

**Benefit of postemergence residuals for weed control in Roundup Ready 2 Xtend soybean**

Trial ID: SOY08-19 Study Dir.: Sprague, Powell, Stiles  
 Conducted: Campus, C-14 Investigator: Christy Sprague

**Planting Date:** May-14-2019 **Row Spacing:** 30 IN  
**Variety:** Pioneer P24A80X **No. of Reps:** 4  
**Population:** 155000 seeds/A **% OM:** 2.2  
**Soil Type:** L loam **pH:** 7.7  
**Plot Size:** 10 X 30 FT **Study Design:** Randomized Complete Block (RCB)

**Tillage/Previous Crops:** Fall soil finish; spring soil finish (2X)

**Fertilizer:**

**Crop and Weed Description**

Weed	Code	Common Name	Scientific Name
1	ANGR	mainly foxtail species	Annual grass
2	CHEAL	lambsquarters, common	Chenopodium album
3	AMAPO	amaranth, Powell	Amaranthus powellii
4	AMBEL	ragweed, common	Ambrosia artemisiifolia
5	ABUTH	velvetleaf	Abutilon theophrasti
Crop	Code	Common Name	
1	GLXMA	Soybean	

**Application Description**

	A	B
<b>Application Timing:</b>	PRE	POST
<b>Date Treated:</b>	May-14-2019	Jun-27-2019
<b>Time Treated:</b>	7:00 PM	10:30 AM
<b>% Cloud Cover:</b>	5	10
<b>Air Temp., Unit:</b>	67 F	76 F
<b>% Relative Humidity:</b>	32	57
<b>Wind Speed/Unit/Dir:</b>	4 mph NW	8 mph W
<b>Soil Temp, Unit:</b>	64 F	73 F
<b>Leaf Moist/Dew Presence (Y/N):</b>	5	5
<b>Soil Moist:</b>	3	3

**Crop Stage at Each Application**

	A	B
<b>Crop 1 Name:</b>	GLXMA	GLXMA
<b>Height:</b>		8 "
<b>Stage:</b>		V3

**Weed Stage at Each Application**

	A	B
<b>Weed 1 Name:</b>	ANGR	ANGR
<b>Height:</b>		2-8 " (6)
<b>Stage:</b>		2-4L
<b>Weed 2 Name:</b>	CHEAL	CHEAL
<b>Height:</b>		1-6 " (4)
<b>Stage:</b>		4-8L
<b>Weed 3 Name:</b>	AMAPO	AMAPO
<b>Height:</b>		2-6 " (4)
<b>Stage:</b>		4-12L
<b>Weed 4 Name:</b>	AMBEL	AMBEL
<b>Height:</b>		1-6 " (5)
<b>Stage:</b>		2-8L
<b>Weed 5 Name:</b>	ABUTH	ABUTH
<b>Height:</b>		0.5 "
<b>Stage:</b>		cot

**Weed Density**

	1	2	3	4	5
<b>Date:</b>	Jun-27-2019	Jun-27-2019	Jun-27-2019	Jun-27-2019	Jun-27-2019
<b>Weed Name:</b>	ANGR	CHEAL	AMAPO	AMBEL	ABUTH
<b>Density:</b>	119 ft2	12 ft2	1 ft2	29 ft2	1 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	22 "	20 "	100 "	19 GPA	WATER	30 psi
B	CUB	3.8 mph	TTI	11003	30 "	20 "	100 "	19 GPA	WATER	25 psi

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Location: Campus, C-14

Investigator: Christy Sprague

Study Director: Sprague, Powell, Stiles

Pest Code		ANGR	CHEAL	AMAPO	AMBEL
Crop Type, Code	GLXMA				
Rating Date	Jun-27-2019	Jun-27-2019	Jun-27-2019	Jun-27-2019	Jun-27-2019
Rating Type	injury	control	control	control	control
Rating Unit	percent	percent	percent	percent	percent
Trt-Eval Interval	0 DA-B	0 DA-B	0 DA-B	0 DA-B	0 DA-B
Number of Decimals	0	0	0	0	0

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Appl Timing	Appl Code					
1	Verdict	5.57	L	5 fl oz/a		PRE	A	6	80	96	100	87
2	Untreated							0	0	0	0	0
3	Verdict	5.57	L	5 fl oz/a		PRE	A	3	80	94	100	86
3	Engenia PRO	4.45	L	16 fl oz/a		POST	B					
3	Roundup PowerMax	4.5	SL	32 fl oz/a		POST	B					
3	Induce		L	0.25 % v/v		POST	B					
4	Engenia PRO	4.45	L	16 fl oz/a		POST	B	0	0	0	0	0
4	Roundup PowerMax	4.5	SL	32 fl oz/a		POST	B					
4	Induce		L	0.25 % v/v		POST	B					
5	Verdict	5.57	L	5 fl oz/a		PRE	A	3	80	94	100	83
5	XtendiMax	2.9	L	22 fl oz/a		POST	B					
5	Dual II Magnum	7.64	L	1 pt/a		POST	B					
5	Roundup PowerMax	4.5	SL	32 fl oz/a		POST	B					
5	Intact		L	0.5 % v/v		POST	B					
6	XtendiMax	2.9	L	22 fl oz/a		POST	B	0	0	0	0	0
6	Dual II Magnum	7.64	L	1 pt/a		POST	B					
6	Roundup PowerMax	4.5	SL	32 fl oz/a		POST	B					
6	Intact		L	0.5 % v/v		POST	B					
7	Verdict	5.57	L	5 fl oz/a		PRE	A	4	78	88	100	82
7	XtendiMax	2.9	L	22 fl oz/a		POST	B					
7	Warrant	3	L	3 pt/a		POST	B					
7	Roundup PowerMax	4.5	SL	32 fl oz/a		POST	B					
7	Intact		L	0.5 % v/v		POST	B					
8	XtendiMax	2.9	L	22 fl oz/a		POST	B	0	0	0	0	0
8	Warrant	3	L	3 pt/a		POST	B					
8	Roundup PowerMax	4.5	SL	32 fl oz/a		POST	B					
8	Intact		L	0.5 % v/v		POST	B					
LSD P=.05								2.2	3.4	6.7	.	3.9
Standard Deviation								1.5	2.3	4.5	0.0	2.7
CV								74.07	5.75	9.71	0.0	6.29

Missing data estimates are included in

columns: Average=1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30

Could not calculate LSD (% mean diff) for columns 4,19 because error mean square = 0.

## Benefit of postemergence residuals for weed control in Roundup Ready 2 Xtend soybean

Trial ID: SOY08-19

Location: Campus, C-14

Investigator: Christy Sprague

Study Director: Sprague, Powell, Stiles

Pest Code	ABUTH		ANGR	CHEAL	AMAPO	AMBEL
Crop Type, Code		GLXMA				
Rating Date	Jun-27-2019	Jul-4-2019	Jul-4-2019	Jul-4-2019	Jul-4-2019	Jul-4-2019
Rating Type	control	injury	control	control	control	control
Rating Unit	percent	percent	percent	percent	percent	percent
Trt-Eval Interval	0 DA-B	7 DA-B	7 DA-B	7 DA-B	7 DA-B	7 DA-B
Number of Decimals	0	0	0	0	0	0

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Appl Timing	Appl Code						
1	Verdict	5.57	L	5 fl oz/a		PRE	A	100	2	51	78	88	72
2	Untreated							0	0	0	0	0	0
3	Verdict	5.57	L	5 fl oz/a		PRE	A	99	6	99	100	100	97
3	Engenia PRO	4.45	L	16 fl oz/a		POST	B						
3	Roundup PowerMax	4.5	SL	32 fl oz/a		POST	B						
3	Induce		L	0.25 % v/v		POST	B						
4	Engenia PRO	4.45	L	16 fl oz/a		POST	B	0	10	100	94	98	73
4	Roundup PowerMax	4.5	SL	32 fl oz/a		POST	B						
4	Induce		L	0.25 % v/v		POST	B						
5	Verdict	5.57	L	5 fl oz/a		PRE	A	100	7	100	100	100	96
5	XtendiMax	2.9	L	22 fl oz/a		POST	B						
5	Dual II Magnum	7.64	L	1 pt/a		POST	B						
5	Roundup PowerMax	4.5	SL	32 fl oz/a		POST	B						
5	Intact		L	0.5 % v/v		POST	B						
6	XtendiMax	2.9	L	22 fl oz/a		POST	B	0	10	100	91	99	73
6	Dual II Magnum	7.64	L	1 pt/a		POST	B						
6	Roundup PowerMax	4.5	SL	32 fl oz/a		POST	B						
6	Intact		L	0.5 % v/v		POST	B						
7	Verdict	5.57	L	5 fl oz/a		PRE	A	100	2	100	97	100	88
7	XtendiMax	2.9	L	22 fl oz/a		POST	B						
7	Warrant	3	L	3 pt/a		POST	B						
7	Roundup PowerMax	4.5	SL	32 fl oz/a		POST	B						
7	Intact		L	0.5 % v/v		POST	B						
8	XtendiMax	2.9	L	22 fl oz/a		POST	B	0	4	100	86	98	70
8	Warrant	3	L	3 pt/a		POST	B						
8	Roundup PowerMax	4.5	SL	32 fl oz/a		POST	B						
8	Intact		L	0.5 % v/v		POST	B						
	LSD P=.05							0.9	2.5	3.5	13.5	3.6	7.3
	Standard Deviation							0.6	1.7	2.4	9.1	2.5	4.9
	CV							1.26	34.3	2.9	11.35	2.89	6.95

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columns: Average=1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30

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Location: Campus, C-14

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Study Director: Sprague, Powell, Stiles

Pest Code	ABUTH		ANGR	CHEAL	AMAPO
Crop Type, Code		GLXMA			
Rating Date	Jul-4-2019	Jul-11-2019	Jul-11-2019	Jul-11-2019	Jul-11-2019
Rating Type	control	injury	control	control	control
Rating Unit	percent	percent	percent	percent	percent
Trt-Eval Interval	7 DA-B	14 DA-B	14 DA-B	14 DA-B	14 DA-B
Number of Decimals	0	0	0	0	0

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Appl Timing	Appl Code					
1	Verdict	5.57	L	5 fl oz/a		PRE	A	95	2	41	80	90
2	Untreated							0	0	0	0	0
3	Verdict	5.57	L	5 fl oz/a		PRE	A	100	3	99	100	100
3	Engenia PRO	4.45	L	16 fl oz/a		POST	B					
3	Roundup PowerMax	4.5	SL	32 fl oz/a		POST	B					
3	Induce		L	0.25 % v/v		POST	B					
4	Engenia PRO	4.45	L	16 fl oz/a		POST	B	86	11	99	100	100
4	Roundup PowerMax	4.5	SL	32 fl oz/a		POST	B					
4	Induce		L	0.25 % v/v		POST	B					
5	Verdict	5.57	L	5 fl oz/a		PRE	A	100	4	100	100	100
5	XtendiMax	2.9	L	22 fl oz/a		POST	B					
5	Dual II Magnum	7.64	L	1 pt/a		POST	B					
5	Roundup PowerMax	4.5	SL	32 fl oz/a		POST	B					
5	Intact		L	0.5 % v/v		POST	B					
6	XtendiMax	2.9	L	22 fl oz/a		POST	B	78	12	99	100	100
6	Dual II Magnum	7.64	L	1 pt/a		POST	B					
6	Roundup PowerMax	4.5	SL	32 fl oz/a		POST	B					
6	Intact		L	0.5 % v/v		POST	B					
7	Verdict	5.57	L	5 fl oz/a		PRE	A	97	1	98	100	100
7	XtendiMax	2.9	L	22 fl oz/a		POST	B					
7	Warrant	3	L	3 pt/a		POST	B					
7	Roundup PowerMax	4.5	SL	32 fl oz/a		POST	B					
7	Intact		L	0.5 % v/v		POST	B					
8	XtendiMax	2.9	L	22 fl oz/a		POST	B	80	10	96	100	100
8	Warrant	3	L	3 pt/a		POST	B					
8	Roundup PowerMax	4.5	SL	32 fl oz/a		POST	B					
8	Intact		L	0.5 % v/v		POST	B					
	LSD P=.05							7.0	3.7	5.1	5.9	3.8
	Standard Deviation							4.7	2.5	3.5	4.0	2.6
	CV							5.94	48.13	4.41	4.69	3.0

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columns: Average=1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30

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Location: Campus, C-14

Investigator: Christy Sprague

Study Director: Sprague, Powell, Stiles

Pest Code	AMBEL	ABUTH	GLXMA	ANGR	CHEAL
Crop Type, Code					
Rating Date	Jul-11-2019	Jul-11-2019	Jul-25-2019	Jul-25-2019	Jul-25-2019
Rating Type	control	control	injury	control	control
Rating Unit	percent	percent	percent	percent	percent
Trt-Eval Interval	14 DA-B	14 DA-B	28 DA-B	28 DA-B	28 DA-B
Number of Decimals	0	0	0	0	0

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Appl Timing	Appl Code	AMBEL	ABUTH	GLXMA	ANGR	CHEAL
1	Verdict	5.57	L	5 fl oz/a		PRE	A	68	80	0	33	65
2	Untreated							0	0	0	0	0
3	Verdict	5.57	L	5 fl oz/a		PRE	A	100	100	0	99	100
3	Engenia PRO	4.45	L	16 fl oz/a		POST	B					
3	Roundup PowerMax	4.5	SL	32 fl oz/a		POST	B					
3	Induce		L	0.25 % v/v		POST	B					
4	Engenia PRO	4.45	L	16 fl oz/a		POST	B	83	93	0	100	100
4	Roundup PowerMax	4.5	SL	32 fl oz/a		POST	B					
4	Induce		L	0.25 % v/v		POST	B					
5	Verdict	5.57	L	5 fl oz/a		PRE	A	100	100	0	100	100
5	XtendiMax	2.9	L	22 fl oz/a		POST	B					
5	Dual II Magnum	7.64	L	1 pt/a		POST	B					
5	Roundup PowerMax	4.5	SL	32 fl oz/a		POST	B					
5	Intact		L	0.5 % v/v		POST	B					
6	XtendiMax	2.9	L	22 fl oz/a		POST	B	83	90	0	96	100
6	Dual II Magnum	7.64	L	1 pt/a		POST	B					
6	Roundup PowerMax	4.5	SL	32 fl oz/a		POST	B					
6	Intact		L	0.5 % v/v		POST	B					
7	Verdict	5.57	L	5 fl oz/a		PRE	A	96	99	0	99	100
7	XtendiMax	2.9	L	22 fl oz/a		POST	B					
7	Warrant	3	L	3 pt/a		POST	B					
7	Roundup PowerMax	4.5	SL	32 fl oz/a		POST	B					
7	Intact		L	0.5 % v/v		POST	B					
8	XtendiMax	2.9	L	22 fl oz/a		POST	B	82	94	0	96	100
8	Warrant	3	L	3 pt/a		POST	B					
8	Roundup PowerMax	4.5	SL	32 fl oz/a		POST	B					
8	Intact		L	0.5 % v/v		POST	B					
	LSD P=.05							4.3	5.4	.	7.6	9.3
	Standard Deviation							2.9	3.7	0.0	5.1	6.3
	CV							3.82	4.48	0.0	6.59	7.55

Missing data estimates are included in

columns: Average=1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30

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## Benefit of postemergence residuals for weed control in Roundup Ready 2 Xtend soybean

Trial ID: SOY08-19

Location: Campus, C-14

Investigator: Christy Sprague

Study Director: Sprague, Powell, Stiles

Pest Code	AMAPO	AMBEL	ABUTH	GLXMA	ANGR
Crop Type, Code					
Rating Date	Jul-25-2019	Jul-25-2019	Jul-25-2019	Aug-8-2019	Aug-8-2019
Rating Type	control	control	control	injury	control
Rating Unit	percent	percent	percent	percent	percent
Trt-Eval Interval	28 DA-B	28 DA-B	28 DA-B	42 DA-B	42 DA-B
Number of Decimals	0	0	0	0	0

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Appl Timing	Appl Code	AMAPO	AMBEL	ABUTH	GLXMA	ANGR
1	Verdict	5.57	L	5 fl oz/a		PRE	A	88	70	69	0	59
2	Untreated							0	0	0	0	0
3	Verdict	5.57	L	5 fl oz/a		PRE	A	100	100	100	0	98
3	Engenia PRO	4.45	L	16 fl oz/a		POST	B					
3	Roundup PowerMax	4.5	SL	32 fl oz/a		POST	B					
3	Induce		L	0.25 % v/v		POST	B					
4	Engenia PRO	4.45	L	16 fl oz/a		POST	B	100	100	100	0	96
4	Roundup PowerMax	4.5	SL	32 fl oz/a		POST	B					
4	Induce		L	0.25 % v/v		POST	B					
5	Verdict	5.57	L	5 fl oz/a		PRE	A	100	100	100	0	99
5	XtendiMax	2.9	L	22 fl oz/a		POST	B					
5	Dual II Magnum	7.64	L	1 pt/a		POST	B					
5	Roundup PowerMax	4.5	SL	32 fl oz/a		POST	B					
5	Intact		L	0.5 % v/v		POST	B					
6	XtendiMax	2.9	L	22 fl oz/a		POST	B	100	100	98	2	92
6	Dual II Magnum	7.64	L	1 pt/a		POST	B					
6	Roundup PowerMax	4.5	SL	32 fl oz/a		POST	B					
6	Intact		L	0.5 % v/v		POST	B					
7	Verdict	5.57	L	5 fl oz/a		PRE	A	100	100	100	1	94
7	XtendiMax	2.9	L	22 fl oz/a		POST	B					
7	Warrant	3	L	3 pt/a		POST	B					
7	Roundup PowerMax	4.5	SL	32 fl oz/a		POST	B					
7	Intact		L	0.5 % v/v		POST	B					
8	XtendiMax	2.9	L	22 fl oz/a		POST	B	100	95	99	3	89
8	Warrant	3	L	3 pt/a		POST	B					
8	Roundup PowerMax	4.5	SL	32 fl oz/a		POST	B					
8	Intact		L	0.5 % v/v		POST	B					
	LSD P=.05							2.7	5.3	4.0	1.1	4.1
	Standard Deviation							1.8	3.6	2.7	0.7	2.8
	CV							2.11	4.36	3.23	92.33	3.56

Missing data estimates are included in

columns: Average=1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30

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Trial ID: SOY08-19

Location: Campus, C-14

Investigator: Christy Sprague

Study Director: Sprague, Powell, Stiles

Pest Code	CHEAL	AMAPO	AMBEL	ABUTH
Crop Type, Code				
Rating Date	Aug-8-2019	Aug-8-2019	Aug-8-2019	Aug-8-2019
Rating Type	control	control	control	control
Rating Unit	percent	percent	percent	percent
Trt-Eval Interval	42 DA-B	42 DA-B	42 DA-B	42 DA-B
Number of Decimals	0	0	0	0

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Appl Timing	Appl Code				
1	Verdict	5.57	L	5 fl oz/a		PRE	A	76	100	67	73
2	Untreated							0	0	0	0
3	Verdict	5.57	L	5 fl oz/a		PRE	A	100	100	100	100
3	Engenia PRO	4.45	L	16 fl oz/a		POST	B				
3	Roundup PowerMax	4.5	SL	32 fl oz/a		POST	B				
3	Induce		L	0.25 % v/v		POST	B				
4	Engenia PRO	4.45	L	16 fl oz/a		POST	B	99	99	100	100
4	Roundup PowerMax	4.5	SL	32 fl oz/a		POST	B				
4	Induce		L	0.25 % v/v		POST	B				
5	Verdict	5.57	L	5 fl oz/a		PRE	A	100	100	100	100
5	XtendiMax	2.9	L	22 fl oz/a		POST	B				
5	Dual II Magnum	7.64	L	1 pt/a		POST	B				
5	Roundup PowerMax	4.5	SL	32 fl oz/a		POST	B				
5	Intact		L	0.5 % v/v		POST	B				
6	XtendiMax	2.9	L	22 fl oz/a		POST	B	99	100	100	99
6	Dual II Magnum	7.64	L	1 pt/a		POST	B				
6	Roundup PowerMax	4.5	SL	32 fl oz/a		POST	B				
6	Intact		L	0.5 % v/v		POST	B				
7	Verdict	5.57	L	5 fl oz/a		PRE	A	98	100	100	100
7	XtendiMax	2.9	L	22 fl oz/a		POST	B				
7	Warrant	3	L	3 pt/a		POST	B				
7	Roundup PowerMax	4.5	SL	32 fl oz/a		POST	B				
7	Intact		L	0.5 % v/v		POST	B				
8	XtendiMax	2.9	L	22 fl oz/a		POST	B	98	100	99	98
8	Warrant	3	L	3 pt/a		POST	B				
8	Roundup PowerMax	4.5	SL	32 fl oz/a		POST	B				
8	Intact		L	0.5 % v/v		POST	B				
	LSD P=.05							5.7	1.3	1.6	2.9
	Standard Deviation							3.8	0.9	1.1	2.0
	CV							4.6	1.04	1.27	2.39

Missing data estimates are included in

columns: Average=1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30

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