

MSU Weed Science Research Program

Tillage Comparison with Micro-rate II

Trial ID: SB11-06EL
 Conducted: T-16 south

Study Dir.: Sprague, Powell, Bollman
 Investigator: Christy Sprague

Date Planted: 4/11/2006
Variety: Crystal 963
Population: 4 3/8" seed spacing
Soil Type: Loam
Plot Size: 40 X 45 FT
Row Spacing: 30 IN
No. of Reps: 4
% OM: 3.2
pH: 6.7
Design: SPLIT-PLOT

Tillage: Fall moldboard plow 11/12/05
 Fall chisel plow 11/12/05
 soil finish 4/11/06
Fertilizer: 3/27- broadcast 200 lb Urea (90# N)
 4/11 110# 19-19-19 with planter

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
2.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
3.	CYPES	NUTSEDGE, YELLOW	CYPERUS ESCULENTUS L.
4.	DIGSA	CRABGRASS, LARGE	DIGITARIA SANGUINALIS (L.) SCOP.
5.	AMAPO	AMARANTH, POWELL	AMARANTHUS POWELLII S.WATS.
6.	SOLPT	NIGHTSHADE, EASTERN BLACK	SOLANUM PTYCANTHUM DUNAL
Crop	Code	Common Name	
1.	BETVU	SUGAR BEET	

Application Description

	A	B	C	D	E
Application Timing:	PRE	Micro1	Micro2	Micro3	Micro4
Date Treated:	4/11/2006	4/24/2006	5/8/2006	5/23/2006	6/2/2006
Time Treated:	8:00 pm	3:30 pm	6:00 pm	9:45 am	12:30 pm
% Cloud Cover:	100	10	50	5	100
Air Temp., Unit:	68 F	68 F	73 F	74 F	74 F
% Relative Humidity:	39	50	36	33	39
Wind Speed/Unit/Dir:	10 mph S	5 mph NW	6 mph S	2 mph NE	2 mph NE
Soil Temp., Unit:	52 F	51 F	70 F	50 F	73 F
Soil/Leaf Surface M:	- 1	5 5	5 5	5 5	5 5
Soil Moist (1=w 5=d):	1	4		4	4

Crop Stage at Each Application

	A	B	C	D	E
Crop Name:	BETVU	BETVU	BETVU	BETVU	BETVU
Height (In.):	-	1/8"	0-1/2"	1/8"-1"	1-1.5"
Stage (L):	-	cotyledon	0-2	coty	3-4 leaf

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Weed Stage at Each Application

	A	B	C	D	E
Weed 1 Name:	ABUTH	ABUTH	ABUTH	ABUTH	ABUTH
Height (In.):	-	1/4"	1/8"-1/4"	1/2"-1"	.25"
Stage (L):	-	cotyledon	coty-1	3-4	cot
Weed 2 Name:	CHEAL	CHEAL	CHEAL	CHEAL	CHEAL
Height (In.):	-	1/4"	1/4"	-	.25-1.5"
Stage (L):	-	cotyledon	cotyledon	-	2-6
Weed 3 Name:	CYPES	CYPES	CYPES	CYPES	CYPES
Height (In.):	-	-	1 1/2"	-	1-2"
Stage (L):	-	-	3	-	6-7
Weed 4 Name:	DIGSA	DIGSA	DIGSA	DIGSA	DIGSA
Height (In.):	-	-	-	-	.5-.75"
Stage (L):	-	-	-	-	2
Weed 5 Name:	AMAPO	AMAPO	AMAPO	AMAPO	AMAPO
Height (In.):	-	-	-	-	.25"
Stage (L):	-	-	-	-	cot
Weed 6 Name:	SOLPT	SOLPT	SOLPT	SOLPT	SOLPT
Height (In.):	-	-	-	-	.125-.5"
Stage (L):	-	-	-	-	cot-4

Weed Density (plants/sq. ft.)

	1	2	3	4	5
Date:	7/21/2006	7/21/2006	7/21/2006	7/21/2006	7/21/2006
Weed Name:	CHEAL	ABUTH	ANGR	AMARE	POLPY
Density:	2	<1	10	<1	<1

Application Equipment

Appl	Sprayer	Speed	Nozzle	Nozzle	Nozzle	Nozzle	Boom	GPA	Carrier	PSI
	Type	MPH	Type	Size	Height	Spacing	Width			
A	CUB	3.8	AirMix	11003	20"	20"	100"	19	water	27
B	YellowCUB	4.0	Flat Fan	8003	20"	20"	120"	15	water	25
C	YellowCUB	4.0	Flat Fan	8003	20"	20"	120"	15	water	25
D	YellowCUB	4.0	Flat Fan	8003	20"	20"	120"	15	water	25
E	YellowCUB	4.0	Flat Fan	8003	20"	20"	120"	15	water	25

Comments: 5/8/06- Due to poor stand <50 beets/100 row, Crystal 963 sugarbeet were replanted at 4 3/8" spacing.

5/10/06- Liberty (32 oz) + AMS (2 lb) applied to all treatments.

Previous Crop: Corn. Previous Herbicides: Roundup, Distinct.

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Weed Code		Crop Code		Rating Data Type		Rating Unit		Rating Date		Trt-Eval Interval				
BETVU		BETVU		BETVU		BETVU		BETVU		BETVU				
injury		injury		injury		injury		injury		injury				
percent		percent		percent		percent		percent		percent				
6/12/2006		6/12/2006		6/12/2006		6/12/2006		6/12/2006		6/23/2006				
62 DA-A		62 DA-A		62 DA-A		62 DA-A		62 DA-A		73 DA-A				
ANGR		ANGR		ANGR		ANGR		ANGR		ANGR				
CHEAL		CHEAL		CHEAL		CHEAL		CHEAL		CHEAL				
AMARE		AMARE		AMARE		AMARE		AMARE		AMARE				
ABUTH		ABUTH		ABUTH		ABUTH		ABUTH		ABUTH				
6/12/2006		6/12/2006		6/12/2006		6/12/2006		6/12/2006		6/23/2006				
62 DA-A		62 DA-A		62 DA-A		62 DA-A		62 DA-A		73 DA-A				
Trt No.	Treatment Name	Form Conc	Rate	Grow Unit	Stg	Appl Code	BETVU injury percent	ANGR control percent	CHEAL control percent	AMARE control percent	ABUTH control percent	BETVU injury percent	ANGR control percent	CHEAL control percent
1	Moldboard						0	69	78	80	69	0	65	78
1	Untreated													
2	Moldboard						15	99	90	99	85	14	99	92
2	Dual Magnum	7.64	1.33	pt/a	Pre	A								
3	Moldboard						0	94	89	99	84	0	99	92
3	Nortron	4	3	pt/a	Pre	A								
4	Moldboard						10	98	95	99	91	1	98	95
4	Nortron	4	3	pt/a	Pre	A								
4	Pyramin	65	4.7	lb/a	Pre	A								
5	Chisel Plow						0	63	76	78	74	0	49	71
5	Untreated													
6	Chisel Plow						9	99	91	99	86	16	99	90
6	Dual Magnum	7.64	1.33	pt/a	Pre	A								
7	Chisel Plow						3	97	91	99	88	6	98	92
7	Nortron	4	3	pt/a	Pre	A								
8	Chisel Plow						11	99	93	99	90	11	96	97
8	Nortron	4	3	pt/a	Pre	A								
8	Pyramin	65	4.7	lb/a	Pre	A								
LSD (P=.05)							4.6	7.2	4.8	4.1	6.3	8.0	15.7	7.5
Standard Deviation							3.2	4.9	3.3	2.8	4.3	5.4	10.7	5.1
CV							53.18	5.44	3.72	2.99	5.14	89.36	12.19	5.76

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Weed Code		AMARE		ABUTH		BETVU	BETVU	BETVU	BETVU	BETVU			
Crop Code	Rating Data Type	Rating Unit	Rating Date	Trt-Eval Interval	control	control	count	% sugar	yield	RWST	RWSA		
		precent	percent	100' row	6/23/2006	6/23/2006	10/9/2006	10/9/2006	10/9/2006	10/9/2006	10/9/2006		
		73 DA-A	73 DA-A	181 DA-A	181 DA-A	181 DA-A	181 DA-A	181 DA-A	181 DA-A	181 DA-A	181 DA-A		
Trt No.	Treatment Name	Form Conc	Rate	Unit	Grow Stg	Appl Code							
1	Moldboard						81	74	141	16.9	18.3	241	4421
1	Untreated												
2	Moldboard						99	92	128	16.5	19.8	235	4684
2	Dual Magnum	7.64	1.33	pt/a	Pre	A							
3	Moldboard						99	88	138	16.0	24.0	226	5404
3	Nortron	4	3	pt/a	Pre	A							
4	Moldboard						99	94	142	16.0	24.9	226	5637
4	Nortron	4	3	pt/a	Pre	A							
4	Pyramin	65	4.7	lb/a	Pre	A							
5	Chisel Plow						89	81	148	17.6	16.9	261	4393
5	Untreated												
6	Chisel Plow						99	87	143	17.1	21.0	248	5228
6	Dual Magnum	7.64	1.33	pt/a	Pre	A							
7	Chisel Plow						99	92	143	17.9	23.1	263	6105
7	Nortron	4	3	pt/a	Pre	A							
8	Chisel Plow						99	95	141	17.5	22.2	255	5688
8	Nortron	4	3	pt/a	Pre	A							
8	Pyramin	65	4.7	lb/a	Pre	A							
LSD (P=.05)							11.7	13.1	26.2	0.95	3.72	18.9	1038.5
Standard Deviation							7.9	8.9	17.8	0.64	2.53	12.9	706.1
CV							8.31	10.17	12.67	3.81	11.89	5.26	13.59