

BOLT Technology Herbicide Programs - Southern USA.

Trial ID: 16-11A-E110 Location: Belleville Res. Center Trial Year: 2016
Investigator: Karla L. Gage, Ph.D.

Trial Status: F one-year/final Initiation Date: 6-2-16 Completion Date: 8-4-16		Trial Location
City: Belleville State/Prov.: Illinois IL Postal Code: 62221	Country: USA	

Objectives: Evalaute Bolt soybean herbicide programs that include preemergence and postemergence applications.
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Contacts	
Study Director: Karla Gage, Ph.D. Organization: Southern Illinois University Carbondale Address: 1205 Lincoln Drive MC 4415 City+State/Prov: Carbondale, IL Postal Code: 62901 Country: USA	Title: Assistant Professor of Weed Science Phone No.: 618-453-7679 E-mail: kgage@siu.edu

Crop Description	
Crop 1: GLXMA Glycine max Variety: P50T15BR Description: Bolt	Soybean BBCH Scale: BSOY Planting Date: 6-2-16 Planting Method: SEEDED Planting Rate, Unit: 140000 S/A Depth, Unit: 1 IN Row Spacing, Unit: 30 IN

Pest Description	
Pest 1 Type: W Code: SETFA <i>Setaria faberi</i> Herrm. Common Name: foxtail, giant	
Pest 2 Type: W Code: CYPES <i>Cyperus esculentus</i> L. Common Name: nutsedge, yellow	
Pest 3 Type: W Code: AMBTR <i>Ambrosia trifida</i> L. Common Name: ragweed, giant	
Pest 4 Type: W Code: AMATA <i>Amaranthus rudis</i> Sauer Common Name: waterhemp, common	
Pest 5 Type: W Code: IPOHE <i>Ipomoea hederacea</i> (L.) Jacq. Common Name: morningglory, ivyleaf	

Site and Design							
Treated Plot Width: 7.5 FT Treated Plot Length: 30 FT	Total Plot Width: 10 FT Total Plot Length: 30 FT Experimental Unit: 1 PLOT Tillage Type: REDTIL reduced-till Study Design: RACOB� Randomized Complete Block (RCB)						
Replications: 4 Untreated Arrangement: INCLUDED single control randomized in each block							
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>No.</th> <th>Previous Crop</th> <th>Year</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>NONCROP</td> <td>2015</td> </tr> </tbody> </table>		No.	Previous Crop	Year	1.	NONCROP	2015
No.	Previous Crop	Year					
1.	NONCROP	2015					

Maintenance				
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>No.</th> <th>Maintenance Product Name</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>N 0 LB/A, P2O5 50 LB/A, K2O 150 LB/A</td> </tr> </tbody> </table>	No.	Maintenance Product Name	1.	N 0 LB/A, P2O5 50 LB/A, K2O 150 LB/A
No.	Maintenance Product Name			
1.	N 0 LB/A, P2O5 50 LB/A, K2O 150 LB/A			

Soil Description										
Description Name: 11A_2013 % OM: 2.9 pH: 6.8 CEC: 9	Texture: SIL silt loam Soil Name: Pierron									
Additional Measured Elements										
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Element</th> <th>Quantity</th> <th>Unit</th> </tr> </thead> <tbody> <tr> <td>P1</td> <td>72</td> <td>lb/A</td> </tr> <tr> <td>K</td> <td>345</td> <td>lb/A</td> </tr> </tbody> </table>		Element	Quantity	Unit	P1	72	lb/A	K	345	lb/A
Element	Quantity	Unit								
P1	72	lb/A								
K	345	lb/A								

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Overall Moisture Conditions: NORMAL						Moisture and Weather Conditions				
Closest Weather Station: ICN - Belleville IL						Distance, Unit: 0.5 MI				
No.	Date	Amount	Unit	Type	Type Description	Interval	Unit	Min Temp	Max Temp	Temp Unit
1.	4-1-16					7	DAY	32	75	F
2.	4-6-16	0.49	IN	RAIN	rain	1	DAY			
3.	4-8-16					7	DAY	28	71	F
4.	4-10-16	0.97	IN	RAIN	rain	2	DAY			
5.	4-15-16					7	DAY	48	81	F
6.	4-20-16	0.45	IN	RAIN	rain	3	DAY			
7.	4-22-16					7	DAY	47	85	F
8.	4-26-16	1.74	IN	RAIN	rain	2	DAY			
9.	4-29-16					7	DAY	46	75	F
10.	4-29-16	1.94	IN	RAIN	rain	2	DAY			
11.	5-4-16	0.02	IN	RAIN	rain	1	DAY			
12.	5-6-16					7	DAY	44	87	F
13.	5-7-16	0.07	IN	RAIN	rain	1	DAY			
14.	5-9-16	2.12	IN	RAIN	rain	5	DAY			
15.	5-13-16					7	DAY	41	76	F
16.	5-16-16	1.06	IN	RAIN	rain	2	DAY			
17.	5-20-16					7	DAY	51	83	F
18.	5-20-16	0.06	IN	RAIN	rain	1	DAY			
19.	5-25-16	0.68	IN	RAIN	rain	3	DAY			
20.	5-27-16					7	DAY	62	88	F
21.	5-31-16	0.03	IN	RAIN	rain	2	DAY			
22.	6-3-16					7	DAY	55	89	F
23.	6-3-16	0.01	IN	RAIN	rain	1	DAY			
24.	6-4-16	0.72	IN	RAIN	rain	1	DAY			
25.	6-10-16					7	DAY	65	96	F
26.	6-13-16	0.03	IN	RAIN	rain	1	DAY			
27.	6-17-16					7	DAY	67	97	F
28.	6-21-16	0.01	IN	RAIN	rain	1	DAY			
29.	6-24-16					7	DAY	57	95	F
30.	6-25-16	0.02	IN	RAIN	rain	1	DAY			
31.	6-30-16	0.03	IN	RAIN	rain	1	DAY			
32.	7-1-16					7	DAY	60	91	F
33.	7-1-16	2.26	IN	RAIN	rain	4	DAY			
34.	7-6-16	0.32	IN	RAIN	rain	3	DAY			
35.	7-8-16					7	DAY	67	93	F
36.	7-13-16	0.49	IN	RAIN	rain	2	DAY			
37.	7-15-16					7	DAY	68	93	F
38.	7-17-16	0.02	IN	RAIN	rain	1	DAY			
39.	7-19-16	1.47	IN	RAIN	rain	2	DAY			
40.	7-22-16					7	DAY	72	94	F
41.	7-25-16	0.1	IN	RAIN	rain	1	DAY			
42.	7-29-16					7	DAY	69	91	F
43.	7-31-16	0.52	IN	RAIN	rain	3	DAY			
44.	8-3-16	0.75	IN	RAIN	rain	1	DAY			
45.	8-5-16					7	DAY	66	93	F
46.	8-5-16	0.06	IN	RAIN	rain	1	DAY			

Comment:
 Rainfall was recorded on station and provided by Illinois Climate Network.
 Air temperature was recorded at Scott Air Force Base 2.5 miles north and provided by NOAA's National Centers for Environmental Information.
 Air temperatures given are summarized as weekly high and low, detailed weather data is available on request.

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Investigator: Karla L. Gage, Ph.D.**Application Description**

	A	B
Application Date:	6-2-16	6-23-16
Appl. Start Time:	12:30	6:20
Appl. Stop Time:	13:00	6:45
Application Method:	Spray	Spray
Application Timing:	PRE	2-4"W
Application Placement:	BROSOI	BROFOL
Applied By:	KNW	RLS
Air Temperature, Unit:	81 F	85 F
% Relative Humidity:	51	72
Wind Velocity, Unit:	3 MPH	4 MPH
Wind Direction:	N	WSW
Dew Presence (Y/N):	N	N
Soil Temperature, Unit:	73 F	81 F
Soil Moisture:	NORMAL	BELNOR
% Cloud Cover:	25	50
Next Moisture Occurred On:	6-4-16	6-30-16
Time to Next Moisture, Unit:	42 HR	7 DAY

Crop Stage At Each Application

	A	B
Crop 1 Code, BBCH Scale:	GLXMA	GLXMA
Stage Scale Used:	DESC	DESC
Stage Majority, Percent:	NA	V2
Stage Minimum, Percent:		V1
Stage Maximum, Percent:		V2
Height, Unit:		4 IN
Height Minimum, Maximum:		3 4

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Pest Stage At Each Application

	A	B
Pest 1 Code, Type, Scale:	SETFA W	SETFA W
Stage Majority, Percent:	NA	4
Stage Minimum, Percent:		3
Stage Maximum, Percent:		6
Height, Unit:		2 IN
Height Minimum, Maximum:		2 5
Density, Unit:		10 FT2
Pest 2 Code, Type, Scale:	CYPES W	CYPES W
Stage Majority, Percent:	NA	8
Stage Minimum, Percent:		4
Stage Maximum, Percent:		8
Height, Unit:		3 IN
Height Minimum, Maximum:		1 4
Density, Unit:		20 FT2
Pest 3 Code, Type, Scale:	AMBTR W	AMBTR W
Stage Majority, Percent:	NA	6
Stage Minimum, Percent:		6
Stage Maximum, Percent:		8
Height, Unit:		4 IN
Height Minimum, Maximum:		2 6
Density, Unit:		0.05 FT2
Pest 4 Code, Type, Scale:	AMATA W	AMATA W
Stage Majority, Percent:	NA	8
Stage Minimum, Percent:		4
Stage Maximum, Percent:		10+
Height, Unit:		4 IN
Height Minimum, Maximum:		2 8
Density, Unit:		5 FT2
Pest 5 Code, Type, Scale:	IPOHE W	IPOHE W
Stage Majority, Percent:	NA	6
Stage Minimum, Percent:		2
Stage Maximum, Percent:		7
Height, Unit:		2 IN
Height Minimum, Maximum:		1 3
Density, Unit:		0.02 FT2

Application Equipment

	A	B
Appl. Equipment:	CO2 sprayer	CO2 sprayer
Equipment Type:	BACSPR	BACSPR
Operation Pressure, Unit:	30 PSI	30 PSI
Nozzle Type:	XR	XR
Nozzle Size:	8002	8002
Boom Length, Unit:	7.5 FT	7.5 FT
Spray Volume, Unit:	15 GPA	15 GPA

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Pest Code	Crop Code	Rating Date	Rating Type	Rating Unit	Rating Timing	Trt-Eval Interval	GLXMA 6-16-16 Injury Percent 14 DAP 14 DA-A	GLXMA 6-23-16 Injury Percent 21 DA-A 0 DA-B	GLXMA 6-30-16 Injury Percent 7 DA-B	GLXMA 7-7-16 Injury Percent 14 DA-B	GLXMA 7-21-16 Injury Percent 28 DA-B	GLXMA 8-4-16 Injury Percent 42 DA-B
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code			
1	LEADOFF	33.4 SG		0.0313 lb ai/a		1.5 oz/a		PRE	A	0 a	0 a	0 a
	ROUNDUP POWERMAX	4.5 SL		0.77 lb ae/a		22 fl oz/a		2-4"W	B			
	SYNCHRONY XP	28.4 WG		0.02 lb ai/a		1.13 oz/a		2-4"W	B			
	AMS - LIQUID	100 SL		2.5 % v/v		2.5 % v/v		2-4"W	B			
2	LEADOFF	33.4 SG		0.0313 lb ai/a		1.5 oz/a		PRE	A	0 a	0 a	0 a
	VALOR SX	51 WG		0.064 lb ai/a		2 oz/a		PRE	A			
	ROUNDUP POWERMAX	4.5 SL		0.77 lb ae/a		22 fl oz/a		2-4"W	B			
	SYNCHRONY XP	28.4 WG		0.02 lb ai/a		1.13 oz/a		2-4"W	B			
	AMS - LIQUID	100 SL		2.5 % v/v		2.5 % v/v		2-4"W	B			
3	LEADOFF	33.4 SG		0.0313 lb ai/a		1.5 oz/a		PRE	A	0 a	0 a	0 a
	ENVIVE	41.3 WG		0.093 lb ai/a		3.6 oz/a		PRE	A			
	ROUNDUP POWERMAX	4.5 SL		0.77 lb ae/a		22 fl oz/a		2-4"W	B			
	SYNCHRONY XP	28.4 WG		0.02 lb ai/a		1.13 oz/a		2-4"W	B			
	AMS - LIQUID	100 SL		2.5 % v/v		2.5 % v/v		2-4"W	B			
4	LEADOFF	33.4 SG		0.0313 lb ai/a		1.5 oz/a		PRE	A	0 a	0 a	0 a
	CANOPY BLEND	58.3 SG		0.273 lb ai/a		7.5 oz/a		PRE	A			
	ROUNDUP POWERMAX	4.5 SL		0.77 lb ae/a		22 fl oz/a		2-4"W	B			
	SYNCHRONY XP	28.4 WG		0.02 lb ai/a		1.13 oz/a		2-4"W	B			
	AMS - LIQUID	100 SL		2.5 % v/v		2.5 % v/v		2-4"W	B			
5	DILIGENT	37.87 WG		0.095 lb ai/a		4 oz/a		PRE	A	0 a	0 a	0 a
	ROUNDUP POWERMAX	4.5 SL		0.77 lb ae/a		22 fl oz/a		2-4"W	B			
	SYNCHRONY XP	28.4 WG		0.02 lb ai/a		1.13 oz/a		2-4"W	B			
	AMS - LIQUID	100 SL		2.5 % v/v		2.5 % v/v		2-4"W	B			
6	ENVIVE	41.3 WG		0.093 lb ai/a		3.6 oz/a		PRE	A	0 a	0 a	0 a
	ROUNDUP POWERMAX	4.5 SL		0.77 lb ae/a		22 fl oz/a		2-4"W	B			
	SYNCHRONY XP	28.4 WG		0.02 lb ai/a		1.13 oz/a		2-4"W	B			
	AMS - LIQUID	100 SL		2.5 % v/v		2.5 % v/v		2-4"W	B			
7	VALOR SX	51 WG		0.064 lb ai/a		1.02 oz ai/a		PRE	A	0 a	0 a	0 a
	ROUNDUP POWERMAX	4.5 SL		0.77 lb ae/a		22 fl oz/a		2-4"W	B			
	SYNCHRONY XP	28.4 WG		0.02 lb ai/a		1.13 oz/a		2-4"W	B			
	AMS - LIQUID	100 SL		2.5 % v/v		2.5 % v/v		2-4"W	B			
8	SURVEIL	48 WG		0.126 lb ai/a		4.2 oz/a		PRE	A	0 a	0 a	0 a
	ROUNDUP POWERMAX	4.5 SL		0.77 lb ae/a		22 fl oz/a		2-4"W	B			
	AMS - LIQUID	100 SL		2.5 % v/v		2.5 % v/v		2-4"W	B			
9	NONTREATED									0	0	0
LSD P=.05										0.0	0.0	0.0
Standard Deviation										0.0	0.0	0.0
CV										0.0	0.0	0.0
Replicate F										0.000	0.000	0.000
Replicate Prob(F)										1.0000	1.0000	1.0000
Treatment F										0.000	0.000	0.000
Treatment Prob(F)										1.0000	1.0000	1.0000

Means followed by same letter or symbol do not significantly differ (P=.05, LSD)
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
 Could not calculate LSD (% mean diff) for columns 5,11,17,18,24,30,19 because error mean square = 0.

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Pest Code	Crop Code	Rating Date	Rating Type	Rating Unit	Rating Timing	Trt-Eval Interval	SETFA	SETFA	SETFA	SETFA	SETFA			
							6-16-16 Control Percent 14 DAP 14 DA-A	6-23-16 Control Percent 21 DA-A 0 DA-B	7-7-16 Control Percent 14 DA-B	7-21-16 Control Percent 28 DA-B	8-4-16 Control Percent 42 DA-B			
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code					
1	LEADOFF	33.4	SG	0.0313	lb ai/a	1.5	oz/a	PRE	A	88 bcd	96 a	99 a	95 a	97 a
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-4"	W B					
	SYNCHRONY XP	28.4	WG	0.02	lb ai/a	1.13	oz/a	2-4"	W B					
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	2-4"	W B					
2	LEADOFF	33.4	SG	0.0313	lb ai/a	1.5	oz/a	PRE	A	97 ab	96 a	99 a	98 a	98 a
	VALOR SX	51	WG	0.064	lb ai/a	2	oz/a	PRE	A					
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-4"	W B					
	SYNCHRONY XP	28.4	WG	0.02	lb ai/a	1.13	oz/a	2-4"	W B					
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	2-4"	W B					
3	LEADOFF	33.4	SG	0.0313	lb ai/a	1.5	oz/a	PRE	A	94 abc	93 a	99 a	98 a	97 a
	ENVIVE	41.3	WG	0.093	lb ai/a	3.6	oz/a	PRE	A					
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-4"	W B					
	SYNCHRONY XP	28.4	WG	0.02	lb ai/a	1.13	oz/a	2-4"	W B					
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	2-4"	W B					
4	LEADOFF	33.4	SG	0.0313	lb ai/a	1.5	oz/a	PRE	A	84 de	86 ab	99 a	95 a	95 a
	CANOPY BLEND	58.3	SG	0.273	lb ai/a	7.5	oz/a	PRE	A					
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-4"	W B					
	SYNCHRONY XP	28.4	WG	0.02	lb ai/a	1.13	oz/a	2-4"	W B					
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	2-4"	W B					
5	DILIGENT	37.87	WG	0.095	lb ai/a	4	oz/a	PRE	A	92 a-d	81 b	99 a	98 a	98 a
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-4"	W B					
	SYNCHRONY XP	28.4	WG	0.02	lb ai/a	1.13	oz/a	2-4"	W B					
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	2-4"	W B					
6	ENVIVE	41.3	WG	0.093	lb ai/a	3.6	oz/a	PRE	A	84 cde	49 c	99 a	98 a	98 a
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-4"	W B					
	SYNCHRONY XP	28.4	WG	0.02	lb ai/a	1.13	oz/a	2-4"	W B					
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	2-4"	W B					
7	VALOR SX	51	WG	0.064	lb ai/a	1.02	oz ai/a	PRE	A	75 e	54 c	99 a	98 a	98 a
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-4"	W B					
	SYNCHRONY XP	28.4	WG	0.02	lb ai/a	1.13	oz/a	2-4"	W B					
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	2-4"	W B					
8	SURVEIL	48	WG	0.126	lb ai/a	4.2	oz/a	PRE	A	99 a	55 c	99 a	98 a	98 a
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-4"	W B					
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	2-4"	W B					
9	NONTREATED									0	0	0	0	0
LSD P=.05										9.7	10.9	.	2.7	2.3
Standard Deviation										6.6	7.4	0.0	1.8	1.6
CV										7.42	9.75	0.0	1.89	1.61
Replicate F										1.961	0.927	0.000	0.626	0.623
Replicate Prob(F)										0.1509	0.4449	1.0000	0.6060	0.6083
Treatment F										5.600	29.831	0.000	2.410	1.494
Treatment Prob(F)										0.0010	0.0001	1.0000	0.0560	0.2233

Means followed by same letter or symbol do not significantly differ (P=.05, LSD)
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Pest Code	CYPES	CYPES	CYPES	CYPES	CYPES														
Crop Code	6-16-16	6-23-16	7-7-16	7-21-16	8-4-16														
Rating Date	Control	Control	Control	Control	Control														
Rating Type	Percent	Percent	Percent	Percent	Percent														
Rating Unit	14 DAP	21 DA-A	14 DA-B	28 DA-B	42 DA-B														
Rating Timing	14 DA-A	0 DA-B	14 DA-B	28 DA-B	42 DA-B														
Trt-Eval Interval																			
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Other Rate	Other Rate	Growth Stage	Appl Code											
1	LEADOFF	33.4	SG	0.0313	lb ai/a	1.5	oz/a	PRE	A	75	a	63	bc	71	d	95	a	95	b
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-4"	W B										
	SYNCHRONY XP	28.4	WG	0.02	lb ai/a	1.13	oz/a	2-4"	W B										
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	2-4"	W B										
2	LEADOFF	33.4	SG	0.0313	lb ai/a	1.5	oz/a	PRE	A	70	a	53	c	75	cd	97	a	98	a
	VALOR SX	51	WG	0.064	lb ai/a	2	oz/a	PRE	A										
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-4"	W B										
	SYNCHRONY XP	28.4	WG	0.02	lb ai/a	1.13	oz/a	2-4"	W B										
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	2-4"	W B										
3	LEADOFF	33.4	SG	0.0313	lb ai/a	1.5	oz/a	PRE	A	83	a	74	ab	78	bc	98	a	98	ab
	ENVIVE	41.3	WG	0.093	lb ai/a	3.6	oz/a	PRE	A										
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-4"	W B										
	SYNCHRONY XP	28.4	WG	0.02	lb ai/a	1.13	oz/a	2-4"	W B										
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	2-4"	W B										
4	LEADOFF	33.4	SG	0.0313	lb ai/a	1.5	oz/a	PRE	A	84	a	78	a	84	a	95	a	97	ab
	CANOPY BLEND	58.3	SG	0.273	lb ai/a	7.5	oz/a	PRE	A										
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-4"	W B										
	SYNCHRONY XP	28.4	WG	0.02	lb ai/a	1.13	oz/a	2-4"	W B										
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	2-4"	W B										
5	DILIGENT	37.87	WG	0.095	lb ai/a	4	oz/a	PRE	A	85	a	70	ab	83	ab	98	a	97	ab
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-4"	W B										
	SYNCHRONY XP	28.4	WG	0.02	lb ai/a	1.13	oz/a	2-4"	W B										
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	2-4"	W B										
6	ENVIVE	41.3	WG	0.093	lb ai/a	3.6	oz/a	PRE	A	86	a	71	ab	88	a	97	a	97	ab
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-4"	W B										
	SYNCHRONY XP	28.4	WG	0.02	lb ai/a	1.13	oz/a	2-4"	W B										
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	2-4"	W B										
7	VALOR SX	51	WG	0.064	lb ai/a	1.02	oz ai/a	PRE	A	24	b	0	e	65	e	98	a	98	a
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-4"	W B										
	SYNCHRONY XP	28.4	WG	0.02	lb ai/a	1.13	oz/a	2-4"	W B										
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	2-4"	W B										
8	SURVEIL	48	WG	0.126	lb ai/a	4.2	oz/a	PRE	A	83	a	30	d	55	f	84	b	84	c
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-4"	W B										
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	2-4"	W B										
9	NONTREATED									0		0		0		0		0	
LSD P=.05						18.1		15.0		5.0		3.8		3.5					
Standard Deviation						12.3		10.2		3.4		2.6		2.4					
CV						16.76		18.6		4.59		2.71		2.48					
Replicate F						0.236		3.676		6.114		0.882		0.617					
Replicate Prob(F)						0.8706		0.0285		0.0037		0.4664		0.6114					
Treatment F						11.444		27.950		39.304		13.968		16.600					
Treatment Prob(F)						0.0001		0.0001		0.0001		0.0001		0.0001					

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Could not calculate LSD (% mean diff) for columns 5,11,17,18,24,30,19 because error mean square = 0.

BOLT Technology Herbicide Programs - Southern USA.

Trial ID: 16-11A-E110 Location: Belleville Res. Center Trial Year: 2016
Investigator: Karla L. Gage, Ph.D.

Pest Code	Crop Code	Rating Date	Rating Type	Rating Unit	Rating Timing	Trt-Eval Interval	AMBTR	AMBTR	AMBTR	AMBTR	AMBTR	
							6-16-16 Control Percent 14 DAP 14 DA-A	6-23-16 Control Percent 21 DA-A 0 DA-B	7-7-16 Control Percent 14 DA-B	7-21-16 Control Percent 28 DA-B	8-4-16 Control Percent 42 DA-B	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code			
1	LEADOFF	33.4	SG	0.0313	lb ai/a	1.5	oz/a	PRE	A	75 b	68 c	99 a
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-4"	W B			99 a
	SYNCHRONY XP	28.4	WG	0.02	lb ai/a	1.13	oz/a	2-4"	W B			99 a
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	2-4"	W B			99 a
2	LEADOFF	33.4	SG	0.0313	lb ai/a	1.5	oz/a	PRE	A	81 ab	70 bc	99 a
	VALOR SX	51	WG	0.064	lb ai/a	2	oz/a	PRE	A			98 a
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-4"	W B			99 a
	SYNCHRONY XP	28.4	WG	0.02	lb ai/a	1.13	oz/a	2-4"	W B			99 a
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	2-4"	W B			99 a
3	LEADOFF	33.4	SG	0.0313	lb ai/a	1.5	oz/a	PRE	A	90 ab	85 abc	99 a
	ENVIVE	41.3	WG	0.093	lb ai/a	3.6	oz/a	PRE	A			99 a
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-4"	W B			99 a
	SYNCHRONY XP	28.4	WG	0.02	lb ai/a	1.13	oz/a	2-4"	W B			99 a
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	2-4"	W B			99 a
4	LEADOFF	33.4	SG	0.0313	lb ai/a	1.5	oz/a	PRE	A	91 ab	93 a	99 a
	CANOPY BLEND	58.3	SG	0.273	lb ai/a	7.5	oz/a	PRE	A			99 a
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-4"	W B			99 a
	SYNCHRONY XP	28.4	WG	0.02	lb ai/a	1.13	oz/a	2-4"	W B			99 a
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	2-4"	W B			99 a
5	DILIGENT	37.87	WG	0.095	lb ai/a	4	oz/a	PRE	A	91 ab	90 ab	99 a
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-4"	W B			99 a
	SYNCHRONY XP	28.4	WG	0.02	lb ai/a	1.13	oz/a	2-4"	W B			99 a
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	2-4"	W B			99 a
6	ENVIVE	41.3	WG	0.093	lb ai/a	3.6	oz/a	PRE	A	94 ab	94 a	99 a
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-4"	W B			99 a
	SYNCHRONY XP	28.4	WG	0.02	lb ai/a	1.13	oz/a	2-4"	W B			99 a
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	2-4"	W B			99 a
7	VALOR SX	51	WG	0.064	lb ai/a	1.02	oz ai/a	PRE	A	38 c	35 d	99 a
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-4"	W B			99 a
	SYNCHRONY XP	28.4	WG	0.02	lb ai/a	1.13	oz/a	2-4"	W B			99 a
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	2-4"	W B			99 a
8	SURVEIL	48	WG	0.126	lb ai/a	4.2	oz/a	PRE	A	97 a	98 a	99 a
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-4"	W B			99 a
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	2-4"	W B			99 a
9	NONTREATED									0	0	0
LSD P=.05										18.7	20.4	0.5
Standard Deviation										12.7	13.9	0.3
CV										15.55	17.57	0.32
Replicate F										1.137	2.407	0.304
Replicate Prob(F)										0.3571	0.0958	0.8219
Treatment F										9.157	9.131	0.652
Treatment Prob(F)										0.0001	0.0001	0.7088
												0.5315
												0.7905

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BOLT Technology Herbicide Programs - Southern USA.

Trial ID: 16-11A-E110 Location: Belleville Res. Center Trial Year: 2016
Investigator: Karla L. Gage, Ph.D.

Pest Code	Crop Code	Rating Date	Rating Type	Rating Unit	Rating Timing	Trt-Eval Interval	AMATA	AMATA	AMATA	AMATA	AMATA	
							6-16-16 Control Percent 14 DAP 14 DA-A	6-23-16 Control Percent 21 DA-A 0 DA-B	7-7-16 Control Percent 14 DA-B	7-21-16 Control Percent 28 DA-B	8-4-16 Control Percent 42 DA-B	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code			
1	LEADOFF	33.4	SG	0.0313	lb ai/a	1.5	oz/a	PRE	A	57 b	35 b	83 b
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-4"	W B			73 c
	SYNCHRONY XP	28.4	WG	0.02	lb ai/a	1.13	oz/a	2-4"	W B			
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	2-4"	W B			83 b
2	LEADOFF	33.4	SG	0.0313	lb ai/a	1.5	oz/a	PRE	A	96 a	81 a	93 a
	VALOR SX	51	WG	0.064	lb ai/a	2	oz/a	PRE	A			95 ab
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-4"	W B			
	SYNCHRONY XP	28.4	WG	0.02	lb ai/a	1.13	oz/a	2-4"	W B			
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	2-4"	W B			96 a
3	LEADOFF	33.4	SG	0.0313	lb ai/a	1.5	oz/a	PRE	A	94 a	78 a	92 a
	ENVIVE	41.3	WG	0.093	lb ai/a	3.6	oz/a	PRE	A			97 a
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-4"	W B			
	SYNCHRONY XP	28.4	WG	0.02	lb ai/a	1.13	oz/a	2-4"	W B			
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	2-4"	W B			94 a
4	LEADOFF	33.4	SG	0.0313	lb ai/a	1.5	oz/a	PRE	A	94 a	83 a	93 a
	CANOPY BLEND	58.3	SG	0.273	lb ai/a	7.5	oz/a	PRE	A			88 b
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-4"	W B			
	SYNCHRONY XP	28.4	WG	0.02	lb ai/a	1.13	oz/a	2-4"	W B			
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	2-4"	W B			93 a
5	DILIGENT	37.87	WG	0.095	lb ai/a	4	oz/a	PRE	A	96 a	81 a	92 a
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-4"	W B			96 ab
	SYNCHRONY XP	28.4	WG	0.02	lb ai/a	1.13	oz/a	2-4"	W B			
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	2-4"	W B			95 a
6	ENVIVE	41.3	WG	0.093	lb ai/a	3.6	oz/a	PRE	A	95 a	83 a	95 a
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-4"	W B			96 ab
	SYNCHRONY XP	28.4	WG	0.02	lb ai/a	1.13	oz/a	2-4"	W B			
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	2-4"	W B			95 a
7	VALOR SX	51	WG	0.064	lb ai/a	1.02	oz ai/a	PRE	A	89 a	85 a	93 a
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-4"	W B			95 ab
	SYNCHRONY XP	28.4	WG	0.02	lb ai/a	1.13	oz/a	2-4"	W B			
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	2-4"	W B			95 a
8	SURVEIL	48	WG	0.126	lb ai/a	4.2	oz/a	PRE	A	97 a	83 a	92 a
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-4"	W B			97 a
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	2-4"	W B			95 a
9	NONTREATED									0	0	0
LSD P=.05										17.5	19.3	5.9
Standard Deviation										11.9	13.1	4.0
CV										13.31	17.25	4.38
Replicate F										0.891	0.747	1.551
Replicate Prob(F)										0.4619	0.5363	0.2310
Treatment F										5.113	6.481	3.423
Treatment Prob(F)										0.0016	0.0004	0.0134
												0.835
												6.1
												4.4
												0.733
												0.5440
												4.503
												0.0034

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BOLT Technology Herbicide Programs - Southern USA.

Trial ID: 16-11A-E110 Location: Belleville Res. Center Trial Year: 2016
 Investigator: Karla L. Gage, Ph.D.

Pest Code	Crop Code	Rating Date	Rating Type	Rating Unit	Rating Timing	Trt-Eval Interval	IP0HE	IP0HE	IP0HE	IP0HE	IP0HE			
							6-16-16 Control Percent 14 DAP 14 DA-A	6-23-16 Control Percent 21 DA-A 0 DA-B	7-7-16 Control Percent 14 DA-B	7-21-16 Control Percent 28 DA-B	8-4-16 Control Percent 42 DA-B			
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code					
1	LEADOFF	33.4	SG	0.0313	lb ai/a	1.5	oz/a	PRE	A	87 a	87 a	75 d	95 b	97 bc
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-4"	W B					
	SYNCHRONY XP	28.4	WG	0.02	lb ai/a	1.13	oz/a	2-4"	W B					
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	2-4"	W B					
2	LEADOFF	33.4	SG	0.0313	lb ai/a	1.5	oz/a	PRE	A	96 a	98 a	94 ab	97 ab	98 ab
	VALOR SX	51	WG	0.064	lb ai/a	2	oz/a	PRE	A					
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-4"	W B					
	SYNCHRONY XP	28.4	WG	0.02	lb ai/a	1.13	oz/a	2-4"	W B					
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	2-4"	W B					
3	LEADOFF	33.4	SG	0.0313	lb ai/a	1.5	oz/a	PRE	A	96 a	99 a	94 ab	97 ab	99 a
	ENVIVE	41.3	WG	0.093	lb ai/a	3.6	oz/a	PRE	A					
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-4"	W B					
	SYNCHRONY XP	28.4	WG	0.02	lb ai/a	1.13	oz/a	2-4"	W B					
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	2-4"	W B					
4	LEADOFF	33.4	SG	0.0313	lb ai/a	1.5	oz/a	PRE	A	93 a	98 a	88 c	91 c	95 c
	CANOPY BLEND	58.3	SG	0.273	lb ai/a	7.5	oz/a	PRE	A					
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-4"	W B					
	SYNCHRONY XP	28.4	WG	0.02	lb ai/a	1.13	oz/a	2-4"	W B					
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	2-4"	W B					
5	DILIGENT	37.87	WG	0.095	lb ai/a	4	oz/a	PRE	A	98 a	92 a	95 a	98 a	97 abc
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-4"	W B					
	SYNCHRONY XP	28.4	WG	0.02	lb ai/a	1.13	oz/a	2-4"	W B					
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	2-4"	W B					
6	ENVIVE	41.3	WG	0.093	lb ai/a	3.6	oz/a	PRE	A	95 a	97 a	95 a	97 ab	99 a
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-4"	W B					
	SYNCHRONY XP	28.4	WG	0.02	lb ai/a	1.13	oz/a	2-4"	W B					
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	2-4"	W B					
7	VALOR SX	51	WG	0.064	lb ai/a	1.02	oz ai/a	PRE	A	83 a	81 a	90 bc	97 ab	97 ab
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-4"	W B					
	SYNCHRONY XP	28.4	WG	0.02	lb ai/a	1.13	oz/a	2-4"	W B					
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	2-4"	W B					
8	SURVEIL	48	WG	0.126	lb ai/a	4.2	oz/a	PRE	A	95 a	99 a	97 a	97 ab	98 ab
	ROUNDUP POWERMAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	2-4"	W B					
	AMS - LIQUID	100	SL	2.5	% v/v	2.5	% v/v	2-4"	W B					
9	NONTREATED									0	0	0	0	0
LSD P=.05							12.4	14.4	4.2	3.1	1.8			
Standard Deviation							8.4	9.8	2.8	2.1	1.2			
CV							9.1	10.47	3.11	2.21	1.25			
Replicate F							2.647	3.344	3.615	4.608	3.815			
Replicate Prob(F)							0.0755	0.0387	0.0301	0.0125	0.0251			
Treatment F							1.490	1.761	25.086	5.003	3.880			
Treatment Prob(F)							0.2247	0.1488	0.0001	0.0019	0.0073			

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BOLT Technology Herbicide Programs - Southern USA.

Trial ID: 16-11A-E110 Location: Belleville Res. Center Trial Year: 2016
Investigator: Karla L. Gage, Ph.D.

Trial Comments

1. Protocol: DuPont (16-155).
2. Ratings:
CI 14 DAP; 0, 7, 14, 28, and 42 DA-B.
WC 14 DAP; 0, 14, 28, and 42 DA-B.
Rate before spray application B.
3. Yield not requested, do not sell grain from plots with rimsulfuron.
4. Photos not requested.
5. Rainfall following the PRE application A was 0.73 inch over 2 days beginning 42 hours later.
Rainfall following the 2-4"W application B was 2.61 inch over 9 days beginning 7 days later.
6. Ratings for AMBTR and IPOHE at 14 DAP and 0 DA-B were likely influenced by competition from other weeds especially when SETFA, CYPES and AMATA were not controlled.
7. Not harvested.