MSU Weed Science Research Program

Weed control systems using Engenia in RR2 Xtend soybean

Trial ID: SOY16-15 Study Dir.: Sprague, Hill, Powell
Conducted: Campus B-10 Quonset Investigator: Christy Sprague

Date Planted: May/28/2015 **Row Spacing:** 30 IN
Variety: RR2 Xtend **No. of Reps:** 4
Population: 140,000 seeds/A **% OM:** 2.4
Soil Type: Loam **pH:** 7.7
Plot Size: 10 **X** 30 **FT** **Design:** RANDOMIZED COMPLETE BLOCK

Tillage: Fall chisel plow; spring soil finish

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1.	ANGR	mainly foxtail species	SETARIA SP.
2.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
3.	AMAPO	AMARANTH, POWELL	AMARANTHUS POWELLII S.WATS.
4.	AMBEL	RAGWEED, COMMON	AMBROSIA ARTEMISIIFOLIA L.
5.	HIBTR	MALLOW, VENICE	HIBISCUS TRIONUM L.

Crop	Code	Common Name
1.	GLXMA	SOYBEAN

Application Description

	A	B	C
Application Timing:	PRE	EPOS	POST
Date Treated:	May/28/2015	Jun/19/2015	Jul/06/2015
Time Treated:	4:40 PM	7:30 PM	9:30 AM
% Cloud Cover:	10	80	10
Air Temp., Unit:	82 F	69 F	70 F
% Relative Humidity:	41	55	73
Wind Speed/Unit/Dir:	3 mph s	5 mph NE	4 mph SW
Soil Temp., Unit:	71 F	72 F	68 F
Soil/Leaf Surface M:	3 -	3 5	5 5
Soil Moist (1=w 5=d):	3	3	4

Crop Stage at Each Application

	A	B	C
Crop Name:	GLXMA	GLXMA	GLXMA
Height (In.):	-	4"	8"
Stage (L):	-	V1	V4

Weed Stage at Each Application

	A	B	C
Weed 1 Name:	ANGR	ANGR	ANGR
Height (In.):	-	2"	0.5-3"
Stage (L):	-	3	cot-4
Weed 2 Name:	CHEAL	CHEAL	CHEAL
Height (In.):	-	1-1.5"	1"
Stage (L):	-	4-6	6
Weed 3 Name:	AMAPO	AMAPO	AMAPO
Height (In.):	-	2"	1"
Stage (L):	-	5	4
Weed 4 Name:	AMBEL	AMBEL	AMBEL
Height (In.):	-	1.5-2"	2-3"
Stage (L):	-	6	6-8
Weed 5 Name:	HIBTR	HIBTR	HIBTR
Height (In.):	-	0.5-1.5"	0.5-2"
Stage (L):	-	cot-3	2-6

Weed Density (plants/sq. ft.)

	1	2	3	4	5
Weed Name:	ANGR	CHEAL	AMAPO	AMBEL	HIBTR
Density:	3	1	3	3	3

Application Equipment

Appl	Sprayer Type	Speed MPH	Nozzle Type	Nozzle Size	Nozzle Height	Nozzle Spacing	Boom Width	GPA	Carrier	PSI
A	Cub	3.8	TTI	11003	20"	20"	100"	19	Water	28
B	Cub	3.8	TTI	11003	20"	20"	100"	19	Water	28
C	Cub	3.8	TTI	11003	26"	20"	100"	19	Water	28

Comments: Trial was destroyed after the last evaluation.

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Weed Code									ANGR	CHEAL	AMAPO
Crop Code								GLXMA			
Rating Data Type								injury	control	control	control
Rating Unit								percent	percent	percent	percent
Rating Date								Jun/26/2015	Jun/26/2015	Jun/26/2015	Jun/26/2015
Trt-Eval Interval								7 DA-B	7 DA-B	7 DA-B	7 DA-B
# Subsamples, Dec.								0	0	0	0
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code				
1	Untreated							0	0	0	0
2	Roundup PowerMax	4.5	SL	28.4	fl oz/a	EPOS	B	15	96	99	99
2	Engenia	5	SL	12.8	fl oz/a	EPOS	B				
2	Surfactant		L	0.25	% v/v	EPOS	B				
3	Roundup PowerMax	4.5	SL	28.4	fl oz/a	EPOS	B	15	97	99	99
3	Clarity	4	SL	16	fl oz/a	EPOS	B				
3	Warrant	3	L	2.5	pt/a	EPOS	B				
3	Surfactant		L	0.25	% v/v	EPOS	B				
4	Clarity	4	SL	32	fl oz/a	PRE	A	0	95	96	22
4	Roundup PowerMax	4.5	SL	28.4	fl oz/a	POST	C				
4	Clarity	4	SL	16	fl oz/a	POST	C				
4	Surfactant		L	0.25	% v/v	POST	C				
5	Roundup PowerMax	4.5	SL	28.4	fl oz/a	EPOS	B	13	97	99	99
5	Clarity	4	SL	16	fl oz/a	EPOS	B				
5	Surfactant		L	0.25	% v/v	EPOS	B				
5	Roundup PowerMax	4.5	SL	28.4	fl oz/a	POST	C				
5	Clarity	4	SL	16	fl oz/a	POST	C				
5	Surfactant		L	0.25	% v/v	POST	C				
6	Sonic	70	WG	4	oz/a	PRE	A	0	95	99	99
6	Flexstar GT	2.82	L	3.5	pt/a	POST	C				
6	Surfactant		L	0.25	% v/v	POST	C				
6	AMS		WG	17	lb/100 gal	POST	C				
7	Roundup PowerMax	4.5	SL	28.4	fl oz/a	EPOS	B	0	96	99	99
7	AMS		WG	17	lb/100 gal	EPOS	B				
8	Roundup PowerMax	4.5	SL	28.4	fl oz/a	EPOS	B	0	98	99	99
8	AMS		WG	17	lb/100 gal	EPOS	B				
8	Roundup PowerMax	4.5	SL	28.4	fl oz/a	POST	C				
8	AMS		WG	17	lb/100 gal	POST	C				
9	Optill PRO - Optill	68	WG	2	oz/a	PRE	A	0	96	98	99
9	Optill PRO - Outlook	6	L	10	fl oz/a	PRE	A				
9	Roundup PowerMax	4.5	SL	28.4	fl oz/a	POST	C				
9	Engenia	5	SL	12.8	fl oz/a	POST	C				
9	Surfactant		L	0.25	% v/v	POST	C				
10	Optill PRO - Optill	68	WG	2	oz/a	PRE	A	0	98	99	99
10	Optill PRO - Outlook	6	L	10	fl oz/a	PRE	A				
10	Roundup PowerMax	4.5	SL	28.4	fl oz/a	POST	C				
10	Outlook	6	L	10	fl oz/a	POST	C				
10	Engenia	5	SL	12.8	fl oz/a	POST	C				
10	Surfactant		L	0.25	% v/v	POST	C				
LSD (P=.05)								1.8	3.1	1.3	1.1
CV								28.86	2.48	1.0	0.93

Means followed by same letter do not significantly differ (P=.05, LSD)

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Conducted: Campus B-10 Quonset Investigator: Christy Sprague

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code	AMBEL	HIBTR	GLXMA	ANGR	CHEAL
	Weed Code							AMBEL	HIBTR	GLXMA	ANGR	CHEAL
	Crop Code											
	Rating Data Type							control	control	injury	control	control
	Rating Unit							percent	percent	percent	percent	percent
	Rating Date							Jun/26/2015	Jun/26/2015	Jul/06/2015	Jul/06/2015	Jul/06/2015
	Trt-Eval Interval							7 DA-B	7 DA-B	0 DA-C	0 DA-C	0 DA-C
	# Subsamples, Dec.							0	0	0	0	0
1	Untreated							0	0	0	0	0
2	Roundup PowerMax	4.5	SL	28.4	fl oz/a	EPOS	B	98	95	2	99	99
2	Engenia	5	SL	12.8	fl oz/a	EPOS	B					
2	Surfactant		L	0.25	% v/v	EPOS	B					
3	Roundup PowerMax	4.5	SL	28.4	fl oz/a	EPOS	B	99	92	1	99	99
3	Clarity	4	SL	16	fl oz/a	EPOS	B					
3	Warrant	3	L	2.5	pt/a	EPOS	B					
3	Surfactant		L	0.25	% v/v	EPOS	B					
4	Clarity	4	SL	32	fl oz/a	PRE	A	95	0	1	98	93
4	Roundup PowerMax	4.5	SL	28.4	fl oz/a	POST	C					
4	Clarity	4	SL	16	fl oz/a	POST	C					
4	Surfactant		L	0.25	% v/v	POST	C					
5	Roundup PowerMax	4.5	SL	28.4	fl oz/a	EPOS	B	99	95	3	99	99
5	Clarity	4	SL	16	fl oz/a	EPOS	B					
5	Surfactant		L	0.25	% v/v	EPOS	B					
5	Roundup PowerMax	4.5	SL	28.4	fl oz/a	POST	C					
5	Clarity	4	SL	16	fl oz/a	POST	C					
5	Surfactant		L	0.25	% v/v	POST	C					
6	Sonic	70	WG	4	oz/a	PRE	A	99	99	0	99	99
6	Flexstar GT	2.82	L	3.5	pt/a	POST	C					
6	Surfactant		L	0.25	% v/v	POST	C					
6	AMS		WG	17	lb/100 gal	POST	C					
7	Roundup PowerMax	4.5	SL	28.4	fl oz/a	EPOS	B	96	96	0	98	98
7	AMS		WG	17	lb/100 gal	EPOS	B					
8	Roundup PowerMax	4.5	SL	28.4	fl oz/a	EPOS	B	96	95	0	98	99
8	AMS		WG	17	lb/100 gal	EPOS	B					
8	Roundup PowerMax	4.5	SL	28.4	fl oz/a	POST	C					
8	AMS		WG	17	lb/100 gal	POST	C					
9	Optill PRO - Optill	68	WG	2	oz/a	PRE	A	93	97	19	98	97
9	Optill PRO - Outlook	6	L	10	fl oz/a	PRE	A					
9	Roundup PowerMax	4.5	SL	28.4	fl oz/a	POST	C					
9	Engenia	5	SL	12.8	fl oz/a	POST	C					
9	Surfactant		L	0.25	% v/v	POST	C					
10	Optill PRO - Optill	68	WG	2	oz/a	PRE	A	95	99	18	99	99
10	Optill PRO - Outlook	6	L	10	fl oz/a	PRE	A					
10	Roundup PowerMax	4.5	SL	28.4	fl oz/a	POST	C					
10	Outlook	6	L	10	fl oz/a	POST	C					
10	Engenia	5	SL	12.8	fl oz/a	POST	C					
10	Surfactant		L	0.25	% v/v	POST	C					
	LSD (P=.05)							3.1	4.7	3.8	1.5	3.2
	CV							2.48	4.27	61.72	1.14	2.51

Means followed by same letter do not significantly differ (P=.05, LSD)

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Conducted: Campus B-10 Quonset Investigator: Christy Sprague

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code	AMAPO	AMBEL	HIBTR	GLXMA	ANGR
	Weed Code							AMAPO	AMBEL	HIBTR	GLXMA	ANGR
	Crop Code											
	Rating Data Type							control	control	control	injury	control
	Rating Unit							percent	percent	percent	percent	percent
	Rating Date							Jul/06/2015	Jul/06/2015	Jul/06/2015	Jul/20/2015	Jul/20/2015
	Trt-Eval Interval							0 DA-C	0 DA-C	0 DA-C	14 DA-C	14 DA-C
	# Subsamples, Dec.							0	0	0	0	0
1	Untreated							0	0	0	0	0
2	Roundup PowerMax	4.5	SL	28.4	fl oz/a	EPOS	B	99	99	99	0	96
2	Engenia	5	SL	12.8	fl oz/a	EPOS	B					
2	Surfactant		L	0.25	% v/v	EPOS	B					
3	Roundup PowerMax	4.5	SL	28.4	fl oz/a	EPOS	B	99	99	99	0	99
3	Clarity	4	SL	16	fl oz/a	EPOS	B					
3	Warrant	3	L	2.5	pt/a	EPOS	B					
3	Surfactant		L	0.25	% v/v	EPOS	B					
4	Clarity	4	SL	32	fl oz/a	PRE	A	15	96	91	0	99
4	Roundup PowerMax	4.5	SL	28.4	fl oz/a	POST	C					
4	Clarity	4	SL	16	fl oz/a	POST	C					
4	Surfactant		L	0.25	% v/v	POST	C					
5	Roundup PowerMax	4.5	SL	28.4	fl oz/a	EPOS	B	99	99	99	0	99
5	Clarity	4	SL	16	fl oz/a	EPOS	B					
5	Surfactant		L	0.25	% v/v	EPOS	B					
5	Roundup PowerMax	4.5	SL	28.4	fl oz/a	POST	C					
5	Clarity	4	SL	16	fl oz/a	POST	C					
5	Surfactant		L	0.25	% v/v	POST	C					
6	Sonic	70	WG	4	oz/a	PRE	A	99	99	99	3	99
6	Flexstar GT	2.82	L	3.5	pt/a	POST	C					
6	Surfactant		L	0.25	% v/v	POST	C					
6	AMS		WG	17	lb/100 gal	POST	C					
7	Roundup PowerMax	4.5	SL	28.4	fl oz/a	EPOS	B	96	99	99	0	91
7	AMS		WG	17	lb/100 gal	EPOS	B					
8	Roundup PowerMax	4.5	SL	28.4	fl oz/a	EPOS	B	97	97	99	0	99
8	AMS		WG	17	lb/100 gal	EPOS	B					
8	Roundup PowerMax	4.5	SL	28.4	fl oz/a	POST	C					
8	AMS		WG	17	lb/100 gal	POST	C					
9	Optill PRO - Optill	68	WG	2	oz/a	PRE	A	99	96	99	6	99
9	Optill PRO - Outlook	6	L	10	fl oz/a	PRE	A					
9	Roundup PowerMax	4.5	SL	28.4	fl oz/a	POST	C					
9	Engenia	5	SL	12.8	fl oz/a	POST	C					
9	Surfactant		L	0.25	% v/v	POST	C					
10	Optill PRO - Optill	68	WG	2	oz/a	PRE	A	99	95	99	9	99
10	Optill PRO - Outlook	6	L	10	fl oz/a	PRE	A					
10	Roundup PowerMax	4.5	SL	28.4	fl oz/a	POST	C					
10	Outlook	6	L	10	fl oz/a	POST	C					
10	Engenia	5	SL	12.8	fl oz/a	POST	C					
10	Surfactant		L	0.25	% v/v	POST	C					
	LSD (P=.05)							5.5	2.4	5.1	0.8	1.5
	CV							4.74	1.88	3.98	31.56	1.18

Means followed by same letter do not significantly differ (P=.05, LSD)

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Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code	CHEAL	AMAPO	AMBEL	HIBTR
	Weed Code							CHEAL	AMAPO	AMBEL	HIBTR
	Crop Code										
	Rating Data Type							control	control	control	control
	Rating Unit							percent	percent	percent	percent
	Rating Date							Jul/20/2015	Jul/20/2015	Jul/20/2015	Jul/20/2015
	Trt-Eval Interval							14 DA-C	14 DA-C	14 DA-C	14 DA-C
	# Subsamples, Dec.							0	0	0	0
1	Untreated							0	0	0	0
2	Roundup PowerMax	4.5	SL	28.4	fl oz/a	EPOS	B	97	99	99	99
2	Engenia	5	SL	12.8	fl oz/a	EPOS	B				
2	Surfactant		L	0.25	% v/v	EPOS	B				
3	Roundup PowerMax	4.5	SL	28.4	fl oz/a	EPOS	B	99	99	99	99
3	Clarity	4	SL	16	fl oz/a	EPOS	B				
3	Warrant	3	L	2.5	pt/a	EPOS	B				
3	Surfactant		L	0.25	% v/v	EPOS	B				
4	Clarity	4	SL	32	fl oz/a	PRE	A	99	99	99	99
4	Roundup PowerMax	4.5	SL	28.4	fl oz/a	POST	C				
4	Clarity	4	SL	16	fl oz/a	POST	C				
4	Surfactant		L	0.25	% v/v	POST	C				
5	Roundup PowerMax	4.5	SL	28.4	fl oz/a	EPOS	B	99	99	99	99
5	Clarity	4	SL	16	fl oz/a	EPOS	B				
5	Surfactant		L	0.25	% v/v	EPOS	B				
5	Roundup PowerMax	4.5	SL	28.4	fl oz/a	POST	C				
5	Clarity	4	SL	16	fl oz/a	POST	C				
5	Surfactant		L	0.25	% v/v	POST	C				
6	Sonic	70	WG	4	oz/a	PRE	A	99	99	99	99
6	Flexstar GT	2.82	L	3.5	pt/a	POST	C				
6	Surfactant		L	0.25	% v/v	POST	C				
6	AMS		WG	17	lb/100 gal	POST	C				
7	Roundup PowerMax	4.5	SL	28.4	fl oz/a	EPOS	B	89	80	87	97
7	AMS		WG	17	lb/100 gal	EPOS	B				
8	Roundup PowerMax	4.5	SL	28.4	fl oz/a	EPOS	B	99	99	99	99
8	AMS		WG	17	lb/100 gal	EPOS	B				
8	Roundup PowerMax	4.5	SL	28.4	fl oz/a	POST	C				
8	AMS		WG	17	lb/100 gal	POST	C				
9	Optill PRO - Optill	68	WG	2	oz/a	PRE	A	99	99	99	99
9	Optill PRO - Outlook	6	L	10	fl oz/a	PRE	A				
9	Roundup PowerMax	4.5	SL	28.4	fl oz/a	POST	C				
9	Engenia	5	SL	12.8	fl oz/a	POST	C				
9	Surfactant		L	0.25	% v/v	POST	C				
10	Optill PRO - Optill	68	WG	2	oz/a	PRE	A	99	99	99	99
10	Optill PRO - Outlook	6	L	10	fl oz/a	PRE	A				
10	Roundup PowerMax	4.5	SL	28.4	fl oz/a	POST	C				
10	Outlook	6	L	10	fl oz/a	POST	C				
10	Engenia	5	SL	12.8	fl oz/a	POST	C				
10	Surfactant		L	0.25	% v/v	POST	C				
	LSD (P=.05)							2.4	0.7	4.5	2.2
	CV							1.88	0.56	3.49	1.69

Means followed by same letter do not significantly differ (P=.05, LSD)