	10.0	8.2	0.0
18. NO TREATMENT			11.6	0.0	1.7	0.0
19. HAND WEED			16.6	10.0	10.0	0.0
20. LASSO + ATRAZINE	1.5 + 1.0	EP	12.4	6.7	5.2	0.0
21. LASSO + ATRAZINE	2.0 + 1.2	EP	18.8	9.8	4.8	0.0
22. RAMROD/ATRAZINE	4.14	EP	20.2	10.0	2.5	0.0
23. ATRAZINE	2.0	EP	23.2	9.7	3.0	0.0
24. IGRAN + ATRAZINE	2.0 + .8	EP	16.8	10.0	7.2	0.7
25. BLADEX + RAMROD	1.0 + 3.0	EP	12.7	9.3	2.7	0.0
TEST AVERAGES			16.9	8.9	7.5	0.3
L.S.D. (.05)			7.2	3.0	2.8	0.6

* WHEN APPLIED: PRE (COMPLETE COVERAGE AFTER PLANTING)
EP (EARLY POST)

** WEED CONTROL RATING: 10 - COMPLETE CONTROL
0 - NO CONTROL

*** CROP INJURY RATING: 10 - COMPLETE KILL
0 - NO INJURY

Weed Control Research Plot Data

1. Location: Southwest Kansas Cooperator: Don Bonne
2. Soil: Texture Harney Silt Loam pH 6.8-7.0 Organic Matter 1.5-1.8
3. Planting: Date 6/13/73 Rate 1 seed every 8" Depth 1.5-2.0"
4. Crop Grain Sorghum Variety Asgrow Dorado M
5. Fertilizer Applied: N -- P -- K --
Surface
6. Seedbed Condition: () Excellent (X) Fair () Poor () Dry
7. Replications 3 Plot Size 10 ft. x 30 ft.
8. Gallons of Spray per Acre 20 Carrier: (X) Water () Fert.
9. Date Herbicide Applied: Preplant 6/7/73
 Preemergent 6/14/73 Early Post 7/9/73
10. Precipitation after planting: 6/21 - .05 6/28 - .61
7/73 - 1.42 8/73 - 5.46 9/73 - 6.76
10.73 - .90
11. Date of Crop Injury Rating --; Weed Control Rating --
12. Crop Maturity (Silking, 50% headed, etc.) _____
13. Date Harvested --
14. Summary: (Weed Control - predominant species, etc.)
 Redroot pigweed, barnyard grass, Russian thistle, crabgrass, kochia, devils claw.
15. Summary: (Crop Injury - stand reduction, stunting, chlorosis, etc.)
 Stand problem. Low moisture at planting.
16. Summary: (Crop Yield)
 Normal

KANSAS STATE UNIVERSITY
AGRONOMY DEPARTMENT

HERBICIDE PERFORMANCE
GRAIN SORGHUM 1973
SOUTHWEST KANSAS

NO. TREATMENT	LBS. A.I. PER A.	WHEN% APPLIED	BU. PER A.	WEED CONTROL RATING**		CROP*** INJURY
				BROADLEAF	GRASSY	
1. IGRAN	2.0	PRE	83.7	4.0	8.0	0.0
2. RAMROD + ATRAZINE	3.45	PRE	86.7	1.7	5.7	0.0
3. IGRAN + ATRAZINE	1.6 + 0.4	PRE	91.7	5.7	7.3	0.0
4. IGRAN + 13529	2.0 + 1.0	PRE	92.3	8.3	5.3	0.0
5. RAMROD + 2,4-D (EP)	4.0 + 0.5	PRE	94.0	7.0	8.3	0.0
6. PROPAZINE	2.0	PRE	98.3	8.0	9.0	0.0
7. RAMROD	4.0	PRE	103.3	5.7	9.0	0.0
8. IGRAN + PROPAZINE	1.6 + 0.4	PRE	111.3	7.7	6.3	0.0
9. DACAMINE	0.33	EP	68.0	5.3	0.3	0.0
10. LASSO + FOX 4	2.0 + 1.0	EP	85.3	8.3	8.3	0.0
11. ATRAZINE + (AGRI OIL)	1.5 + 1QT	EP	92.0	8.7	3.0	0.0
12. ATRAZINE	2.0	EP	92.7	8.7	8.0	0.0
13. LASSO + BLADEX	2.0 + 1.0	EP	95.0	6.3	6.3	0.0
14. LASSO + ATRAZINE	2.0 + 1.0	EP	95.7	7.0	7.3	0.0
15. BANVEL	0.25	EP	95.7	8.0	4.7	0.0
16. BROMINAL + 2,4-D	0.5 + 0.5	EP	104.0	10.0	7.7	0.0
17. HAND WEED			106.7	10.0	10.0	0.0
18. NO TREATMENT			69.7	3.0	1.7	0.0
19. PROPAZINE	2.0	PRE	99.0	8.7	8.3	0.0
TEST AVERAGES			92.9	6.9	6.6	0.0
L.S.D. (.05)			23.0	3.8	3.4	0.0

* WHEN APPLIED:

PRE (COMPLETE COVERAGE AFTER PLANTING)
EP (EARLY POST)

** WEED CONTROL RATING:

10 - COMPLETE CONTROL
0 - NO CONTROL

*** CROP INJURY RATING:

10 - COMPLETE KILL
0 - NO INJURY

Weed Control Research Plot Data

1. Location: St. John, Kansas Cooperator: M. Lundquist and G. TenEyck
2. Soil: Texture Sand pH 6.3 Organic Matter .7
3. Planting: Date 6/6/73 Rate 80,000 Depth 1.5"
4. Crop Grain Sorghum Variety DeKalb E59
5. Fertilizer Applied: N 193 P 46 K --
6. Seedbed Condition: (X) Excellent () Fair () Poor () _____
7. Replications 3 Plot Size 10 ft. x 30 ft.
8. Gallons of Spray per Acre 20 Carrier: (X) Water () Fert.
9. Date Herbicide Applied: Preplant Incorporated _____
Preemergent 6/6/73 Early Post _____
10. Precipitation after planting: June 14 - .15 June 29 - .07
Irrig.: June 16 - .5 (Total) July - 4.26 (Total) Aug. - 1.22
(Total) Sept. - 15.84 (Total) Oct. - 3.20
11. Date of Crop Injury Rating 6/27/73; Weed Control Rating 6/27/73
12. Crop Maturity (Silking, 50% headed, etc.) _____
13. Date Harvested Oct. 29
14. Summary: (Weed Control - predominant species, etc.)
Predominant weed species present were pigweed, puncturevine, and crabgrass. Broadleaf weed control was much stronger than grass control. Cultivation of plot area occurred on 6/27 and 7/12/73. Cultivation of plots did improve the weed control.
15. Summary: (Crop Injury - stand reduction, stunting, chlorosis, etc.)
No apparent crop injury occurred in any herbicide treatments.
16. Summary: (Crop Yield)
Yields were normal for Kansas. Herbicide treated plots that received a cultivation, out yielded plots receiving only a herbicide treatment.

KANSAS STATE UNIVERSITY
AGRONOMY DEPARTMENT

HERBICIDE PERFORMANCE
GRAIN SORGHUM 1973
ST JOHN

NO. TREATMENT	LRS. A.I. PER A.	WHEN* APPLIED	BU. PER A.	WEED CONTROL RATING**		CROP*** INJURY
				BROADLEAF	GRASSY	
1. IGRAN + BLADEX W/O	1.6 + .4	PRE	84.2	6.8	6.8	0.0
2. IGRAN W/O	2.0	PRE	97.8	8.7	5.8	0.0
3. IGRAN + BLADEX W/O	2.0 + .4	PRE	103.0	9.5	7.0	0.0
4. IGRAN + ATRAZINE W/O	2.0 + .4	PRE	104.2	9.5	8.0	0.0
5. IGRAN + PROPAZINE W/O	2.0 + .4	PRE	106.1	8.8	7.2	0.0
6. IGRAN + 13529 W/O	2.0 + 1.0	PRE	109.7	9.7	8.2	0.0
7. IGRAN + BLADEX W/1	1.6 + .4	PRE	112.9	7.7	7.2	0.0
8. IGRAN + ATRAZINE W/1	2.0 + .4	PRE	114.4	9.5	6.7	0.0
9. IGRAN + BLADEX W/2	2.0 + .4	PRE	115.8	9.2	7.8	0.0
10. IGRAN + BLADEX W/2	1.6 + .4	PRE	116.5	7.7	6.2	0.0
11. IGRAN W/2	2.0	PRE	116.7	8.5	6.8	0.0
12. IGRAN + BLADEX W/1	2.0 + .4	PRE	117.2	9.3	7.0	0.0
13. IGRAN + ATRAZINE W/2	2.0 + .4	PRE	117.7	8.8	6.3	0.0
14. IGRAN + PROPAZINE W/2	2.0 + .4	PRE	119.9	9.2	5.3	0.0
15. IGRAN + 13529 W/1	2.0 + 1.0	PRE	119.9	9.7	7.5	0.0
16. IGRAN + 13529 W/2	2.0 + 1.0	PRE	120.1	9.3	7.2	0.0
17. IGRAN + PROPAZINE W/1	2.0 + .4	PRE	125.1	9.7	7.5	0.0
18. IGRAN W/1	2.0	PRE	126.0	8.2	7.7	0.0
19. NO TREATMENT W/O			39.6	0.0	0.0	0.0
20. NO TREATMENT W/2			60.3	0.0	0.0	0.0
21. NO TREATMENT W/1			65.8	1.7	1.0	0.0
22. HAND WEED W/O			118.0	9.3	9.5	0.0
23. HAND WEED W/1			120.8	9.2	9.5	0.0
24. HAND WEED W/2			123.7	9.2	9.5	0.0
TEST AVERAGES			106.5	7.9	6.5	0.0
L.S.D. (.05)			11.2	2.0	1.5	0.0

* WHEN APPLIED: PRE (COMPLETE COVERAGE AFTER PLANTING)

** WEED CONTROL RATING: 10 - COMPLETE CONTROL
0 - NO CONTROL

*** CROP INJURY RATING: 10 - COMPLETE KILL
0 - NO INJURY