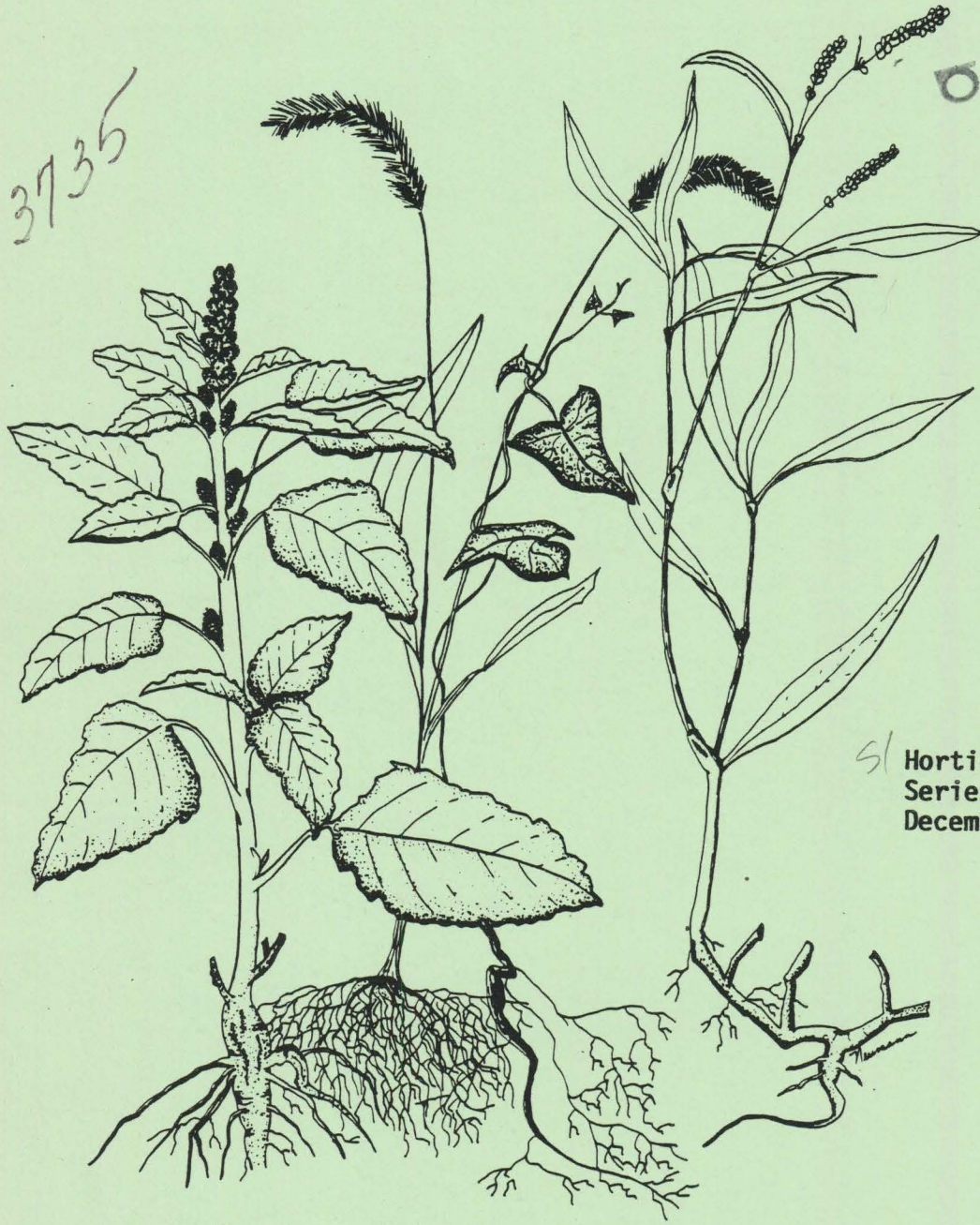
RESULTS OF WEED CONTROL STUDIES IN VEGETABLE CROPS—1987



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The Ohio State University
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Results of Field Experiments in Vegetable Crops-1987

Dr. Stanley F. Gorski[1]

General Materials and Methods

Abbreviations for herbicide application methods:

PPI	-Preplant incorporated
Pre	-Preemergence to the weed and crop
Del Pre	-Delayed preemergence, just prior to crop emergence
Post	-Postemergence to the weed and crop

Sprayer:
Treatments were applied with a CO_2 backpack type sprayer with a gpa of 29.2 and 30 psi. Other volumes used are noted in individual studies.

Weed Ratings:
Weed counts were made by counting the number of weeds in a 1 square foot wire frame. Counts were made approximately 30 days after treatment. All plots were cultivated and hoed regularly after weed counts were taken (except unweeded check).

Injury rating:
Visual rating was done on a percent injury rating with 0 denoting no injury and 100 indicating plant death.

Statistical Analysis:
Fishers LSD at the 5% level was performed on all experiments.
Plot design was a Randomized Complete Block (RCB) with 3,4, or 5 reps.

Activated Carbon:
An activated carbon/vermiculite safening system was used on some seeded crops (tomato). 1 lb. activated carbon was mixed with each cubic foot of vermiculite. This mixture was then used to fill the seed furrow. One ft^3 covers approximately 600 ft. of row.

Spray Additives:
Some postemergence applications were with crop oil concentrate (C.O.C.) or a nonionic surfactant (X-77).

Appreciation is given to the following people for their assistance in conducting these research studies:

Mr. Gerald Myers - Farm Superintendent, Columbus
Mr. Richard Hassel - Branch Manager, Celeryville
Mr. Chuck Willer - Branch Manager, Fremont
Mr. Steve Reiners - Graduate Research Associate
Ms. Karen Hael - Research Associate

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1986 Rainfall - Muck Crops Branch - Celleryville

Day	May	June	July	August
1			0.36	0.23
2	0.58	0.19	2.11	1.15
3	0.18	0.95	0.34	
4			0.01	0.46
5				0.02
6			0.25	
7		0.08		
8				
9		1.10		0.65
10				0.05
11				
12		0.15		
13		0.17	0.02	
14			1.76	
15				
16	0.34			
17				0.02
18				
19	1.73			
20	0.32	0.14		
21		0.30		0.49
22	0.29	0.76		0.94
23		0.15		
24		0.02		
25				
26		0.25		1.18
27	0.19	0.42		0.81
28		1.05		
29				
30		0.58		
31	0.10			0.30
TOTAL	3.73	5.26	4.85	6.30

1986 Rainfall - Lane Avenue Farm, Columbus

Day	May	June	July	August
1		0.32	0.96	
2	0.10	0.41	1.80	1.77
3	0.06	1.66		
4	0.15		0.30	0.25
5				
6			0.35	
7			0.05	
8				
9		0.07		
10				
11				.70
12		0.22		
13		0.08		
14			0.17	
15	0.30			
16		0.06	0.07	0.05
17				
18				
19	0.11			
20		.60		
21				0.04
22	0.19	0.54		
23				
24				
25	0.05			0.05
26	0.20			0.19
27	0.31			0.03
28		0.05		0.08
29				
30	0.30	0.33		
31	0.32			0.09
TOTAL	2.09	3.74	3.7	2.55

1986 Rainfall - Vegetable Crops Branch, Fremont

Day	May	June	July	August
1	0.26	1.06	0.18	0.14
2	0.28	0.39	0.02	0.19
3	0.33		0.30	
4				
5			1.56	
6		0.20	0.02	
7			0.40	
8		0.60		0.06
9			0.30	0.27
10				
11		0.10	0.12	
12		0.78		
13			0.82	
14	0.06			
15				
16				
17	0.06			
18	0.70			
19	0.17	1.04		
20		0.29		
21	0.07	0.05		0.64
22		0.06	0.04	0.42
23		0.07		
24				
25		0.22	1.11	0.19
26	0.14			1.06
27				0.57
28				0.52
29		0.43		
30	0.62	0.15		0.15
31				0.08
TOTAL	2.69	5.44	4.87	4.29

Table 1. Chemicals Used in Experiments

Common Name	Trade Name
Acetochlor*	Monsanto
Acifluorfen	Blazer
Alachlor	Lasso
Atrazine	Aatrex
BAS 51702*	BASF
Benefin	Balan
Bensulide	Prefar
Bromoxynil	Brominal
Butylate + R25788	Sutan +
Chloramben	Amiben
Chlorpropham	Furloe, Chloro IPC
Clomazone	Command
Clopropposydim	Selectone
Cycloate + R25788	Roneet +
DCPA	Dacthal
Diethatyl ethyl	Antor
DPX-Y-6202*	Assure
Ethalfluralin	Sonolan
EPTC	Eptam, Genep
EPTC + R25788	Eradicane
EPTC + R25788 + R33685	Eradicane Extra
Fluazifop-P	Fusilade 2000
Fluorochloridone	Racer
Lactofen	Cobra
Linuron	Lorox
Metholachlor	Dual
Metribuzin	Sencor/Lexone
Napropamide	Devrinol
Propachlor	Ramrod
PPG 1013*	PPG Industries
SC-1084*	ICI Americas Inc.
SD 095481*	DuPont
Sethoxydim	Poast
Thiobencarb	Bolero
Trifluralin	Treflan

*Experimental compound, name of manufacturer is listed in place of trade name.

Table 2. Weeds Mentioned in Report

Abbreviation	Common Name	Scientific Name
BLNS	Black nightshade	*Solanum nigrum*
BYGR	Barnyard Grass	*Echinochloa crusgalli*
COLQ	Common Lambsquarter	*Chenopodium album*
COPU	Common Purslane	*Portulaca oleracea*
CRGR	Crabgrass	*Digitaria spp.*
FAPA	Fall Panicum	*Panicum dichotomiflorum*
HAGA	Hairy Galinsoga	*Galinsoga ciliata*
LACG	Large Crabgrass	*Digitaria sanguinalis*
LIAM	Livid Amaranth	*Amaranthus lividis*
LOGR	Love Grass	*Eragrostis pilosa*
LTSW	Ladysthumb Smartweed	*Polygonum persicaria*
PIWE	Pigweed	*Amaranthus* spp.
RRPW	Redroot pigweed	*Amaranthus retroflexus*
VEMA	Venice Mallow	*Hibiscus trionum*
STGR	Stinkgrass	*Eragrostis pilosa*

TITLE: SNAP BEAN WEED CONTROL

LOCATION: Columbus
PERSONNEL: S.F. Gorski & G. Myers

PLOT INFORMATION

A.) Soil Type: Brookston Silty Clay Loam, 2% O.M., pH 6.0
B.) Cultivar: Tendercrop
C.) Date Planted: May 29
D.) Rating Date: June 29
E.) Date Harvested: July 27
F.) Plot Size: 5 ft. by 25 ft.
G.) Plot Design: RCB with 4 reps

HERBICIDE APPLICATION DATA

A.) Date: May 29
B.) Type: PPI
C.) Soil Moisture, Surf: Moderate
D.) Weather
Wind (MPH): Calm
Sky Cover: P. Cloudy
Air Temp: 85
E.) Growth Stage, Crop: Preemergence

Weed: Preemergence

HERBICIDE APPLICATION EQUIPMENT

Sprayer: CO2 Backpack
GPA: 29.2
PSI: 30
Tips: 8002
Nozzle Spacing: 18 in.
Height: 18 in.

INCORPORATION EQUIPMENT: rototiller cutting 1-2 inches deep

COMMENTS: Trifluralin failed to provide acceptable weed control. This is unusual and not normal. Due to the heavy weed pressure in this treatment the bean plants failed to set pods. Weed control and yields were acceptable for all other treatments.

SNAP BEAN WEED CONTROL

HERBICIDE NAME		RATE #ai/A	GROWTH STAGE	WEED COUNTS PER SQ. FT. BYGR	COLQ	VEMA	SMGA	COPU	RRPW	YIELD LBS.
WEEDY				6.0	7.3	4.0	1.5	3.3	0.8	0.0
WEEDED				0.0	0.0	0.0	0.0	0.0	0.0	6.4
TRIFLURALIN	4.0E	1.00	PPI	3.3	1.8	2.8	0.8	3.0	0.8	0.0
ALACHLOR	4.0MT	2.00	PRE	0.0	0.0	1.0	0.0	0.0	0.0	7.9
CLOMAZONE	6.0E	0.38	PPI							
ALACHLOR	4.0MT	2.00	PRE	0.0	0.0	0.5	0.0	0.0	0.0	8.6
CLOMAZONE	6.0E	0.50	PPI							
ALACHLOR	4.0MT	2.50	PRE	0.0	0.0	1.0	0.0	0.0	0.0	7.7
CLOMAZONE	6.0E	0.38	PPI							
ALACHLOR	4.0MT	2.50	PRE	0.0	0.0	1.0	0.0	0.0	0.0	5.7
CLOMAZONE	6.0E	0.50	PPI							
ALACHLOR	4.0MT	3.00	PRE	0.0	0.0	0.5	0.0	0.0	0.0	6.8
CLOMAZONE	6.0E	0.38	PPI							
ALACHLOR	4.0MT	3.00	PRE	0.0	0.0	0.0	0.0	0.0	0.0	6.1
CLOMAZONE	6.0E	0.50	PPI							
LEAST SIGNIFICANT DIFF.(.05)			=	4.8	1.8	1.9	1.0	2.0	0.7	2.9
STANDARD DEVIATION			=	3.3	1.2	1.3	0.7	1.4	0.5	2.2
COEFF. OF VARIABILITY			=	120	123	106	68	97	78	37

TITLE: POSTEMERGENCE WEED CONTROL IN CABBAGE

LOCATION: Fremont
PERSONNEL: S.F. Gorski & C. Willer

PLOT INFORMATION

A.)	Soil Type:	Sandy Loam, 3% O.M.
B.)	Cultivar:	King Cole
C.)	Date Planted:	May 28
D.)	Rating Date:	June 26 & July 22
E.)	Date Harvested:	September 16
F.)	Plot Size:	3 ft. by 25 ft.
G.)	Plot Design:	RCB with 4 reps

HERBICIDE APPLICATION DATA

A.)	Date:	June 18	July 16
B.)	Type:	Post 1	Post 2
C.)	Soil Moisture, Surf:	Dry	Wet
D.)	Weather		
	Wind (MPH):	Calm	Calm
	Sky Cover:	Clear	Clear
	Air Temp:	84	70
E.)	Growth Stage, Crop:	3-4 leaf	12-14 leaf
	Weed:	COPU & COLQ-2-4"	
			Clean Cultivated
		RRPW--3-5"	
		BYGR--2-4"	

HERBICIDE APPLICATION EQUIPMENT

Sprayer:	CO2 Backpack
GPA:	29.2
PSI:	30
Tips:	8002
Nozzle Spacing:	18 in.
Height:	18 in.

COMMENTS: Broadleaf weed control was similar for all RS-010 treatments. COPU = 50%, COLQ = 100%, RRPW = 100%, and BYGR = 10% control. Fluazifop provided 100% control of BYGR. A more comprehensive weed study with RS-010 may be found in the tomato section. The second application of RS-010 produced some minor chlorosis on the cabbage leaves. This was on the lower more horizontal leaves and was not an economic problem.

POSTEMERGENCE WEED CONTROL IN CABBAGE

PEST. HERBICIDE	FORM	RATE #ai/A	GROWTH STAGE	YIELD LBS.
WEEDED	0.75W	6.00		62.4
RS-010	0.45W	0.90	POST 1	84.0
RS-010	0.45W	0.68	POST 1	74.6
RS-010	0.45W	0.45	POST 2	
RS-010	0.45W	0.90	POST 1	66.8
RS-010	0.45W	0.90	POST 2	
FUSILADE	1.00E	0.19	POST 1	72.4
C.O.C.	P	1.00	POST 1	
LEAST SIGNIFICANT DIFF. (.05) =				17.91
STANDARD DEVIATION =				11.63
COEFF. OF VARIABILITY =				16.14

TITLE: CELERY PREEMERGENCE WEED CONTROL

LOCATION: Celeryville
PERSONNEL: S.F. Gorski & R. Hassell

PLOT INFORMATION

A.) Soil Type: Carlisle Muck, 75% O.M., pH 5.3
B.) Cultivar: Florida 683
C.) Date Planted: May 14
D.) Rating Date: June 18
E.) Date Harvested: August 6
F.) Plot Size: 5 ft. by 18 ft.
G.) Plot Design: RCB with 4 reps

HERBICIDE APPLICATION DATA

A.)	Date:	May 14	June 18
B.)	Type:	Pre	Post
C.)	Soil Moisture, Surf:	Moderate	Moderate
D.)	Weather		
	Wind (MPH):	5 MPH	Calm
	Sky Cover:	P. Cloudy	Sunny
	Air Temp:	83	87
E.)	Growth Stage, Crop:	Pre	12 inches
	Weed:	Pre	12 inches

HERBICIDE APPLICATION EQUIPMENT

Sprayer: CO2 Backpack
GPA: 29.2
PSI: 30
Tips: 8002
Nozzle Spacing: 18 in.
Height: 18 in.

COMMENTS: Weed counts were taken prior to the postemergence application of fluazifop. Grass control with this treatment was 100%. Linuron did not provide commercially acceptable weed control. Increasing the rate of RE-40885 had little effect on weed control. Chloramben did not provide the degree of weed control that we would normally expect. This may be due to increased rainfall the week following application.

CELERY PREEMERGENCE WEED CONTROL

HERBICIDE NAME		RATE #ai/A	WEED COUNTS PER SQ. FT. LACG	STGR	LIAM	RRPW	COPU	YIELD LBS.
WEEDY			2.0	2.3	3.8	0.3	5.5	00.0
WEEDED			0.0	0.0	0.0	0.0	0.0	22.0
LINURON	0.50W	1.50	2.3	2.8	2.0	1.8	6.5	20.9
RE-40885	0.80W	0.50	1.3	1.8	3.3	0.5	4.0	30.9
RE-40885	0.80W	0.75	2.3	1.3	1.8	0.0	5.8	28.5
RE-40885	0.80W	1.25	1.0	0.8	2.0	0.0	4.0	22.4
CHLORAMBEN	0.75D	1.00	1.3	1.3	4.3	0.5	3.5	25.5
FLUAZIFOP-P[1]	1.00E	.188						
CROP OIL CONC.	%	1.00						
LEAST SIGNIFICANT DIFF. (.05) =			2.0	1.6	1.9	1.4	2.9	8.5
STANDARD DEVIATION =			1.4	1.0	1.3	0.9	2.0	5.7
COEFF. OF VARIABILITY =			94.8	74.7	48.9	222.4	47.0	26.6

[1] Postemergence application

TITLE: HIGH SUGAR SWEET CORN TOLERANCE TO HERBICIDES

LOCATION: Columbus
PERSONNEL: S.F. Gorski & M. Bennett

PLOT INFORMATION

A.) Soil Type: Brookston Silty Clay Loam, 2% O.M., pH 6.0
B.) Cultivar: Various
C.) Date Planted: May 1
D.) Rating Date: May 22
E.) Date Harvested: None
F.) Plot Size: 6 ft. by 25 ft.
G.) Plot Design: RCB with 3 reps

HERBICIDE APPLICATION DATA

A.) Date: May 1
B.) Type: PPI & Pre
C.) Soil Moisture, Surf: Moderate
D.) Weather
Wind (MPH): Calm
Sky Cover: Cloudy
Air Temp: 60
E.) Growth Stage, Crop: Pre
Weed: Pre

HERBICIDE APPLICATION EQUIPMENT

Sprayer: CO2 Backpack
GPA: 29.2
PSI: 30
Tips: 8002
Nozzle Spacing: 18 in.
Height: 18 in.

INCORPORATION EQUIPMENT: rototiller cutting 3-4"

COMMENTS: This was a germination and early growth study. Therefore yields were not obtained. The data contains a considerable amount of bird damage. This could not be seperated from treatment effects. Caution is therefore advised.

HIGH SUGAR SWEET CORN TOLERANCE TO HERBICIDES

HERBICIDE NAME		RATE #ai/A	GROWTH STAGE	PLANT COUNTS 3 WEEKS AFTER PLANTING [1] A	B	C	D	E	F	G	H	I	J
METOLACHLOR	8.00E	2.00	PRE	7.0	13.7	5.7	9.7	13.0	23.0	9.3	8.0	8.0	11.3
EPTC+R-25788	6.70E	3.00	PPI	13.0	13.0	6.0	6.3	6.3	16.0	7.3	6.0	1.7	4.7
BUTYLATE+R-25788	6.70E	4.00	PPI	13.3	13.7	5.7	7.3	8.7	11.3	9.0	9.3	4.3	4.3
ALACHLOR	4.00E	2.00	PRE	11.3	10.7	7.7	5.7	12.7	20.7	9.0	9.7	8.3	10.3
LEAST SIGNIFICANT DIFF. (.05)			=	13.7	5.6	6.1	6.3	8.7	6.5	6.2	6.3	6.5	8.5
STANDARD DEVIATION			=	6.9	2.8	3.1	3.2	4.4	3.3	3.1	3.2	3.3	4.3
COEFF. OF VARIABILITY			=	61.5	22.1	48.9	43.7	43.0	18.8	35.9	38.8	58.9	55.7

[1] VARIETIES:

A. SNOWBELLE (F)
B. SNOWBELLE (R)
C. SWEETIE 73
D. SWEETIE 76
E. SWEETIE 82
F. HONEYCOMB
G. SUGARLOAF
H. CRISP & SWEET 710
I. CRISP & SWEET 720
J. HOW SWEET IT IS

TITLE: SWEET CORN PREEMERGENCE WEED CONTROL

LOCATION: Columbus
PERSONNEL: S.F. Gorski & G. Myers

PLOT INFORMATION

A.) Soil Type: Brookston Silty Clay Loam 2% O.M., pH 6.0
B.) Cultivar: Gold Cup
C.) Date Planted: May 1
D.) Rating Date: June 5
E.) Date Harvested: July 24
F.) Plot Size: 6 ft. by 25 ft.
G.) Plot Design: RCB with 3 reps

HERBICIDE APPLICATION DATA

A.) Date: May 1
B.) Type: Preemergence

C.) Soil Moisture, Surf: Moist
D.) Weather
Wind (MPH): Calm
Sky Cover: Cloudy
Air Temp: 60
E.) Growth Stage, Crop: Preemergence

Weed: Preemergence

HERBICIDE APPLICATION EQUIPMENT

Sprayer: CO2 Backpack
GPA: 29.5
PSI: 30
Tips: 8002
Nozzle Spacing: 18 in.
Height: 18 in.

COMMENTS: Weed control was acceptable for all chemical treatments.
Yields were acceptable and without comment.
Yields for one treatment are low and are due to a poor replicat

SWEET CORN PREEMERGENCE WEED CONTROL

HERBICIDE NAME		RATE #ai/a	WEED COUNTS PER SQ. FT. COLQ	COPU	RRPW	YIELD #EARS	LBS.
WEEDY			1.7	2.3	1.3	13.3	17.4
WEEDED			0.0	0.0	0.0	30.0	18.3
METOLACHLOR	8.0E	2.0	0.3	0.0	0.0	27.3	17.6
ATRAZINE	4.0L	1.6					
METOLACHLOR	8.0E	4.0	0.0	0.0	0.0	31.0	19.7
ATRAZINE	4.0L	3.2					
CGA 180937	7.8E	2.0	0.0	0.0	0.0	28.3	17.6
ATRAZINE	4.0L	1.6					
CGA 180937	7.8E	4.0	0.0	0.0	0.0	21.7	13.9
ATRAZINE	4.0L	3.2					
ALACHLOR	4.0E	2.0	0.7	0.0	0.0	25.7	15.9
ATRAZINE	4.0L	1.6					
ALACHLOR	4.0E	4.0	1.0	0.0	0.0	26.7	16.3
ATRAZINE	4.0L	3.2					
METOLACHLOR	6.0L	2.0	0.0	0.0	0.0	26.3	11.4
ATRAZINE[1]		1.6					
METOLACHLOR	6.0L	4.0	0.0	0.0	0.0	30.0	18.6
ATRAZINE[1]		3.2					
CGA 180937	5.9L-D	2.0	0.3	0.0	0.0	17.3	10.4
ATRAZINE[2]		1.6					
CGA 180937	5.9L-D	4.0	0.0	0.0	0.0	24.3	20.4
ATRAZINE[2]		1.6					
LEAST SIGNIFICANT DIFF.(.05)		=	1.0	0.9	1.0	16.2	8.2
STANDARD DEVIATION		=	0.6	0.5	0.6	9.7	4.9
COEFF. OF VARIABILITY		=	234.2	356.8	692.8	48.5	39.7

[1] Prepackaged mixture under the trade name Bicep

[2] Prepackaged mixture under the trade name Bicep-D

TITLE: SWEET CORN POSTEMERGENCE WEED CONTROL

LOCATION: Columbus
PERSONNEL: S.F. Gorski & G. Myers

PLOT INFORMATION

A.)	Soil Type:	Brookston Silty Clay Loam, 2% O.M., ph 6.0
B.)	Cultivar:	Gold Cup
C.)	Date Planted:	May 1
D.)	Rating Date:	June 15
E.)	Date Harvested:	July 24
F.)	Plot Size:	6 ft. by 25 ft.
G.)	Plot Design:	RCB with 3 reps

HERBICIDE APPLICATION DATA

A.)	Date:	June 5
B.)	Type:	Post
C.)	Soil Moisture, Surf:	Moist
D.)	Weather	
	Wind (MPH):	Calm
	Sky Cover:	Cloudy
	Air Temp:	65
E.)	Growth Stage, Crop:	1 ft.
	Weed:	COLQ-2-6"
		CATH-4-6"
		FAPA-3-6"

HERBICIDE APPLICATION EQUIPMENT

Sprayer:	CO2 Backpack
GPA:	29.2
PSI:	30
Tips:	8002
Nozzle Spacing:	18 in.
Height:	18 in.

COMMENTS: The entire experimental area received a preemergence treatment of 1.5 lbs a.i./A metolachlor after planting. FAPA control was 100%. Larger COLQ was not effectively controlled. Cath control varied depending on the treatment

SWEET CORN POSTEMERGENCE WEED CONTROL

HERBICIDE NAME			RATE #ai/A	% CONTROL COLQ 4"-6"	% CONTROL COLQ 2"-4"	% CONTROL CATH	YIELD MARKET NO.	YIELD MARKET WT.(LBS)
WEEDED				100.0	100.0	100.0	30.0	18.33
BENTAZON	4.0	E	0.50	41.7	95.0	87.4	34.7	20.97
ATRAZINE	90	D	0.50					
CROP OIL CONC.		%	1.00					
BENTAZON	4.0	E	0.50	46.7	95.0	87.6	41.0	24.33
ATRAZINE	90	D	0.50					
BCH815S	1.0	E	0.25					
BENTAZON	4.0	E	0.50	38.3	96.7	77.8	32.0	19.17
ATRAZINE	90	D	0.50					
28% NITROGEN	1.0	E	1.00					
BROMOXYNIL	4.0	E	0.25	50.0	95.0	30.0	33.3	20.57
ATRAZINE	90	D	0.50					
LEAST SIGNIFICANT DIFF.(5%)			=	11.6	7.4	54.3	17.7	10.6
STANDARD DEVIATION			=	6.3	4.0	25.9	9.7	5.8
COEFF. OF VARIABILITY			=	13.7	5.0	39.4	70.3	28.6

TITLE: SWEET CORN THISTLE STUDY

LOCATION: Columbus
PERSONNEL: S.F. Gorski & G. Myers

PLOT INFORMATION

A.)	Soil Type:	Brookston Silty Clay Loam, 2% O.M., pH 6.0
B.)	Cultivar:	Gold Cup
C.)	Date Planted:	June 8
D.)	Rating Date:	June 8 & July 6
E.)	Date Harvested:	August 17
F.)	Plot Size:	6 ft. by 30 ft.
G.)	Plot Design:	RCB with 3 reps

HERBICIDE APPLICATION DATA

A.)	Date:	May 29	June 8
B.)	Type:	Preplant	Preemergence
C.)	Soil Moisture, Surf:	Moderate	Moderate
D.)	Weather		
	Wind (MPH):	Calm	5 MPH
	Sky Cover:	P. Cloudy	Clear
	Air Temp:	85	80
E.)	Growth Stage, Crop:	Pre	Pre
	Weed:	CATH-4-6"	Preemergent
		COLQ--6-8"	
		RRPW-6"	

HERBICIDE APPLICATION EQUIPMENT

Sprayer:	CO2 Backpack
GPA:	29.2
PSI:	30
Tips:	8002
Nozzle Spacing:	18 in.
Height:	18 in.

COMMENTS: The addition of ammonium sulfate (AMS), atrazine, or Def to glyphosate significantly improved the burndown of Canadian Thistle. However, regrowth was not reduced by this increased burndown. All treatments were statistically similar for CATH regrowth. Yields were acceptable and similar.

SWEET CORN THISTLE STUDY

HERBICIDE NAME		RATE #ai/A	GROWTH STAGE	June 8 % CONTROL CATH	June 8 % CONTROL OTHER	July 6 #CATH PER PLOT	YIELDS MKT #	YIELDS MKT WT (LBS.)	YIELDS CULL #	YIELDS CULL WT (LBS.)
WEEDY				0.0	0.0	81.3	1.7	0.9	1.0	0.3
WEEDED				100.0	100.0	0.0	14.7	8.8	13.7	3.4
GLYPHOSATE	3.00E	0.75	PRPL	93.3	95.0	25.0	17.0	9.9	10.0	2.6
ALACHLOR	4.00E	2.00	PRE							
ATRAZINE	0.90D	2.00	PRE							
GLYPHOSATE	3.00E	0.75	PRPL	98.3	90.0	18.7	15.7	9.8	14.0	4.3
AMS	%	2.00	PRPL							
ALACHLOR	4.00E	2.00	PRE							
ATRAZINE	0.90D	2.00	PRE							
GLYPHOSATE	3.00E	0.75	PRPL	100.0	100.0	48.7	17.3	10.6	10.3	2.9
AMS	%	2.00	PRPL							
ATRAZINE	0.90D	2.00	PRPL							
ALACHLOR	4.00E	2.00	PRE							
GLYPHOSATE	3.00E	0.75	PRPL	100.0	96.7	25.7	19.0	11.6	12.7	3.3
AMS	%	2.00	PRPL							
ATRAZINE	0.90D	2.00	PRPL							
METOLACHLOR	8.00E	2.00	PRE							
GLYPHOSATE	3.00E	0.75	PRPL	100.0	85.0	30.3	18.0	10.5	8.3	2.8
DEF	6.00E	0.10	PRPL							
ALACHLOR	4.00E	2.00	PRE							
ATRAZINE	0.90D	2.00	PRE							
GYLPHOSATE	3.00E	0.75	PRPL	100.0	100.0	44.3	16.7	9.2	9.7	2.8
DEF	6.00E	0.10	PRPL							
ATRAZINE	0.90D	2.00	PRPL							
ALACHLOR	4.00E	2.00	PRE							
LEAST SIGNIFICANT DIFF. (.05)				= 4.8	9.8	21.1	6.5	4.3	11.7	2.8
STANDARD DEVIATION				= 2.8	5.6	23.5	3.7	2.4	6.7	1.6
COEFF. OF VARIABILITY				= 3.1	6.7	48.6	24.8	27.5	67.1	56.4

TITLE: LETTUCE PREEMERGENCE WEED CONTROL

LOCATION: Celeryville
PERSONNEL: S.F. Gorski & R. Hassell

PLOT INFORMATION

A.)	Soil Type:	Carlisle Muck, 75% O.M., pH5.3
B.)	Cultivar:	Tanya Boston
C.)	Date Planted:	May 14
D.)	Rating Date:	June 4
E.)	Date Harvested:	on yields available due to flooding
F.)	Plot Size:	5 ft. by 18 ft.
G.)	Plot Design:	RCB with 4 reps

HERBICIDE APPLICATION DATA

A.)	Date:	May 14	June 18
B.)	Type:	Pre	Post
C.)	Soil Moisture, Surf:	Moderate	Moderate
D.)	Weather		
	Wind (MPH):	5 MPH	Calm
	Sky Cover:	P. Cloudy	Clear
	Air Temp:	83	87
E.)	Growth Stage, Crop:	Pre	6-8 inches
	Weed:	Pre	12 inches

HERBICIDE APPLICATION EQUIPMENT

Sprayer:	CO2 Backpack
GPA:	29.2
PSI:	30
Tips:	8002
Nozzle Spacing:	18 in.
Height:	18 in.

COMMENTS: Lettuce had no tolerance for RE-40885. All other crop injury was in the form of plant stunting. Weed control varied depending on the treatment. The postemergence application of fluazifop was made after the weed counts were made. This treatment provided 100% grass control. The study was flooded due to heavy rainfall and yields were not possible.

LETTUCE PREEMERGENCE WEED CONTROL

HERBICIDE NAME		RATE #ai/A	WEED COUNTS PER SQ. FT. LACG	STGR	LTSW	RRPW	COPU	PHYTO[1]
WEEDY			4.5	5.3	0.8	0.8	18.0	10.0
WEEDED			0.0	0.0	0.0	0.0	0.0	10.0
RE-40885	0.80W	0.50	2.3	0.0	1.0	1.0	5.8	1.5
RE-40885	0.80W	0.75	0.8	0.8	0.5	0.3	1.5	0.0
RE-40885	0.80W	1.25	0.0	0.0	0.5	0.0	1.0	0.0
CHLORAMBEN	0.75D	1.00	1.3	2.0	1.5	0.3	8.8	9.3
CHLORAMBEN RE-40885	0.75D 0.80W	0.75 0.50	0.8	0.5	0.3	0.3	0.5	0.0
THIOBENCARB	8.00E	4.00	0.3	1.0	1.3	0.5	12.3	9.0
CHLORAMBEN THIOBENCARB	0.75D 8.00E	0.75 4.00	2.5	0.0	0.5	0.3	7.0	8.5
CHLORAMBEN CHLORPROPHAM	0.75D 4.00E	0.75 2.00	2.3	1.3	0.8	0.5	6.8	8.5
CHLORPROPHAM THIOBENCARB	4.00E 8.00E	2.00 4.00	1.5	1.0	0.3	0.3	7.3	8.3
CHLORPROPHAM THIOBENCARB CHLORAMBEN	4.00E 8.00E 0.75D	2.00 4.00 1.00	1.8	0.3	0.3	0.3	7.3	8.8
PRONAMIDE THIOBENCARB CHLORPROPHAM	0.50W 8.00E 4.00E	2.00 4.00 2.00	1.5	1.3	0.3	0.5	7.5	8.3
CHLORAMBEN PRONAMIDE CHLORPROPHAM	0.75D 0.50W 4.00E	0.75 2.00 2.00	1.5	0.8	0.3	0.3	3.3	9.3
CHLORAMBEN FLUAZIFOP-P[2] CROP OIL CONC.	0.75D 1.00E %	1.00 .188 1.00	1.0	1.0	1.0	0.0	5.8	8.8
LEAST SIGNIFICANT DIFF. 5% =			2.3	3.8	1.2	1.1	3.7	1.3
STANDARD DEVIATION =			1.6	2.3	0.9	0.7	2.6	0.9
COEFF.OF VARIABILITY =			1.1	2.3	140.8	223.2	41.7	13.4

[1] Phytotoxcity ratings are on a 0-10 scale with 10 representing no effect and 0 representing complete kill.

[2] Applied postemergence

TITLE: LETTUCE VARIETAL TOLERANCE TO CHLORAMBEN

LOCATION: Celeryville
PERSONNEL: R. Hassell & S.F. Gorski

PLOT INFORMATION

A.) Soil Type: Carlisle Muck, 75% O.M., pH 5.3
B.) Cultivar: Numerous
C.) Date Planted: July 9
D.) Rating Date: August 6
E.) Date Harvested: September 8
F.) Plot Size: 5 ft. by 18 ft.
G.) Plot Design: RCB with 5 reps

HERBICIDE APPLICATION DATA

A.) Date: July 9
B.) Type: Preemergence

C.) Soil Moisture, Surf: Moderate
D.) Weather
Wind (MPH): Calm
Sky Cover: Clear
Air Temp: 85
E.) Growth Stage, Crop: Pre

Weed: Pre

HERBICIDE APPLICATION EQUIPMENT

Sprayer: Tractor mounted pump
GPA: 50
PSI: 30
Tips: 8002
Nozzle Spacing: 18 in.
Height: 18 in.

COMMENTS: The addition of chlorpropham to chloramben did not significantly improve weed control. Chlorpropham by itself did not provide the same high level of weed control that chloramben provided. Crop phytotoxicity ratings varied and did not provide a clear trend as to increased/decreased crop injury.

LETTUCE VARIETY TOLERANCE TO CHLORAMBEN (PREEMERGENCE)

HERBICIDE NAME		RATE #ai/A	WEED COUNTS/FT COPU −	COPU +	LACG −	LACG +	PHYTOTOXCITY RATING[1] ENDI −	ENDI +	ROMA −	ROMA +	BIBB −	BIBB +	LEAF −	LEAF +
CHLORPROPHAM[2]	4.00E	4.00												
UNTREATED			20.3	6.8	2.0	0.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
CHLORAMBEN	0.75D	0.50	4.8	1.5	1.3	0.8	10.0	9.8	10.0	10.0	10.0	10.0	9.8	10.0
CHLORAMBEN	0.75D	1.00	1.3	0.5	0.3	0.0	10.0	8.5	9.3	9.8	8.3	8.5	9.5	10.0
CHLORAMBEN	0.75D	2.00	0.3	0.3	0.0	0.0	9.0	5.5	3.8	6.0	5.8	4.8	7.3	9.0
CHLORAMBEN	0.75D	3.00	0.0	0.3	0.0	0.0	5.8	2.0	3.5	2.0	4.0	1.8	8.8	9.0
CHLORAMBEN	0.75D	4.00	0.0	0.0	0.0	0.0	3.8	1.8	2.8	1.0	2.5	0.5	6.0	9.0
LSD 5%		=	4.1	1.8	0.8	0.6	0.9	1.9	1.2	0.9	1.7	1.5	2.7	0.0
STANDARD DEVIATION		=	2.7	1.2	0.6	0.4	0.6	1.3	0.8	0.6	1.1	1.0	1.8	0.0
COEFF. OF VARIABILITY		=	61.4	76.4	95.6	313	7.4	20.8	11.9	9.5	16.9	16.5	21.0	0.0

[1] Phyto ratings based on 0-10 scale with 10 = no injury and 0 = death.
VARIETIES:
ENDI = 'Salad King' Endive
ROMA = 'Valmaine'
BIBB = 'Summer Bibb'
LEAF = 'Slobolt'

[2] (-) = Exclusion of chlorpropham
(+) = Inclusion of chlorpropham

TITLE: WEED CONTROL IN TRANSPLANT TOMATOES

LOCATION: Fremont
PERSONNEL: S.F. Gorski & C. Willer

PLOT INFORMATION

A.)	Soil Type:	Sandy Loam, 3% O.M.
B.)	Cultivar:	Heinz 1810
C.)	Date Planted:	June 11
D.)	Rating Date:	July 30
E.)	Date Harvested:	September 22
F.)	Plot Size:	5 ft. by 30 ft.
G.)	Plot Design:	RCB with 4 reps

HERBICIDE APPLICATION DATA

A.)	Date:	July 16	July 22
B.)	Type:	Post	Post7
C.)	Soil Moisture, Surf:	Wet	Moderate
D.)	Weather		
	Wind (MPH):	Calm	Calm
	Sky Cover:	Clear	P. Cloudy
	Air Temp:	70	85
E.)	Growth Stage, Crop:	12-18'	18"
	Weed:	None	None

HERBICIDE APPLICATION EQUIPMENT

Sprayer:	Co2 Backpack
GPA:	29.2
PSI:	30
Tips:	8002
Nozzle Spacing:	18 in.
Height:	18 in.

COMMENTS: Due to the light weed pressure a second study was established in Columbus to obtain weed data. Please see the next page for this information. This study was then conducted to obtain tomato phyto data only. Injury from RS-010 was in the form of chlorosis and some necrosis. Some plant stunting occured at the higher rates. Acifluorfen plus sethoxydim caused necrosis.

WEED CONTROL IN TRANPLANT TOMATOES

HERBICIDE	FORM	RATE #ai/A	GROWTH STAGE	PHYTO	YIELD LBS.
WEEDY				10.00	176.25
WEEDED				10.00	183.13
RS-010	0.45W	0.45	POST	8.88	192.13
RS-010	0.45W	.675	POST	7.88	164.38
RS-010	0.45W	0.90	POST	6.50	154.63
RS-010	0.45W	1.80	POST	4.75	148.13
RS-010	0.45W	0.45	POST	8.75	190.50
RS-010	0.45W	0.45	POS7		
RS-010	0.45W	.675	POST	8.00	181.25
RS-010	0.45W	0.45	POS7		
SETHOXYDIM	1.50E	0.15	POST	10.00	190.75
CROP OIL CONC.		1.00	POST		
SETHOXYDIM	1.50E	0.15	POST	10.00	215.88
BCH815S		1.00	POST		
SETHOXYDIM	1.50E	0.15	POST	9.63	194.50
BCH815S		1.00	POST		
NITROGEN-28	1.00E	1.00	POST		
SETHOXYDIM	1.50E	0.15	POST	10.00	194.50
CROP OIL CONC.		1.00	POST		
SETHOXYDIM	1.50E	0.15	POS7		
CROP OIL CONC.		1.00	POS7		
SETHOXYDIM	1.50E	0.15	POST	9.38	189.75
METRIBUZIN	0.75D	0.25	POST		
CROP OIL CONC.		1.00	POST		
SETHOXYDIM	1.50E	0.15	POST	9.75	186.88
METRIBUZIN	0.75D	0.25	POST		
BCH815S		1.00	POST		
SETHOXYDIM	1.50E	0.15	POST	9.88	170.88
METRIBUZIN	0.75D	0.25	POST		
BCH815S		1.00	POST		
NITROGEN-28	1.00E	1.00	POST		
ACIFLUORFEN	2.00L	.125	POST	7.13	186.00
SETHOXYDIM	1.50E	0.15	POST		
CROP OIL CONC.		1.00	POST		
ACIFLUORFEN	2.00L	.125	POS7		
METRIBUZIN	1.50E	0.15	POS7		
CROP OIL CONC.		1.00	POS7		
FLUAZIFOP-P	1.00E	.188	POST	10.0	188.75
CROP OIL CONC.		1.00	POST		
LEAST SIGNIFICANT DIFF. (.05)			=	.78	42.5
STANDARD DEVIATION			=	.55	30.1
COEFF. OF VARIABILITY			=	6.2	16.5

TITLE: WEED CONTROL FOR TRANSPLANT TOMATOES

LOCATION: Columbus
PERSONNEL: S.F. Gorski

PLOT INFORMATION

A.) Soil Type: Brookston Silty Clay Loam, 2% O.M., pH 6.0
B.) Cultivar:
C.) Date Planted:
D.) Rating Date: July 15
E.) Date Harvested:
F.) Plot Size: 5 ft. by 25 ft.
G.) Plot Design: RCB with 3 reps

HERBICIDE APPLICATION DATA

A.) Date:	July 5	July 12
B.) Type:	Post	Post 7
C.) Soil Moisture, Surf:	Wet	Moderate
D.) Weather		
Wind (MPH):	Calm	Calm
Sky Cover:	Cloudy	P. Cloudy
Air Temp:	80	80
E.) Growth Stage, Crop:		
Weed:	various--see table	

HERBICIDE APPLICATION EQUIPMENT

Sprayer: CO2 backpack
GPA: 29.2
PSI: 30
Tips: 8002
Nozzle Spacing: 18 in.
Height: 18 in.

WEED CONTROL FOR TRANPLANT TOMATOES

HERBICIDE NAME		RATE #ai/A	GROWTH STAGE	% WEED CONTROL BLNS 0"-2"	BLNS 2"-4"	BLNS 4"-7"	COPU 0"-3"	COPU 3"-6"	RRPW 2"-4"	HAGA 0"-4"	FAPA 0"-6"	BYGR 0"-6"
WEEDY				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WEEDED				100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
RS-010	0.45W	0.45	POST	76.3	20.0	0.0	20.0	0.0	81.3	35.0	0.0	0.0
RS-010	0.45W	.675	POST	94.8	42.5	2.5	67.5	27.5	94.8	38.8	0.0	0.0
RS-010	0.45W	0.90	POST	98.0	89.8	60.0	70.0	30.0	93.8	35.0	0.0	0.0
RS-010	0.45W	1.80	POST	98.0	95.8	56.3	70.0	32.5	98.0	99.0	0.0	0.0
RS-010	0.45W	0.45	POST	81.3	31.3	0.0	33.8	0.0	92.5	51.3	0.0	0.0
RS-010	0.45W	0.45	POST									
RS-010	0.45W	.675	POST	94.8	53.8	2.5	67.5	33.8	99.0	45.0	0.0	0.0
RS-010	0.45W	0.45	POST									
SETHOXYDIM	1.50E	0.15	POST	0.0	0.0	0.0	0.0	0.0	0.0	0.0	99.0	99.0
CROP OIL CONC.	P	1.00	POST									
SETHOXYDIM	1.50E	0.15	POST	0.0	0.0	0.0	0.0	0.0	0.0	0.0	99.0	99.0
BCH815S	P	1.00	POST									
SETHOXYDIM	1.50E	0.15	POST	0.0	0.0	0.0	0.0	0.0	0.0	0.0	99.0	99.0
BCH815S	P	1.00	POST									
28 % NITROGEN	1.00E	1.00	POST									
SETHOXYDIM	1.50E	0.15	POST	0.0	0.0	0.0	0.0	0.0	0.0	0.0	99.0	99.0
CROP OIL CONC.	P	1.00	POST									
SETHOXYDIM	1.50E	0.15	POST									
CROP OIL CONC.	P	1.00	POST									
SETHOXYDIM	1.50E	0.15	POST	20.0	0.0	0.0	98.0	91.0	97.0	97.0	99.0	99.0
METRIBUZIN	0.75D	0.25	POST									
CROP OIL CONC.	P	1.00	POST									
SETHOXYDIM	1.50E	0.15	POST	22.5	0.0	0.0	98.0	93.3	96.0	94.8	95.0	95.0
METRIBUZIN	0.75D	0.25	POST									
BCH815S	P	1.00	POST									
SETHOXYDIM	1.50E	0.15	POST	12.5	0.0	0.0	97.0	90.0	97.0	97.0	98.0	98.0
METRIBUZIN	0.75D	0.25	POST									
BCH815S	P	1.00	POST									
28% NITROGEN	1.00E	1.00	POST									
ACIFLUORFEN	2.00L	.125	POST	60.0	36.3	7.5	51.0	35.0	22.5	15.0	96.8	96.3
SETHOXYDIM	1.50E	0.15	POST									
CROP OIL CONC.	P	1.00	POST									
METRIBUZIN	2.00L	.125	POST									
SETHOXYDIM	1.50E	0.15	POST									
CROP OIL CONC.	P	1.00	POST									
FLUAZIFOP-P	1.00E	.188	POST	0.0	0.0	0.0	0.0	0.0	0.0	0.0	99.0	99.0
CROP OIL CONC.	P	1.00	POST									
LEAST SIGNIFICANT DIFF. (.05)			=	15.5	18.1	15.0	13.7	15.7	2.58	4.95	1.61	1.53
STANDARD DEVIATION			=	10.9	12.8	10.6	9.7	11.1	1.82	3.50	1.13	1.09
COEFF. OF VARIABILITY			=	26.1	49.1	83.4	22.6	37.6	3.38	8.90	2.31	2.21

TITLE: ONION WEED CONTROL

LOCATION: Celeryville
PERSONNEL: S.F. Gorski & R. Hassell

PLOT INFORMATION

A.) Soil Type: Carlisle Muck, 75% O.M., pH 5.3
B.) Cultivar: White Spear
C.) Date Planted: July 16
D.) Rating Date: July 30
E.) Date Harvested: Plot flooded-- no harvest
F.) Plot Size: 5 ft. by 18 ft.
G.) Plot Design: RCB with 4 reps

HERBICIDE APPLICATION DATA

A.) Date: July 16
B.) Type: Preemergence

C.) Soil Moisture, Surf: Moist
D.) Weather
Wind (MPH): Calm
Sky Cover: Clear
Air Temp: 75
E.) Growth Stage, Crop: Preemergence

Weed: Preemergence

HERBICIDE APPLICATION EQUIPMENT

Sprayer: CO2 Backpack
GPA: 29.2
PSI: 30
Tips: 8002
Nozzle Spacing: 18 in.
Height: 18 in.

COMMENTS: This study was established several times and flooded out each time. Therefore yield data is not available. At the time of rating (July 30) there was no injury to the onion seedlings. Several days later the plot flooded and was abandon. Common purslane was the only weed species present. None of the treatments significantly reduced the weed population.

ONION WEED CONTROL

HERBICIDE NAME		RATE #ai/A	GROWTH STAGE	WEED COUNTS/FT² COPU
WEEDY				3.5
WEEDED				0.0
BAS 514	0.50W	0.50	PRE	1.5
BAS 514	0.50W	1.00	PRE	2.3
RE-40885	0.80W	0.50	PRE	1.8
RE-40885	0.80W	0.75	PRE	3.0
RE-40885	0.80W	1.25	PRE	2.0

LEAST SIGNIFICANT DIFF. (.05)	=	2.6
STANDARD DEVIATION	=	1.8
COEFF. OF VARIABILITY	=	103.3

TITLE: PEPPER WEED CONTROL

LOCATION: Columbus
PERSONNEL: S.F. Gorski & G. Myers

PLOT INFORMATION

A.) Soil Type: Brookston Silty Clay Loam, 2% O.M., pH 6.0
B.) Cultivar: Sweet Bell
C.) Date Planted: May 26
D.) Rating Date: June 24
E.) Date Harvested: Multiple
F.) Plot Size: 5 ft. by 25 ft.
G.) Plot Design: RCB with 3 reps

HERBICIDE APPLICATION DATA

A.) Date: May 26
B.) Type: PPI
C.) Soil Moisture, Surf: Dry
D.) Weather
Wind (MPH): Calm
Sky Cover: Clear
Air Temp: 85
E.) Growth Stage, Crop: Transplants
Weed: Preemergence

HERBICIDE APPLICATION EQUIPMENT

Sprayer: CO2 Backpack
GPA: 29.2
PSI: 30
Tips: 8002
Nozzle Spacing: 18 in.
Height: 18 in.

INCORPORATION EQUIPMENT: Rototiller cutting 1-2 inches

COMMENTS: There did not appear to be any differences between the two formulations of napropamide.

PEPPER WEED CONTROL

HERBICIDE NAME	RATE #ai/A	GROWTH STAGE	WEED COUNTS PER SQ. FT. BYGR	LACG	COPU	RRPW	COLQ	SMGA	YIELD MKT NO.	YIELD MKT WT.(LBS)
WEEDY			2.7	4.0	5.7	4.0	1.7	2.0	27.0	7.2
WEEDED			0.0	0.0	0.0	0.0	0.0	0.0	45.0	11.9
TRIFLURLIN 4.00E	1.00	PPI	0.3	0.7	3.7	1.3	0.0	6.0	65.0	16.3
NAPROPAMIDE 4.00F	2.00	PPI	1.0	1.0	2.3	0.7	0.0	1.7	46.3	11.5
NAPROPAMIDE 0.50W	2.00	PPI	1.0	1.3	3.0	1.0	0.0	1.0	57.3	14.7
LEAST SIGNIFICANT DIFF. (.05)=			2.3	3.5	2.3	2.2	1.8	2.6	24.7	8.2
STANDARD DEVIATION =			1.2	1.9	1.2	1.1	0.9	1.4	13.1	4.4
COEFF. OF VARIABILITY =			121	134	41.5	81.9	279	64.0	27.3	35.5

TITLE: POTATO POSTEMERGENCE WEED CONTROL

LOCATION: Columbus
PERSONNEL: S.F. Gorski & G. Myers

PLOT INFORMATION

A.)	Soil Type:	Brookston Silty Clay Loam, 2% O.M., pH 6.0
B.)	Cultivar:	Red Norland
C.)	Date Planted:	May 5
D.)	Rating Date:	June 11 & June 26
E.)	Date Harvested:	August 6
F.)	Plot Size:	6 ft. by 25 ft.
G.)	Plot Design:	RCB with 4 reps

HERBICIDE APPLICATION DATA

A.)	Date:	June 5	June 15
B.)	Type:	Post 3-6	Post 8-12
C.)	Soil Moisture, Surf:	Moist	Moist
D.)	Weather		
	Wind (MPH):	Calm	Calm
	Sky Cover:	P. Cloudy	Clear
	Air Temp:	65	75
E.)	Growth Stage, Crop:	3-6"	8-12"
	Weed:	None	None

HERBICIDE APPLICATION EQUIPMENT

Sprayer:	CO2 Backpack
GPA:	29.2
PSI:	30
Tips:	8002
Nozzle Spacing:	18 in.
Height:	18 in.

COMMENTS: The entire plot area was treated with 1.5 lbs ai/A metolachlor after planting. A weed infestation never developed so all treatments were applied for potato phytotoxictiy data only. Yields were lower with treatments containing metribuzin. Most treatments reduced yields somewhat. This is not surprising since red skinned potatoes are somewhat more sensative to herbicides.

POTATO POSTEMERGENCE WEED CONTROL

HERBICIDE NAME		RATE #ai/A	GROWTH STAGE(IN.)	YIELD (LBS)
WEEDY				21.1
WEEDED				26.0
METRIBUZEN	0.75D	0.25	8-12	18.5
SETHOXYDIM	1.50E	0.25	8-12	
METRIBUZIN	0.75D	0.25	8-12	18.5
METRIBUZIN	0.75D	0.25	8-12	18.1
FLUAZIFOP-P	1.00E	0.20	8-12	
BENTAZON	4.00E	1.00	3-6	20.0
BENTAZON	4.00E	1.00	3-6	26.2
CROP OIL CONC.	%	1.00	3-6	
BENTAZON	4.00E	1.00	3-6	17.7
28% NITROGEN	1.00E	1.00	3-6	
BENTAZON	4.00E	1.00	8-12	23.1
BENTAZON	4.00E	1.00	8-12	18.0
CROP OIL CONC.	%	1.00	8-12	
BENTAZON	4.00E	1.00	8-12	20.3
28% NITROGEN	1.00E	1.00	8-12	
BENTAZON	4.00E	0.75	3-6	21.7
METRIBUZIN	0.75D	0.25	3-6	

LEAST SIGNIFICANT DIFF. (.05)	= 7.2
STANDARD DEVIATION	= 4.4
COEFF. OF VARIABILITY	= 43.3

TITLE: POTATO PREEMERGENCE WEED CONTROL

LOCATION: Columbus
PERSONNEL: S.F. Gorski & G. Myers

PLOT INFORMATION

A.) Soil Type: Brookston Silty Clay Loam, 2% O.M., pH 6.0
B.) Cultivar: Superior
C.) Date Planted: May 7
D.) Rating Date: June 5
E.) Date Harvested: August 5
F.) Plot Size: 6 ft. by 25 ft.
G.) Plot Design: RCB with 4 reps

HERBICIDE APPLICATION DATA

A.) Date: May 7
B.) Type: Preemergence

C.) Soil Moisture, Surf: Moderate
D.) Weather
Wind (MPH): 5 MPH
Sky Cover: P. Cloudy
Air Temp: 70
E.) Growth Stage, Crop: Preemergence

Weed: Preemergence

HERBICIDE APPLICATION EQUIPMENT

Sprayer: CO2 Backpack
GPA: 29.2
PSI: 30
Tips: 8002
Nozzle Spacing: 18 in.
Height: 18 in.

COMMENTS: Weed control was similar for all rates of RE-40885 tested. There was no visible injury to the potato foliage from any treatment.

POTATO PREEMERGENCE WEED CONTROL

HERBICIDE NAME		RATE #ai/A	WEED COUNTS PER SQ. FT. BYGR	COLQ	RRPW	COPU	YIELD LBS.
WEEDY			4.8	0.8	2.0	3.8	10.9
WEEDED			0.0	0.0	0.0	0.0	17.9
RE-40885	0.80W	0.25	1.8	0.8	0.5	0.3	18.3
RE-40885	0.80W	0.50	2.5	0.8	0.3	0.3	18.2
RE-40885	0.80W	0.75	2.5	0.5	0.0	0.0	23.9
METOLACHLOR	8.00E	2.00	0.3	0.0	0.0	0.0	17.9
LSD (0.05)		=	1.6	0.8	0.6	0.6	7.7
STANDARD DEVIATION		=	1.1	0.5	0.4	0.4	6.1
COEFF. OF VARIABILITY		=	57	112	154	159	45

TITLE: POTATO VINE DESSICATION STUDY

LOCATION: Columbus
PERSONNEL: S.F. Gorski & G. Myers

PLOT INFORMATION

A.) Soil Type: Brookston Silty Clay Loam 2% O.M., pH 6.0
B.) Cultivar: Kathadin
C.) Date Planted: April 29
D.) Rating Date: September 8
E.) Date Harvested: September 8
F.) Plot Size: 6 ft. by 25 ft.
G.) Plot Design: RCB with 3 reps

HERBICIDE APPLICATION DATA

A.) Date:	May 1	September 4
B.) Type:	Pre	Post
C.) Soil Moisture, Surf:	Moderate	Dry
D.) Weather		
Wind (MPH):	Calm	Calm
Sky Cover:	Clear	Clear
Air Temp:	70	80
E.) Growth Stage, Crop:	Pre	Vines Dying
Weed:		

HERBICIDE APPLICATION EQUIPMENT

Sprayer: CO2 Backpack
GPA: 29.5
PSI: 30
Tips: 8002
Nozzle Spacing: 18 in.
Height: 18 in.

COMMENTS: Potato vines were dying when the post treatments were applied. Weather conditions were perfect for vine desiccation during the experimental period (sunny days, 80° days with 60° nights). Examination of the stem end of the tubers revealed no stem end discolorization 4 days after treatment. Soil conditions were extremely dry and discolorization may have been present if the tubers remained in the soil for 10-14 days. Diquat at 0.5 lbs. produced excellent vine and leaf kill. Oxyfluorfen & diquat at 0.25 lbs. each was better than diquat (0.25#) alone. Oxyfluorfen alone was not effective. Propanil plus carbaryl killed approximately 50%--60% of the leaves but had little effect on the vines.

POTATO VINE DESICCATION STUDY

HERBICIDE NAME		RATE #ai/A	% KILL LEAF	% KILL VINE
DIESEL OIL		3GPA	13.3	5.0
OXYFLUORFEN	1.6E	0.12	11.7	3.3
AG-98	%	0.50		
OXYFLUORFEN	1.6E	0.20	13.3	8.3
AG-98	%	0.50		
OXYFLUORFEN	1.6E	0.50	18.3	20.0
AG-98	%	0.50		
OXYFLUORFEN	1.6E	0.12	58.3	31.7
DIQUAT	2.0E	0.12		
AG-98	%	0.50		
OXYFLUORFEN	1.6E	0.12	85.0	55.0
DIQUAT	2.0E	0.25		
AG-98	%	0.50		
OXYFLUORFEN	1.6E	0.25	90.0	61.7
DIQUAT	2.0E	0.25		
AG-98	%	0.50		
DIQUAT	2.0E	0.25	61.7	11.7
AG-98	%	0.50		
DIQUAT	2.0E	0.50	93.3	80.0
AG-98	%	0.50		
PROPANIL	3.0E	2.00	46.7	11.7
CARBARYL	4.0F	0.38		
CROP OIL CONC.	%	1.00		
PROPANIL	3.0E	4.00	63.3	11.7
CARBARYL	4.0F	0.75		
CROP OIL CONC.	%	1.00		
LEAST SIGNIFICANT DIFF. 5%		=	13.9	15.5
STANDARD DEVIATION		=	8.4	9.3
COEFF. OF VARIABILITY		=	25.6	52.5

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