MSU Weed Science Research Program

Waterhemp control with metamitron and ethofumesate in sugarbeet

Trial ID: SB07-23 Study Dir.: Sprague, Stiles
Conducted: Shiawassee Co. Investigator: Christy Sprague

Planting Date:	May-23-2023	**Row Spacing:**	30 IN
Variety:	Crystal G049	**No. of Reps:**	4
Population:	4.375 " spacing	**% OM:**	1.9
Soil Type:	SIL silt loam	**pH:**	6.7
Plot Size:	10 X 25 FT	**Study Design:**	Randomized Complete Block (RCB)

Tillage/Previous Crops: Spring chisel plow; spring disk and soil finished twice.
Fertilizer:

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1	AMATU	waterhemp	Amaranthus tuberculatus
Crop	**Code**	**Common Name**	
1	BEAVU	Sugarbeet	

Application Description

	A	B	C
Application Timing:	PRE	+7da -A	+7da-B
Date Treated:	May-23-2023	Jun-5-2023	Jun-14-2023
Time Treated:	3:15 PM	11:20 AM	2:15 PM
% Cloud Cover:	0	20	50
Air Temp., Unit:	75 F	72 F	71 F
% Relative Humidity:	37	31	41
Wind Speed/Unit/Dir:	1 MPH NW	3 MPH WNW	6 MPH NNW
Soil Temp, Unit:	69 F	74 F	83 F
Leaf Moist/Dew Presence (Y/N):	N	N	N
Soil Moist:	5	5	5

Crop Stage at Each Application

	A	B	C
Crop 1 Name:	BEAVU	BEAVU	BEAVU
Height:			1-2 " (2)
Stage:			2L

Weed Stage at Each Application

	A	B	C
Weed 1 Name:	AMATU	AMATU	AMATU
Height:			1-3 " (2)
Stage:			1L-4L (2L)

Weed Density

	1
Date:	Jun-14-2023
Weed Name:	AMATU
Density:	8 ft2

Application Equipment

Appl	Sprayer Type	Ground Speed	Nozzle Type	Nozzle Size	Nozzle Height	Nozzle Spacing	Boom Width	Spray Volume	Carrier	Operation Pressure
A	CUB	3.8 MPH	AIXR	11003	20.0 "	20 "	100 "	19 GPA	WATER	30 PSI
B	CUB	3.8 MPH	AIXR	11003	20.0 "	20 "	100 "	19 GPA	WATER	30 PSI
C	CUB	3.8 MPH	AIXR	11003	22.0 "	20 "	100 "	19 GPA	WATER	30 PSI

Comments:
The waterhemp population at this location is glyphosate- (Group 9) and ALS- (Group 2) resistant. The lack of precipitation preceding and soon after sugarbeet planting high variability of waterhemp emergence and herbicide effectiveness in this trial. The replications were blocked from south to north and part of replication 1 and all of replication 2 were in a dry location in the field that resulted in overall poor waterhemp emergence, so control ratings were higher. There was a more consistent waterhemp population in replications 3 and 4.

Michigan State University

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Trial ID: SB07-23
Protocol ID: SB07-23 Location: Shiawassee Co. Trial Year: 2023
Project ID: Project ID 2: Project ID 3:
Study Director: Sprague, Stiles Sponsor Contact:
Investigator: Christy Sprague

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	Appl Timing	Jun-13-2023 control %, 0, 100 1 AMATU 21 DA-A 0	Jun-20-2023 control %, 0, 100 1 AMATU 28 DA-A 0	Jul-3-2023 control %, 0, 100 1 AMATU 41 DA-A 0	Jul-3-2023 counts 0.5 m2, -, - 1 AMATU 41 DA-A 0	Jul-10-2023 control %, 0, 100 1 AMATU 48 DA-A 0	Jul-18-2023 control %, 0, 100 1 AMATU 56 DA-A 0
1	Untreated					0	18	18	23	18	18
2	Dual Magnum	0.5	pt/a	A	PRE	27	31	43	19	44	38
3	Goltix	17	fl oz/a	A	PRE	5	52	54	14	47	31
4	Goltix	34	fl oz/a	A	PRE	5	64	65	16	56	41
5	Goltix	51	fl oz/a	A	PRE	15	35	38	44	30	28
6	Goltix	68	fl oz/a	A	PRE	43	55	55	19	58	48
7	Goltix	85	fl oz/a	A	PRE	35	70	69	20	65	56
8	Nortron SC	32	fl oz/a	A	PRE	35	75	70	15	55	40
9	Nortron SC	53.1	fl oz/a	A	PRE	37	43	59	14	49	33
10	Torero	34	fl oz/a	A	PRE	50	43	59	10	55	50
	Nortron SC	42.5	fl oz/a	A	PRE						
11	Torero	68	fl oz/a	A	PRE	40	70	80	10	77	65
	Nortron SC	31.9	fl oz/a	A	PRE						
12	Torero	102	fl oz/a	A	PRE	20	63	74	9	72	62
	Nortron SC	21.3	fl oz/a	A	PRE						
13	Torero	136	fl oz/a	A	PRE	33	56	56	9	51	46
	Nortron SC	10.6	fl oz/a	A	PRE						
14	Torero	170	fl oz/a	A	PRE	40	65	64	7	65	63
15	Goltix	32	fl oz/a	A	PRE	30	65	58	9	49	48
	Goltix	32	fl oz/a	B	+ 7 da-A						
16	Goltix	22	fl oz/a	A	PRE	15	75	78	11	70	59
	Goltix	22	fl oz/a	B	+ 7 da-A						
	Goltix	22	fl oz/a	C	+ 7 da-B						
LSD P=.05						20.0	37.0	32.7	27.4	33.0	30.7
Standard Deviation						13.7	25.9	23.0	19.2	23.2	21.6
CV						50.84	47.02	39.17	124.32	43.23	47.7

Missing data estimates are included in columns:Average=1,2