

WEED MANAGEMENT AFTER A MISSED MICRO-RATE APPLICATION

Trial ID: SB02-06BB
Conducted: Saginaw Bean & Beet

Study Dir.: Christy Sprague/ Gary Powell
Investigator: Christy Sprague

Date Planted: 4/11/2006
Variety: Crystal 993
Population: 4 3/8" seed spacing
Soil Type: Silty Clay
Plot Size: 10 X 30 FT

Row Spacing: 30 IN
No. of Reps: 4
% OM: 3.3
pH: 7.8
Design: RANDOMIZED COMPLETE BLOCK

Tillage: Fall Chisel Plow. Spring Field Cultivate.
Fertilizer: Broadcast application of 125#/acre N on March 15, 2006

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
2.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI
3.	AMBEL	RAGWEED, COMMON	AMBROSIA ELATIOR L.
4.	POLPY	SMARTWEED, PENNSYLVANIA	POLYGONUM PENNSYLVANICUM
5.	THLAR	PENNYCRESS, FIELD	THLASPI ARVENSE L.
Crop	Code	Common Name	
1.	BETVU	BEET, SUGAR	

Application Description

	A	B	C	D	E
Application Timing:	Micro 1	0.25" wds	0.5" wds	+ 3 days	Micro 3
Date Treated:	4/27/2006	5/17/2006	5/22/2006	5/25/2006	5/30/2006
Time Treated:	11:30 am	3:30 pm	1:15 pm	2:00 pm	2:00 pm
% Cloud Cover:	5	95	10	50	55
Air Temp., Unit:	52 F	77 F	53 F	82 F	90 F
% Relative Humidity:	36	50	25	61	40
Wind Speed/Unit/Dir:	9 mph NE	5 mph SW	9 mph NW	6 mph S	6 mph S
Soil Temp., Unit:	51 F	64 F	54 F	66 F	81 F
Soil/Leaf Surface M:	5 -	5 5	5 5	3 5	5 5
Soil Moist (1=w 5=d):	4	1	3	5	5

	F
Application Timing:	Micro 4
Date Treated:	6/8/2006
Time Treated:	12:00 pm
% Cloud Cover:	10
Air Temp., Unit:	83 F
% Relative Humidity:	21
Wind Speed/Unit/Dir:	2 mph NE
Soil Temp., Unit:	70 F
Soil/Leaf Surface M:	5/5
Soil Moist (1=w 5=d):	4

	A	B	C	D	E
Crop Name:	BETVU	BETVU	BETVU	BETVU	BETVU
Height (In.):	1/8"-1/4"	1.5-3"	2-4"	2-4"	3-5"
Stage (L):	coty	1-4	2-6	2-6	4-8
	F				
Crop Name:	BETVU				
Height (In.):	7-12"				
Stage (L):	8-12				

Weed Stage at Each Application

	A	B	C	D	E
Weed 1 Name:	CHEAL	CHEAL	CHEAL	CHEAL	CHEAL
Height (In.):	1/8"-1/4"	1/2"-3"	1/2"-4"	1/2"-2"	1/2"-3"
Stage (L):	coty-2	4-14	6-14	6-14	4-many
Weed 2 Name:	ABUTH	ABUTH	ABUTH	ABUTH	ABUTH
Height (In.):	1/4"	1"-1 1/2"	1"-2"	-	-
Stage (L):	coty	1-4	1-4	-	-

Appl	Sprayer Type	Application Equipment								
		Speed MPH	Nozzle Type	Nozzle Size	Nozzle Height	Nozzle Spacing	Boom Width	GPA	Carrier	PSI
A	Cub	3.8	AirMix	11003	18"	20"	100"	19	H20	27
B	Cub	3.8	AirMix	11003	20"	20"	100"	19	H20	27
C	Cub	3.8	AirMix	11003	20"	20"	100"	19	H20	27
D	Cub	3.8	AirMiw	11003	20"	20"	100"	19	H20	27
E	Cub	3.8	AirMix	11003	22"	20"	100"	19	H20	27
F	Cub	3.8	AirMix	11003	22"	20"	120"	19	water	27

Comments: Previous Crop: Soybeans. Previous Herbicide: Roundup.

June 12- 3.5 oz/acre Amistar applied

July 7- 0.5 oz/acre Topsin applied

July 19- 9.2 oz/acre Headline applied

July 31- 13 oz/acre Emminent applied

August 15- 9.2 oz/acre Headline applied

SUMMARY: A standard micro-rate treatment of Betamix at 8 fl oz/A + Stinger at 1 fl oz/A + UpBeet at 0.125 oz/A + 1.5% v/v of methylated seed oil (MSO) was applied to all treatments when common lambsquarters was less than 1/8-inch in height after planting. To simulate a missed micro-rate application, the second micro-rate application was delayed until 400 growing degree days, base 34F (GDD) after the first micro-rate (0.25- to 0.75-inch lambsquarters) application for half of the treatments and 500 GDD (0.5 to 1.25-inch lambsquarters) for the other half of the treatments. The strategies examined to overcome a missed micro-rate application included: 1) increasing the Betamix rate in the next micro-rate application (12 fl oz/A and 16 fl oz/A), 2) adding Nortron to the next micro-rate treatment (2 fl oz/A and 4 fl oz/A), 3) increasing the Stinger rate in the next micro-rate treatment to 2 fl oz/A, 4) shortening the interval for the next micro-rate treatment to ~75-100 GDD₃₄ (3 to 5 d), and 5) switching to a standard-split application of 2 pt/A of Betamix + 0.25 oz of UpBeet + 0.5 fl oz/A of Stinger + 0.25% v/v of non-ionic surfactant (NIS). Each of these strategies were implemented at the two missed micro-rate timings and compared with a standard micro-rate treatment. The third and fourth applications of the standard micro-rate were then applied 225 GDD after the second micro-rate application for all treatments. Seven days after the last micro-rate application, common lambsquarters control was 75% when the standard micro-rate treatment was delayed 400 GDD and 71% when it was delayed 500 GDD. Regardless of the missed micro-rate timing, shortening the interval between the missed micro-rate and the next micro-rate application or switching to a standard-split application provided the greatest common lambsquarters control, 90% or greater. Increasing the rate of Stinger to 2 fl oz/A or adding 4 fl oz/A of Nortron to the standard micro-rate also improved common lambsquarters control compared with the standard micro-rate treatment for smaller common lambsquarters. For the larger common lambsquarters, increasing the rate of Betamix to 16 fl oz/A in the micro-rate also improved common lambsquarters control compared with the standard micro-rate treatment.