

# University of Tennessee

## ENLIST SOYBEAN/ENLIST DUO/GLUFOSINATE/2,4-D CHOLINE/AMAPA PROGRAM.

Trial ID: NA16P2E5004-17      Location: Jackson, TN      Trial Year: 2017  
 Protocol ID: NA16P2E004      Investigator: Dr. Larry Steckel  
 Project ID:      Study Director: Larry Steckel  
                                  Sponsor Contact: DOW/Haygood

Trt No. Type	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
1	CHK	UNTREATED					ABC	101	202	309	408	
2	HERB SURVEIL		48 WG	2.83 oz/a		PRE	A	102	210	301	407	
3	HERB SURVEIL		48 WG	2.83 oz/a		PRE	A	103	207	310	406	
	HERB ENLIST DUO	3.33333325	SL	75 oz/a		<4"/28-30 DAA B	B					
	HERB ENLIST DUO	3.33333325	SL	75 oz/a		21DAAB	C					
4	HERB SURVEIL		48 WG	2.1 oz/a		PRE	A	104	205	306	403	
5	HERB SURVEIL		48 WG	2.1 oz/a		PRE	A	105	206	311	410	
	HERB ENLIST DUO	3.33333325	SL	75 oz/a		<4"/28-30 DAA B	B					
	FERT AMMONIUM SULFATE		L	2.5 % v/v		<4"/28-30 DAA B	B					
	HERB ENLIST DUO	3.33333325	SL	75 oz/a		21DAAB	C					
	FERT AMMONIUM SULFATE		L	2.5 % v/v		21DAAB	C					
6	HERB SURVEIL		48 WG	2.1 oz/a		PRE	A	106	208	303	405	
	HERB 2,4-D CHOLINE SALT		3.8 SL	32 oz/a		<4"/28-30 DAA B	B					
	HERB DURANGO DMA		4 SL	32 oz/a		<4"/28-30 DAA B	B					
	FERT AMMONIUM SULFATE		L	2.5 % v/v		<4"/28-30 DAA B	B					
	HERB 2,4-D CHOLINE SALT		3.8 SL	32 oz/a		21DAAB	C					
	HERB DURANGO DMA		4 SL	32 oz/a		21DAAB	C					
	FERT AMMONIUM SULFATE		L	2.5 % v/v		21DAAB	C					
7	HERB SURVEIL		48 WG	2.1 oz/a		PRE	A	107	204	308	411	
	HERB GLUFOSINATE	2.13266659	SL	29 oz/a		<4"/28-30 DAA B	B					
	FERT AMMONIUM SULFATE		L	2.5 % v/v		<4"/28-30 DAA B	B					
	HERB GLUFOSINATE	2.13266659	SL	29 oz/a		21DAAB	C					
	FERT AMMONIUM SULFATE		L	2.5 % v/v		21DAAB	C					
8	HERB SURVEIL		48 WG	2.1 oz/a		PRE	A	108	203	304	402	
	HERB ENLIST DUO	3.33333325	SL	75 oz/a		<4"/28-30 DAA B	B					
	FERT AMMONIUM SULFATE		L	2.5 % v/v		<4"/28-30 DAA B	B					
	HERB GLUFOSINATE	2.13266659	SL	29 oz/a		21 DAAB	C					
	FERT AMMONIUM SULFATE		L	2.5 % v/v		21 DAAB	C					
9	HERB SURVEIL		48 WG	2.1 oz/a		PRE	A	109	211	307	401	
	HERB GLUFOSINATE	2.13266659	SL	29 oz/a		<4"/28-30 DAA B	B					
	FERT AMMONIUM SULFATE		L	2.5 % v/v		<4"/28-30 DAA B	B					
	FERT ENLIST DUO	3.33333325	SL	75 oz/a		21 DAAB	C					
	HERB AMMONIUM SULFATE		L	2.5 % v/v		21 DAAB	C					
10	HERB SURVEIL		48 WG	2.1 oz/a		PRE	A	110	201	305	409	
	HERB ENLIST DUO	3.33333325	SL	75 oz/a		<4"/28-30 DAA B	B					
	HERB PREFIX	5.26999998	EC	32 oz/a		<4"/28-30 DAA B	B					
	FERT AMMONIUM SULFATE		L	2.5 % v/v		<4"/28-30 DAA B	B					
11	HERB SURVEIL		48 WG	2.1 oz/a		PRE	A	111	209	302	404	
	HERB ENLIST DUO	3.33333325	SL	75 oz/a		<4"/28-30 DAA B	B					
	HERB DUAL II MAGNUM	7.63333321	EC	16 oz/a		<4"/28-30 DAA B	B					
	FERT AMMONIUM SULFATE		L	2.5 % v/v		<4"/28-30 DAA B	B					

Sort Order: Replicate 1

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## ENLIST SOYBEAN/ENLIST DUO/GLUFOSINATE/2,4-D CHOLINE/AMAPA PROGRAM.

Trial ID: NA16P2E5004-17      Location: Jackson, TN      Trial Year: 2017  
 Protocol ID: NA16P2E004      Investigator: Dr. Larry Steckel  
 Project ID:      Study Director: Larry Steckel  
                                  Sponsor Contact: DOW/Haygood

### General Trial Information

**Study Director:** Larry Steckel  
**Investigator:** Dr. Larry Steckel  
  
**Planned Completion Date:** 8-1-16  
  
**Conducted Under GLP:** No  
**Conducted Under GEP:** No

### Objectives:

What is the Performance of Enlist Duo herbicide program compared to competitive standards in the STAR Chart on the Efficacy of AMAPA?

### Contacts

**Study Director:** Larry Steckel  
**Investigator:** Dr. Larry Steckel

### Crop Description

**Crop 1:** GLXMA      Glycine max      Soybean  
**Variety:** 51E16H2      **BBCH Scale:** BSOY  
**Description:** AAD-12/GLU/GLY-TOL  
  
**Planting Date:** 5-15-17  
**Planting Method:** PLANTD planted  
**Planting Equipment:** FE      Field Equipment  
  
**Depth, Unit:** 1 in  
**Row Spacing, Unit:** 30 IN  
**Soil Temperature, Unit:** 71 F  
**Soil Moisture:** EXCELL excellent

### Pest Description

**Pest 1 Type:** W      **Code:** AMAPA *Amaranthus palmeri*  
**Common Name:** Palmer amaranth  
**Description:** GLY-RES

### Site and Design

**Treated Plot Width:** 10 FT      **Site Type:** FIELD      field  
**Treated Plot Length:** 30 FT  
**Treated Plot Area:** 300 FT<sup>2</sup>      **Treatments:** 11      **Tillage Type:** NOTILL no-till  
**Replications:** 4      **Study Design:** RACOB� Randomized Complete Block (RCB)  
**Untreated Arrangement:** INCLUDED single control randomized in each block

### Trial Initiation Comments:

ACTUAL CORNERS OF TEST

SE - N35.63035 W088.85730  
 SW - N35.63052 W088.85757  
 NW - N35.63094 W088.85723  
 NE - N35.63074 W088.85693

PLANTED ACREAGE  
 0.454A

**Comment:** June 1 - Seed was buried and boxes burned.

### Field Prep./Maintenance:

11/1/16 - 0-30-60  
 3/20/17 32 OZ/A ROUNDUP WEATHERMAX + 8 OZ/A CLARITY  
 5/2/17 - 48 OZ/A GRAMOXONE SL + 1% COC  
 5/15/17- 48 OZ/A GRAMOXONE SL + 0.25% NIS

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## ENLIST SOYBEAN/ENLIST DUO/GLUFOSINATE/2,4-D CHOLINE/AMAPA PROGRAM.

Trial ID: NA16P2E5004-17      Location: Jackson, TN      Trial Year: 2017  
 Protocol ID: NA16P2E004      Investigator: Dr. Larry Steckel  
 Project ID:      Study Director: Larry Steckel  
                                  Sponsor Contact: DOW/Haygood

### Application Description

	A
Application Date:	5-16-17
Appl. Start Time:	7:42 AM
Appl. Stop Time:	7:56 AM
Application Method:	SPRAY
Application Timing:	PRE
Application Placement:	BROSOL
Applied By:	DC
Air Temperature, Unit:	69 F
% Relative Humidity:	73
Wind Velocity, Unit:	2 MPH
Wind Direction:	SW
Dew Presence (Y/N):	Y yes
Soil Temperature, Unit:	68 F
Soil Moisture:	NORMAL
% Cloud Cover:	10

### Crop Stage At Each Application

	A
Crop 1 Code, BBCH Scale:	GLXMA BSOY
Stage Scale Used:	BBCH
Stage Majority, Percent:	00    100

### Pest Stage At Each Application

	A
Pest 1 Code, Type, Scale:	AMAPA W

### Application Equipment

	A
Appl. Equipment:	BACKPACK
Equipment Type:	BACCAI
Operation Pressure, Unit:	33 PSI
Nozzle Type:	AIXR
Nozzle Size:	110025
Nozzle Spacing, Unit:	19 IN
Nozzles/Row:	2
Boom Length, Unit:	6.33 FT
Boom Height, Unit:	16 IN
Ground Speed, Unit:	4 MPH
Carrier:	WATER
Spray Volume, Unit:	15 GAL/AC
Mix Size, Unit:	0.528 gallons
Propellant:	COMCO2
Tank Mix (Y/N):	Y yes

# University of Tennessee

## EVALUATE A21472C IN XTENDIMAX SOYBEAN SYSTEM/USSG0H3532017

Trial ID: JSBSYNPPO17      Location: JACKSON TN      Trial Year: 2017  
 Protocol ID: HJCH0054-2017US      Investigator: James Holloway  
 Project ID:      Study Director: LARRY STECKEL  
                  Sponsor Contact: James Holloway

Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
1	CHK NONTREATED						101	207	303	403	
2	ADJ INDUCE		0 SL	0.25 % v/v	PRE	A	102	209	301	405	
	HERB GRAMOXONE		2 SL	48 oz/a	PRE	A					
	HERB BOUNDARY		6.5 EC	24 oz/a	PRE	A					
	HERB PREFIX	5.264	EC	32 oz/a	POST	B					
	HERB ROUNDUP POWERMAX	4.5	SL	32 oz/a	POST	B					
3	ADJ INDUCE		0 SL	0.25 % v/v	PRE	A	103	208	310	408	
	HERB GRAMOXONE		2 SL	48 oz/a	PRE	A					
	HERB BROADAXE		7 SC	20 oz/a	PRE	A					
	HERB PREFIX	5.264	EC	32 oz/a	POST	B					
	HERB ROUNDUP POWERMAX	4.5	SL	32 oz/a	POST	B					
4	ADJ INDUCE		0 SL	0.25 % v/v	PRE	A	104	211	311	402	
	HERB GRAMOXONE		2 SL	48 oz/a	PRE	A					
	HERB TAVIUM plusVAPORGRIP	3.38999986649	CS	56.5 oz/a	PRE	A					
	HERB PREFIX	5.264	EC	32 oz/a	POST	B					
	HERB ROUNDUP POWERMAX	4.5	SL	32 oz/a	POST	B					
5	ADJ INDUCE		0 SL	0.25 % v/v	PRE	A	105	212	305	401	
	HERB GRAMOXONE		2 SL	48 oz/a	PRE	A					
	HERB TAVIUM plusVAPORGRIP	3.38999986649	CS	56.5 oz/a	PRE	A					
	HERB TAVIUM plusVAPORGRIP	3.38999986649	CS	56.5 oz/a	POST	B					
	HERB ROUNDUP POWERMAX	4.5	SL	32 oz/a	POST	B					
6	ADJ INDUCE		0 SL	0.25 % v/v	PRE	A	106	210	304	409	
	HERB GRAMOXONE		2 SL	48 oz/a	PRE	A					
	HERB PREFIX	5.264	EC	32 oz/a	PRE	A					
	HERB TRICOR	75	DF	4 oz/a	PRE	A					
	HERB XTENDIMAX	2.9	SL	22 oz/a	POST	B					
	HERB ROUNDUP POWERMAX	4.5	SL	32 oz/a	POST	B					
7	ADJ INDUCE		0 SL	0.25 % v/v	PRE	A	107	203	308	412	
	HERB GRAMOXONE		2 SL	48 oz/a	PRE	A					
	HERB PREFIX	5.264	EC	32 oz/a	PRE	A					
	HERB TRICOR	75	DF	4 oz/a	PRE	A					
	HERB TAVIUM plusVAPORGRIP	3.38999986649	CS	56.5 oz/a	POST	B					
	HERB ROUNDUP POWERMAX	4.5	SL	32 oz/a	POST	B					
8	ADJ INDUCE		0 SL	0.25 % v/v	PRE	A	108	201	302	411	
	HERB GRAMOXONE		2 SL	48 oz/a	PRE	A					
	HERB TAVIUM plusVAPORGRIP	3.38999986649	CS	56.5 oz/a	PRE	A					
	HERB XTENDIMAX	2.9	SL	22 oz/a	POST	B					
	HERB PREFIX	5.264	EC	32 oz/a	POST	B					
	HERB ROUNDUP POWERMAX	4.5	SL	32 oz/a	POST	B					
9	HERB XTENDIMAX	2.9	SL	22 oz/a	PRE	A	109	206	312	406	
	HERB SEQUENCE	5.25	EW	48 oz/a	PRE	A					
	HERB XTENDIMAX	2.9	SL	22 oz/a	POST	B					
	HERB ROUNDUP POWERMAX	4.5	SL	32 oz/a	POST	B					
	HERB PREFIX	5.264	EC	32 oz/a	POST	B					
10	ADJ INDUCE		0 SL	0.25 % v/v	PRE	A	110	204	307	404	
	HERB GRAMOXONE		2 SL	48 oz/a	PRE	A					
	HERB VERDICT	5.57	EC	5 oz/a	PRE	A					
	HERB ZIDUA	85	WG	2 oz/a	POST	B					
	HERB ROUNDUP POWERMAX	4.5	SL	510 g ae/a	POST	B					
11	ADJ INDUCE		0 SL	0.25 % v/v	PRE	A	111	202	309	407	
	HERB GRAMOXONE		2 SL	48 oz/a	PRE	A					
	HERB XTENDIMAX	2.9	SL	22 oz/a	PRE	A					
	HERB XTENDIMAX	2.9	SL	22 oz/a	POST	B					
	HERB ROUNDUP POWERMAX	4.5	SL	32 oz/a	POST	B					
12	ADJ INDUCE		0 SL	0.25 % v/v	PRE	A	112	205	306	410	
	HERB GRAMOXONE		2 SL	48 oz/a	PRE	A					
	HERB ENGENIA	5	EC	12.8 oz/a	PRE	A					
	HERB ENGENIA	5	EC	12.8 oz/a	POST	B					
	HERB ROUNDUP POWERMAX	4.5	SL	32 oz/a	POST	B					

Sort Order: Replicate 1

# University of Tennessee

## EVALUATE A21472C IN XTENDIMAX SOYBEAN SYSTEM/USSG0H3532017

Trial ID: JSBSYNPPO17      Location: JACKSON TN      Trial Year: 2017  
 Protocol ID: HJCH0054-2017US      Investigator: James Holloway  
 Project ID:      Study Director: LARRY STECKEL  
                  Sponsor Contact: James Holloway

### General Trial Information

**Study Director:** LARRY STECKEL  
**Investigator:** James Holloway

**Initiation Date:** 3-16-17

### Trial Location

**Country:** USA United States

USA 49.376656    - 24.53833  
 -124.715843    -66.968887

**Conducted Under GLP:** No  
**Conducted Under GEP:** No

### Contacts

**Study Director:** LARRY STECKEL

**Investigator:** James Holloway

### Crop Description

**Crop 1:** GLXMA      Glycine max      Soybean  
**Variety:** ASGROW 42X6      **BBCH Scale:** BSOY  
**Description:** XTEND

**Planting Rate, Unit:** 8      S/FT      **Planting Date:** 5-3-17  
**Depth, Unit:** 1      IN      **Planting Method:** PLANTD planted  
**Row Spacing, Unit:** 30      IN      **Planting Equipment:** FE      Field Equipment  
**Soil Temperature, Unit:** 61      F  
**Soil Moisture:** NORMAL normal, adequate  
**Seed Bed:** MEDIUM medium

### Pest Description

**Pest 1 Type:** W      **Code:** AMAPA *Amaranthus palmeri*  
**Common Name:** Palmer amaranth

**Pest 2 Type:** W      **Code:** IPOLA *Ipomoea lacunosa*  
**Common Name:** Pitted morningglory

**Pest 3 Type:** W      **Code:** ANNGR Annual Grasses

**Pest 4 Type:** W      **Code:** SIDSP *Sida spinosa*  
**Common Name:** Teaweed

### Site and Design

**Treated Plot Width:** 10 FT      **Site Type:** FIELD field  
**Treated Plot Length:** 30 FT      **Experimental Unit:** 0  
**Treated Plot Area:** 300 FT<sup>2</sup>      **Treatments:** 12      **Tillage Type:** NOTILL no-till  
**Replications:** 4      **Study Design:** RACOB� Randomized Complete Block (RCB)

### Field Prep./Maintenance:

NOV 1, 2016 - 0-30-60  
 3/20/17 32 OZ ROUNDUP WEATHERMAX + 8 OZ CLARITY  
 5/2/17 - 48 OZ/A GRAMOXONE SL + 1% COC  
 5-3- TTI NOZZLES WERE USED WITH DICAMBA PRODUCTS, OTHER WISE AIXR NOZZLES WERE USED.  
 5/9 - 16 OZ SELECT MAX + 1% COC  
 6/1 - TTI NOZZLES WERE USED WITH DICAMBA PRODUCTS, OTHER WISE AIXR NOZZLES WERE USED

# University of Tennessee

## EVALUATE A21472C IN XTENDIMAX SOYBEAN SYSTEM/USSG0H3532017

Trial ID: JSBSYNPPO17  
 Protocol ID: HJCH0054-2017US  
 Project ID:

Location: JACKSON TN Trial Year: 2017  
 Investigator: James Holloway  
 Study Director: LARRY STECKEL  
 Sponsor Contact: James Holloway

### Application Description

	A	B
Application Date:	5-3-17	6-1-17
Appl. Start Time:	12:49 PM	10:00 AM
Appl. Stop Time:	1:04 PM	10:15 AM
Application Method:	SPRAY	SPRAY
Application Timing:	PRE	POST
Application Placement:	BROS0I	BROFOL
Applied By:	DC	DC
Air Temperature, Unit:	80 F	76 F
% Relative Humidity:	50	62
Wind Velocity, Unit:	5 MPH	1 MPH
Wind Direction:	SW	W
Dew Presence (Y/N):	N no	N no
Soil Temperature, Unit:	71 F	74 F
Soil Moisture:	NORMAL	EXCELL
% Cloud Cover:	100	100

### Crop Stage At Each Application

	A	B
Crop 1 Code, BBCH Scale:	GLXMA BSOY	GLXMA BSOY
Stage Scale Used:	BBCH	BBCH
Stage Majority, Percent:	00 100	V3
Height, Unit:		6 IN
Height Minimum, Maximum:		6 7

### Pest Stage At Each Application

	A	B
Pest 1 Code, Type, Scale:	AMAPA W --	AMAPA W 2-4L
Height, Unit:		3 IN
Height Minimum, Maximum:		2 4
Pest 2 Code, Type, Scale:	IPOLA W --	IPOLA W 2L
Height, Unit:		3 IN
Height Minimum, Maximum:		2 4
Pest 3 Code, Type, Scale:	ANNGR W --	ANNGR W 2-3L
Height, Unit:		2 IN
Height Minimum, Maximum:		1 3
Pest 4 Code, Type, Scale:	SIDSP W --	SIDSP W 2L
Height, Unit:		2 IN
Height Minimum, Maximum:		1 2

# University of Tennessee

## EVALUATE A21472C IN XTENDIMAX SOYBEAN SYSTEM/USSG0H3532017

Trial ID: JSBSYNPPO17  
 Protocol ID: HJCH0054-2017US  
 Project ID:

Location: JACKSON TN Trial Year: 2017  
 Investigator: James Holloway  
 Study Director: LARRY STECKEL  
 Sponsor Contact: James Holloway

### Application Equipment

	A	B
<b>Appl. Equipment:</b>	BACKPACK	BACKPACK
<b>Equipment Type:</b>	BACCAI	BACCAI
<b>Operation Pressure, Unit:</b>	28 PSI	28 PSI
<b>Nozzle Type:</b>	TTI	TTI
<b>Nozzle Size:</b>	003	003
<b>Nozzle Spacing, Unit:</b>	19 IN	19 IN
<b>Boom Length, Unit:</b>	6.33 FT	6.33 FT
<b>Boom Height, Unit:</b>	16 IN	16 IN
<b>Ground Speed, Unit:</b>	4 MPH	4 MPH
<b>Incorporation Equip.:</b>	4	4
<b>Hours to Incorp.:</b>	0	0
<b>Carrier:</b>	WATER	WATER
<b>Spray Volume, Unit:</b>	15 gal/ac	15 gal/ac
<b>Mix Size, Unit:</b>	0.528 gallons	0.528 gallons
<b>Propellant:</b>	COMCO2	COMCO2
<b>Tank Mix (Y/N):</b>	Y yes	Y yes

## University of Tennessee

### FEXAPAN IN NO-TILL 2-PASS PROGRAMS FOR RR2X SOYBEAN -SOUTHERN US

Trial ID: JSBDP17-130X      Location: Jackson, TN      Trial Year: 2017  
 Protocol ID: USA-17-130      Investigator: Dr. Larry Steckel  
 Project ID:      Study Director: Larry Steckel  
                  Sponsor Contact: Smith/DuPont

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Growth Stage	Appl Code	Rep 1	Rep 2	Rep 3	Rep 4	Notes
1	HERB TRIVENCE	61.3	DG	8	oz/a	30 DBP	A	101	202	306	404	
	HERB ABUNDIT EDGE	5.5	SL	32.00	fl oz/a	30 DBP	A					
	HERB FEXAPAN	2.9	SL	22.00	fl oz/a	30 DBP	A					
	HERB ABUNDIT EDGE	5.5	SL	32.00	fl oz/a	POST	B					
	HERB FEXAPAN	2.9	SL	22.00	fl oz/a	POST	B					
2	HERB TRIVENCE	61.3	DG	8	oz/a	30 DBP	A	102	207	303	405	
	HERB ABUNDIT EDGE	5.5	SL	32.00	fl oz/a	30 DBP	A					
	HERB FEXAPAN	2.9	SL	22.00	fl oz/a	30 DBP	A					
	HERB ABUNDIT EDGE	5.5	SL	32.00	fl oz/a	POST	B					
	HERB FEXAPAN	2.9	SL	22.00	fl oz/a	POST	B					
	HERB CINCH	7.64	EC	1.00	pt/a	POST	B					
3	HERB ENVIVE	41.3	DF	3.5	oz/a	30 DBP	A	103	201	308	403	
	HERB ABUNDIT EDGE	5.5	SL	32.00	fl oz/a	30 DBP	A					
	HERB FEXAPAN	2.9	SL	22.00	fl oz/a	30 DBP	A					
	HERB ABUNDIT EDGE	5.5	SL	32.00	fl oz/a	POST	B					
	HERB FEXAPAN	2.9	SL	22.00	fl oz/a	POST	B					
4	HERB ENVIVE	41.3	DF	3.5	oz/a	30 DBP	A	104	208	304	406	
	HERB ABUNDIT EDGE	5.5	SL	32.00	fl oz/a	30 DBP	A					
	HERB FEXAPAN	2.9	SL	22.00	fl oz/a	30 DBP	A					
	HERB ABUNDIT EDGE	5.5	SL	32.00	fl oz/a	POST	B					
	HERB FEXAPAN	2.9	SL	22.00	fl oz/a	POST	B					
	HERB CINCH	7.64	EC	1.00	pt/a	POST	B					
5	HERB CANOPY	75	WG	6.00	oz/a	30 DBP	A	105	204	305	408	
	HERB CINCH	7.64	EC	1.00	pt/a	30 DBP	A					
	HERB ABUNDIT EDGE	5.5	SL	32.00	fl oz/a	30 DBP	A					
	HERB FEXAPAN	2.9	SL	22.00	fl oz/a	30 DBP	A					
	HERB ABUNDIT EDGE	5.5	SL	32.00	fl oz/a	POST	B					
	HERB FEXAPAN	2.9	SL	22.00	fl oz/a	POST	B					
6	HERB CANOPY	75	WG	6.00	oz/a	30 DBP	A	106	203	301	407	
	HERB CINCH	7.64	EC	1.00	pt/a	30 DBP	A					
	HERB ABUNDIT EDGE	5.5	SL	32.00	fl oz/a	30 DBP	A					
	HERB FEXAPAN	2.9	SL	22.00	fl oz/a	30 DBP	A					
	HERB ABUNDIT EDGE	5.5	SL	32.00	fl oz/a	POST	B					
	HERB FEXAPAN	2.9	SL	22.00	fl oz/a	POST	B					
	HERB CINCH	7.64	EC	1.00	pt/a	POST	B					
7	HERB BOUNDARY	6.5	EC	2	pt/a	30 DBP	A	107	205	302	401	
	HERB ABUNDIT EDGE	5.5	SL	32.00	fl oz/a	30 DBP	A					
	HERB FEXAPAN	2.9	SL	22.00	fl oz/a	30 DBP	A					
	HERB ABUNDIT EDGE	5.5	SL	32.00	fl oz/a	POST	B					
	HERB FEXAPAN	2.9	SL	22.00	fl oz/a	POST	B					
8	CHK UNTREATED CHECK							108	206	307	402	

Sort Order: Replicate 1



# University of Tennessee

## FEXAPAN IN NO-TILL 2-PASS PROGRAMS FOR RR2X SOYBEAN -SOUTHERN US

Trial ID: JSBDP17-130X      Location: Jackson, TN      Trial Year: 2017  
 Protocol ID: USA-17-130      Investigator: Dr. Larry Steckel  
 Project ID:      Study Director: Larry Steckel  
                                  Sponsor Contact: Smith/DuPont

### General Trial Information

**Study Director:** Larry Steckel  
**Investigator:** Dr. Larry Steckel

### Trial Location

**Country:** USA United States

**Conducted Under GLP:** No  
**Conducted Under GEP:** No

### Objectives:

Evaluate Abundit Edge + FeXapan in tank mixes with other soybean preplant/pre herbicides for weed control and crop tolerance in RR2X soybean.

### Contacts

**Study Director:** Larry Steckel

**Investigator:** Dr. Larry Steckel

### Crop Description

**Crop 1:** GLXMA      Glycine max  
**Variety:** ASGROW 42X6  
**Description:** DICAMBA TOLERANT

**BBCH Scale:** BSOY

**Planting Rate, Unit:** 8      S/FT

**Depth, Unit:** 1      IN

**Row Spacing, Unit:** 30      IN

**Soil Temperature, Unit:** 60      F

**Soil Moisture:** ABONOR above normal, excessive

**Planting Date:** 5-1-17

**Planting Method:** PLANTD planted

**Planting Equipment:** FE      Field Equipment

### Pest Description

**Pest 1 Type:** W      **Code:** POAAN Poa annua  
**Common Name:** Annual bluegrass

**Pest 2 Type:** W      **Code:** ERICA Conyza canadensis  
**Common Name:** Horseweed

**Pest 3 Type:** W      **Code:** CAPBP Capsella bursa-pastoris  
**Common Name:** Shepherd's purse

**Pest 4 Type:** W      **Code:** AMAPA Amaranthus palmeri  
**Common Name:** Palmer amaranth

**Pest 5 Type:** W      **Code:** SIDSP Sida spinosa  
**Common Name:** Teaweed

### Site and Design

**Treated Plot Width:** 5      FT

**Treated Plot Length:** 30      FT

**Treated Plot Area:** 150      FT<sup>2</sup>      **Treatments:** 8  
**Replications:** 3

**Site Type:** FIELD      field

**Tillage Type:** NOTILL      no-till  
**Study Design:** RACOBL Randomized Complete Block (RCB)

### Field Prep./Maintenance:

Nov. 1, 2016 - Area fertilized with 0-30-60

# University of Tennessee

## FEXAPAN IN NO-TILL 2-PASS PROGRAMS FOR RR2X SOYBEAN -SOUTHERN US

Trial ID: JSBDP17-130X      Location: Jackson, TN      Trial Year: 2017  
 Protocol ID: USA-17-130      Investigator: Dr. Larry Steckel  
 Project ID:      Study Director: Larry Steckel  
                                  Sponsor Contact: Smith/DuPont

### Application Description

	A	B
Application Date:	4-4-17	5-22-17
Appl. Start Time:	7:57 AM	8:40 AM
Appl. Stop Time:	8:05 AM	8:49 AM
Application Method:	SPRAY	SPRAY
Application Timing:	30 DBP	POST
Application Placement:	BROFOL	BROFOL
Applied By:	GM	DC
Air Temperature, Unit:	63 F	65 F
% Relative Humidity:	84	64
Wind Velocity, Unit:	1 MPH	6 MPH
Wind Direction:	S	SE
Dew Presence (Y/N):	Y yes	N no
Soil Temperature, Unit:	57 F	66 F
Soil Moisture:	EXCELL	NORMAL
% Cloud Cover:	40	95

### Crop Stage At Each Application

	A	B
Crop 1 Code, BBCH Scale:	GLXMA BSOY	GLXMA BSOY
Stage Scale Used:	--	V1
Height, Unit:		3 IN
Height Minimum, Maximum:		3 4

### Pest Stage At Each Application

	A	B
Pest 1 Code, Type, Scale:	POAAN W SEED	POAAN W --
Diameter, Unit:	3 IN	
Height, Unit:	3 IN	
Height Minimum, Maximum:	3 4	
Pest 2 Code, Type, Scale:	ERICA W 20+L	ERICA W --
Diameter, Unit:	5 IN	
Height, Unit:	6 IN	
Height Minimum, Maximum:	5 6	
Pest 3 Code, Type, Scale:	CAPBP W FLOW	CAPBP W --
Height, Unit:	11 IN	
Height Minimum, Maximum:	10 12	
Pest 4 Code, Type, Scale:	AMAPA W --	AMAPA W 2-4L
Height, Unit:		3 IN
Height Minimum, Maximum:		3 4
Pest 5 Code, Type, Scale:	SIDSP W --	SIDSP W 2L
Height, Unit:		2 IN
Height Minimum, Maximum:		1 4

# University of Tennessee

## FEXAPAN IN NO-TILL 2-PASS PROGRAMS FOR RR2X SOYBEAN -SOUTHERN US

Trial ID: JSBDP17-130X  
 Protocol ID: USA-17-130  
 Project ID:

Location: Jackson, TN Trial Year: 2017  
 Investigator: Dr. Larry Steckel  
 Study Director: Larry Steckel  
 Sponsor Contact: Smith/DuPont

### Application Equipment

	A	B
<b>Appl. Equipment:</b>	BACKPACK	BACKPACK
<b>Equipment Type:</b>	BACCAI	BACCAI
<b>Operation Pressure, Unit:</b>	32 PSI	32 PSI
<b>Nozzle Type:</b>	TTI	TTI
<b>Nozzle Size:</b>	025	025
<b>Nozzle Spacing, Unit:</b>	20 IN	20 IN
<b>Boom Length, Unit:</b>	5 FT	5 FT
<b>Boom Height, Unit:</b>	16 IN	16 IN
<b>Ground Speed, Unit:</b>	4 MPH	4 MPH
<b>Carrier:</b>	WATER	WATER
<b>Spray Volume, Unit:</b>	15 gal/ac	15 gal/ac
<b>Mix Size, Unit:</b>	0.528 gallons	0.528 gallons
<b>Propellant:</b>	COMCO2	COMCO2
<b>Tank Mix (Y/N):</b>	Y yes	Y yes

## University of Tennessee

### BALNCE GT/BALANCE BEAN/GLMXA/DEMO

Trial ID: HP17USAXP4UZW1      Location: JACKSON TN      Trial Year: 2017  
 Protocol ID: HP17USAXP4UZW1      Investigator: Dr. Larry Steckel  
 Project ID:      Study Director: LARRY STECKEL  
    Sponsor Contact: JOSHUA JONES

Trt No. Type	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep			Notes
								1	2	3	
1	CHK							101	204	309	
2	HERB BALANCE BEAN	4	SC	3 oz/a		PRE	A	102	208	304	
	HERB SPARTAN	4	F	5 oz/a		PRE	A				
	HERB ROUNDUP POWERMAX	4.5	SL	32 oz/a		EPOST	B				
	FERT AMS		WG	8.5 lb/100 gal		EPOST	B				
3	HERB BALANCE BEAN	4	SC	3 oz/a		PRE	A	103	202	308	
	HERB DUAL II MAGNUM	7.64	EC	16 oz/a		PRE	A				
	HERB ROUNDUP POWERMAX	4.5	SL	32 oz/a		EPOST	B				
	FERT AMS		WG	8.5 lb/100 gal		EPOST	B				
4	HERB BALANCE BEAN	4	SC	3 oz/a		PRE	A	104	209	303	
	HERB ZIDUA	85	WG	1.5 oz/a		PRE	A				
	HERB ROUNDUP POWERMAX	4.5	SL	32 oz/a		EPOST	B				
	FERT AMS		WG	8.5 lb/100 gal		EPOST	B				
5	HERB FIERCE	76	WG	3 oz/a		PRE	A	105	205	302	
	HERB ROUNDUP POWERMAX	4.5	SL	32 oz/a		EPOST	B				
	FERT AMS		WG	8.5 lb/100 gal		EPOST	B				
6	HERB BALANCE BEAN	4	SC	3 oz/a		PRE	A	106	203	306	
	HERB VALOR SX	51	WG	2 oz/a		PRE	A				
	HERB ROUNDUP POWERMAX	4.5	SL	32 oz/a		EPOST	B				
	FERT AMS		WG	8.5 lb/100 gal		EPOST	B				
7	HERB BALANCE BEAN	4	SC	3 oz/a		PRE	A	107	210	310	
	HERB TRICOR	75	DF	5.33 oz/a		PRE	A				
	HERB ROUNDUP POWERMAX	4.5	SL	32 oz/a		EPOST	B				
	FERT AMS		WG	8.5 lb/100 gal		EPOST	B				
8	HERB BALANCE BEAN	4	SC	3 oz/a		PRE	A	108	207	301	
	HERB WARRANT	3	SL	48 oz/a		PRE	A				
	HERB ROUNDUP POWERMAX	4.5	SL	32 oz/a		EPOST	B				
	FERT AMS		WG	8.5 lb/100 gal		EPOST	B				
9	HERB BALANCE BEAN	4	SC	3 oz/a		PRE	A	109	201	307	
	HERB BOUNDARY	6.5	EC	32 oz/a		PRE	A				
	HERB ROUNDUP POWERMAX	4.5	SL	32 oz/a		EPOST	B				
	FERT AMS		WG	8.5 lb/100 gal		EPOST	B				
10	HERB BALANCE BEAN	4	SC	3 oz/a		PRE	A	110	206	305	
	HERB PREFIX	5.264	EC	32 oz/a		PRE	A				
	HERB ROUNDUP POWERMAX	4.5	SL	32 oz/a		EPOST	B				
	FERT AMS		WG	8.5 lb/100 gal		EPOST	B				

Sort Order: Replicate 1

# University of Tennessee

## BALNCE GT/BALANCE BEAN/GLMXA/DEMO

Trial ID: HP17USAXP4UZW1  
 Protocol ID: HP17USAXP4UZW1  
 Project ID:

Location: JACKSON TN Trial Year: 2017  
 Investigator: Dr. Larry Steckel  
 Study Director: LARRY STECKEL  
 Sponsor Contact: JOSHUA JONES

### General Trial Information

**Study Director:** LARRY STECKEL  
**Investigator:** Dr. Larry Steckel

### Trial Location

**Country:** USA United States

**Conducted Under GLP:** No  
**Conducted Under GEP:** No

### Contacts

**Study Director:** LARRY STECKEL

**Investigator:** Dr. Larry Steckel

### Crop Description

**Crop 1:** GLXMA Glycine max  
**Variety:** 17LUGM000089  
**Description:** BALANCE GT

**BBCH Scale:** BSOY  
 Soybean

**Planting Rate, Unit:** 8 S/FT  
**Depth, Unit:** 1 IN  
**Row Spacing, Unit:** 30 IN  
**Soil Temperature, Unit:** 60 F  
**Soil Moisture:** NORMAL normal, adequate

**Planting Date:** 5-8-17  
**Planting Method:** PLANTD planted  
**Planting Equipment:** FE Field Equipment

### Site and Design

**Treated Plot Width:** 7.5 FT  
**Treated Plot Length:** 30 FT

**Site Type:** FIELD field

**Treated Plot Area:** 225 FT<sup>2</sup> **Treatments:** 10  
**Replications:** 3

**Tillage Type:** NOTILL no-till

**Study Design:** RACOB L Randomized Complete Block (RCB)

**Comment:** June 1 - Seed was buried in plot and boxes burned

### Field Prep./Maintenance:

11/1/16 - 0-30-60

3/20/17 - 32 OZ/A ROUNDUP WEATHERMAX + 8 OZ/A CLARITY

5/2/17 - 48 OZ/A GRAMOXONE SL + 1% COC

### Application Description

	A	B
<b>Application Date:</b>	5-9-17	6-5-17
<b>Appl. Start Time:</b>	10:51 AM	1:50 PM
<b>Appl. Stop Time:</b>	11:08 AM	2:05 PM
<b>Application Method:</b>	SPRAY	SPRAY
<b>Application Timing:</b>	PRE	EPOST
<b>Application Placement:</b>	BROSOI	BROFOL
<b>Applied By:</b>	DC	DC
<b>Air Temperature, Unit:</b>	87 F	87 F
<b>% Relative Humidity:</b>	42	65
<b>Wind Velocity, Unit:</b>	5 MPH	2 MPH
<b>Wind Direction:</b>	NW	N
<b>Dew Presence (Y/N):</b>	N no	N no
<b>Soil Temperature, Unit:</b>	70 F	84 F
<b>Soil Moisture:</b>	NORMAL	NORMAL
<b>% Cloud Cover:</b>	25	90

# University of Tennessee

## BALNCE GT/BALANCE BEAN/GLMXA/DEMO

Trial ID: HP17USAXP4UZW1  
 Protocol ID: HP17USAXP4UZW1  
 Project ID:

Location: JACKSON TN Trial Year: 2017  
 Investigator: Dr. Larry Steckel  
 Study Director: LARRY STECKEL  
 Sponsor Contact: JOSHUA JONES

### Crop Stage At Each Application

	A	B
<b>Crop 1 Code, BBCH Scale:</b>	GLXMA BSOY	GLXMA BSOY
<b>Stage Scale Used:</b>	BBCH	V4
<b>Stage Majority, Percent:</b>	00 100	
<b>Height, Unit:</b>		8 IN
<b>Height Minimum, Maximum:</b>		7 9

### Application Equipment

	A	B
<b>Appl. Equipment:</b>	BACKPACK	BACKPACK
<b>Equipment Type:</b>	BACCAI	BACCAI
<b>Operation Pressure, Unit:</b>	28 PSI	28 PSI
<b>Nozzle Type:</b>	AIXR	AIXR
<b>Nozzle Size:</b>	11003	11003
<b>Nozzle Spacing, Unit:</b>	20 IN	20 IN
<b>Boom ID:</b>	5 FT @ 15GPA	5 FT @ 15GPA
<b>Boom Length, Unit:</b>	5 FT	5 FT
<b>Boom Height, Unit:</b>	16 IN	16 IN
<b>Ground Speed, Unit:</b>	4 MPH	4 MPH
<b>Spray Volume, Unit:</b>	15 GAL/AC	15 GAL/AC
<b>Mix Size, Unit:</b>	0.528 gallons	0.528 gallons
<b>Spray pH:</b>	0.528	0.528
<b>Propellant:</b>	COMCO2	COMCO2
<b>Tank Mix (Y/N):</b>	Y yes	Y yes

## University of Tennessee

### Liberty/LCM Increased Liberty rates/LL soy/Efficacy, tolerance

Trial ID: HP17USAWGKUZW1      Location: Jackson TN      Trial Year: 2017  
 Protocol ID: HP17USAWGKUZW1      Investigator: Dr. Larry Steckel  
 Project ID:      Study Director: Larry Steckel  
    Sponsor Contact: Joshua Jones

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
1	CHK							101	207	309	405	
2	HERB AUTHORITY FIRST	0.7	DF	6.5 oz/a		PRE	A	102	201	305	408	
	HERB LIBERTY 280	2.34	SL	32 oz/a		EPOST	B					
	FERT AMS		WG	8.5 lb/100 gal		EPOST	B					
	HERB LIBERTY 280	2.34	SL	32 oz/a		7 DAB	C					
	FERT AMS		WG	8.5 lb/100 gal		7 DAB	C					
3	HERB AUTHORITY FIRST	0.7	DF	6.5 oz/a		PRE	A	103	209	303	401	
	HERB LIBERTY 280	2.34	SL	43 oz/a		MPOST	D					
	FERT AMS		WG	8.5 lb/100 gal		MPOST	D					
	HERB LIBERTY 280	2.34	SL	43 oz/a		LPOST	E					
	FERT AMS		WG	8.5 lb/100 gal		LPOST	E					
4	HERB AUTHORITY FIRST	0.7	DF	6.5 oz/a		PRE	A	104	206	302	407	
	HERB LIBERTY 280	2.34	SL	32 oz/a		EPOST	B					
	FERT AMS		WG	8.5 lb/100 gal		EPOST	B					
5	HERB AUTHORITY FIRST	0.7	DF	6.5 oz/a		PRE	A	105	204	308	409	
	HERB LIBERTY 280	2.34	SL	43 oz/a		MPOST	D					
	FERT AMS		WG	8.5 lb/100 gal		MPOST	D					
6	HERB AUTHORITY FIRST	0.7	DF	6.5 oz/a		PRE	A	106	208	301	404	
	HERB LIBERTY 280	2.34	SL	32 oz/a		EPOST	B					
	FERT AMS		WG	8.5 lb/100 gal		EPOST	B					
	HERB CADET	0.9	EC	0.5 oz/a		EPOST	B					
7	HERB AUTHORITY FIRST	0.7	DF	6.5 oz/a		PRE	A	107	205	306	402	
	HERB LIBERTY 280	2.34	SL	32 oz/a		EPOST	B					
	FERT AMS		WG	8.5 lb/100 gal		EPOST	B					
	HERB ANTHEM	2.15	SE	7 oz/a		EPOST	B					
8	HERB AUTHORITY FIRST	0.7	DF	6.5 oz/a		PRE	A	108	203	304	406	
	HERB LIBERTY 280	2.34	SL	32 oz/a		7 DAB	C					
	HERB FLEXSTAR	1.88	SL	16 oz/a		7 DAB	C					
	FERT AMS		WG	8.5 lb/100 gal		7 DAB	C					
	HERB LIBERTY 280	2.34	SL	32 oz/a		MPOST	D					
	FERT AMS		WG	8.5 lb/100 gal		MPOST	D					
9	HERB AUTHORITY FIRST	0.7	DF	6.5 oz/a		PRE	A	109	202	307	403	
	HERB LIBERTY 280	2.34	SL	32 oz/a		7 DAB	C					
	HERB ZIDUA	85	WG	1.5 oz/a		7 DAB	C					
	FERT AMS		WG	8.5 lb ai/100 gal		7 DAB	C					
	HERB LIBERTY 280	2.34	SL	32 oz/a		MPOST	D					
	FERT AMS		WG	8.5 lb/100 gal		MPOST	D					

Sort Order: Replicate 1

# University of Tennessee

## Liberty/LCM Increased Liberty rates/LL soy/Efficacy, tolerance

Trial ID: HP17USAWGKUZW1  
 Protocol ID: HP17USAWGKUZW1  
 Project ID:

Location: Jackson TN Trial Year: 2017  
 Investigator: Dr. Larry Steckel  
 Study Director: Larry Steckel  
 Sponsor Contact: Joshua Jones

### General Trial Information

**Study Director:** Larry Steckel  
**Investigator:** Dr. Larry Steckel

### Trial Location

**Country:** USA United States

**Conducted Under GLP:** No  
**Conducted Under GEP:** No

### Contacts

**Study Director:** Larry Steckel

**Investigator:** Dr. Larry Steckel

### Crop Description

**Crop 1:** GLXMA Glycine max Soybean  
**Variety:** CZ4748LL **BBCH Scale:** BSOY  
**Description:** LIBERTY LINK  
**Planting Date:** 5-15-17  
**Planting Rate, Unit:** 8 S/FT **Planting Method:** PLANTD planted  
**Depth, Unit:** 1 IN **Planting Equipment:** FE Field Equipment  
**Row Spacing, Unit:** 30 IN  
**Soil Moisture:** EXCELL excellent  
**Seed Bed:** MEDIUM medium

### Pest Description

**Pest 1 Type:** W **Code:** AMAPA Amaranthus palmeri  
**Common Name:** Palmer amaranth

**Pest 2 Type:** W **Code:** ANNGR Annual Grasses

### Site and Design

**Treated Plot Width:** 10 FT **Site Type:** FIELD field  
**Treated Plot Length:** 30 FT  
**Treated Plot Area:** 300 FT2 **Treatments:** 9 **Tillage Type:** NOTILL no-till  
**Replications:** 4 **Study Design:** RACOB� Randomized Complete Block (RCB)

### Field Prep./Maintenance:

11/1/16 - 0-30-60  
 3/20/17 32 OZ/A ROUNDUP WEATHERMAX + 8 OZ/A CLARITY  
 5/2/17 - 48 OZ/A GRAMOXONE SL + 1% COC  
 5/15/17- 48 OZ/A GRAMOXONE SL + 0.25% NIS



# University of Tennessee

## Liberty/LCM Increased Liberty rates/LL soy/Efficacy, tolerance

Trial ID: HP17USAWGKUZW1  
 Protocol ID: HP17USAWGKUZW1  
 Project ID:

Location: Jackson TN Trial Year: 2017  
 Investigator: Dr. Larry Steckel  
 Study Director: Larry Steckel  
 Sponsor Contact: Joshua Jones

### Application Description

	A	B	C	D	E
Application Date:	5-15-17	6-5-17			
Appl. Start Time:	1:46 PM	12:50 PM			
Appl. Stop Time:	1:55 PM	12:57 PM			
Application Method:	SPRAY	SPRAY	SPRAY	SPRAY	SPRAY
Application Timing:	PRE	EPOST	7DAB	MPOST	LPOST
Application Placement:	BROSOL	BROFOL			
Applied By:	JR	DC			
Air Temperature, Unit:	82 F	86 F			
% Relative Humidity:	44	63			
Wind Velocity, Unit:	3 MPH	3 MPH			
Wind Direction:	SW	NW			
Dew Presence (Y/N):	N no	N no			
Soil Temperature, Unit:	81 F	84 F			
Soil Moisture:	NORMAL	NORMAL			
% Cloud Cover:	0	95			

### Crop Stage At Each Application

	A	B	C	D	E
Crop 1 Code, BBCH Scale:	GLXMA BSOY	GLXMA BSOY	GLXMA BSOY	GLXMA BSOY	GLXMA BSOY
Stage Scale Used:	BBCH	V2			
Stage Majority, Percent:	00 100				
Height, Unit:		4 IN			
Height Minimum, Maximum:		4 5			

### Pest Stage At Each Application

	A	B	C	D	E
Pest 1 Code, Type, Scale:	AMAPA W --	AMAPA W 2L	AMAPA W	AMAPA W	AMAPA W
Height, Unit:		2 IN			
Height Minimum, Maximum:		2 3			
Pest 2 Code, Type, Scale:	ANNGR W --	ANNGR W 1-2L	ANNGR W	ANNGR W	ANNGR W
Height, Unit:		2 IN			
Height Minimum, Maximum:		1 2			

# University of Tennessee

## Liberty/LCM Increased Liberty rates/LL soy/Efficacy, tolerance

Trial ID: HP17USAWGKUZW1  
 Protocol ID: HP17USAWGKUZW1  
 Project ID:

Location: Jackson TN Trial Year: 2017  
 Investigator: Dr. Larry Steckel  
 Study Director: Larry Steckel  
 Sponsor Contact: Joshua Jones

### Application Equipment

	A	B	C	D	E
<b>Appl. Equipment:</b>	Tractor	BACKPACK			
<b>Equipment Type:</b>		BACCAI			
<b>Operation Pressure, Unit:</b>	40 PSI	33 PSI			
<b>Nozzle Type:</b>	AIR INDUC	AIXR			
<b>Nozzle Size:</b>	AI110015	110025			
<b>Nozzle Spacing, Unit:</b>	19 IN	19 IN			
<b>Nozzles/Row:</b>	2	2			
<b>Boom Length, Unit:</b>		6.33 FT			
<b>Boom Height, Unit:</b>	10 FT	16 IN			
<b>Ground Speed, Unit:</b>	15 IN	4 MPH			
<b>Incorporation Equip.:</b>	4				
<b>Hours to Incorp.:</b>	MPH				
<b>Carrier:</b>	WATER	WATER			
<b>Spray Volume, Unit:</b>	11 GPA	15 GAL/AC			
<b>Mix Size, Unit:</b>		0.528 gallons			
<b>Propellant:</b>		COMCO2			
<b>Tank Mix (Y/N):</b>	Y	Y yes			

## University of Tennessee

### SOYBEAN WEED RESISTANCE MANAGEMENT IN THE SOUTHERN STATES

Trial ID: JSBDP17-110  
 Protocol ID: USA-17-110  
 Project ID:

Location: Jackson, TN Trial Year: 2017  
 Investigator: Dr. Larry Steckel  
 Study Director: Larry Steckel  
 Sponsor Contact: Smith/DuPont

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
1	HERB CANOPY	75	WG	6.00	oz/a	PRE	A	101	208	304	407	
	HERB CINCH	7.64	EC	1.25	pt/a	PRE	A					
	HERB LIBERTY 280	2.34	SL	29.00	fl oz/a	POST	B					
	HERB CINCH	7.64	EC	1.00	pt/a	POST	B					
	FERT AMS	100	SG	2.00	lb/a	POST	B					
2	HERB CANOPY	75	WG	6.00	oz/a	PRE	A	102	204	310	409	
	HERB ZIDUA	85	WG	1.50	oz/a	PRE	A					
	HERB LIBERTY 280	2.34	SL	29.00	fl oz/a	POST	B					
	HERB CINCH	7.64	EC	1.00	pt/a	POST	B					
	FERT AMS	100	SG	2.00	lb/a	POST	B					
3	HERB CANOPY	75	WG	2.25	oz/a	PRE	A	103	210	301	404	
	HERB BOUNDARY	6.5	EC	1.50	pt/a	PRE	A					
	HERB LIBERTY 280	2.34	SL	29.00	fl oz/a	POST	B					
	HERB CINCH	7.64	EC	1.00	pt/a	POST	B					
	FERT AMS	100	SG	2.00	lb/a	POST	B					
4	HERB TRIVENCE	61.3	DG	8	oz/a	PRE	A	104	206	311	408	
	HERB LIBERTY 280	2.34	SL	29.00	fl oz/a	POST	B					
	HERB CINCH	7.64	EC	1.00	pt/a	POST	B					
	FERT AMS	100	SG	2.00	lb/a	POST	B					
5	HERB TRIVENCE	61.3	DG	8	oz/a	PRE	A	105	212	307	410	
	HERB ZIDUA	85	WG	1.50	oz/a	PRE	A					
	HERB LIBERTY 280	2.34	SL	29.00	fl oz/a	POST	B					
	HERB CINCH	7.64	EC	1.00	pt/a	POST	B					
	FERT AMS	100	SG	2.00	lb/a	POST	B					
6	HERB COMBO 776					PRE	A	106	203	312	405	
	HERB CHLORIMURON	25	WG	0.9	oz wt/a	PRE	A					
	HERB METRIBUZIN	75	DF	6.3	oz wt/a	PRE	A					
	HERB FLUMIOXAZIN	51	WG	1.8	oz wt/a	PRE	A					
	HERB LIBERTY 280	2.34	SL	29.00	fl oz/a	POST	B					
	HERB CINCH	7.64	EC	1.00	pt/a	POST	B					
	FERT AMS	100	SG	2.00	lb/a	POST	B					
7	HERB COMBO 776					PRE	A	107	209	303	406	
	HERB CHLORIMURON	25	WG	0.9	oz/a	PRE	A					
	HERB METRIBUZIN	75	DF	6.3	oz/a	PRE	A					
	HERB FLUMIOXAZIN	51	WG	1.8	oz/a	PRE	A					
	HERB ZIDUA	85	WG	1.50	oz/a	PRE	A					
	HERB LIBERTY 280	2.34	SL	29.00	fl oz/a	POST	B					
	HERB CINCH	7.64	EC	1.00	pt/a	POST	B					
	FERT AMS	100	SG	2.00	lb/a	POST	B					
8	HERB COMBO 710					PRE	A	108	205	302	412	
	HERB CHLORIMURON	25	WG	1.15	oz/a	PRE	A					
	HERB METRIBUZIN	75	DF	6.1	oz/a	PRE	A					
	HERB CINCH	7.64	EC	1.25	pt/a	PRE	A					
	HERB LIBERTY 280	2.34	SL	29.00	fl oz/a	POST	B					
	HERB CINCH	7.64	EC	1.00	pt/a	POST	B					
	FERT AMS	100	SG	2.00	lb/a	POST	B					
9	HERB COMBO 710					PRE	A	109	207	305	411	
	HERB CHLORIMURON	25	WG	1.15	oz/a	PRE	A					
	HERB METRIBUZIN	75	DF	6.1	oz/a	PRE	A					
	HERB ZIDUA	85	WG	1.50	oz/a	PRE	A					
	HERB LIBERTY 280	2.34	SL	29.00	fl oz/a	POST	B					
	HERB CINCH	7.64	EC	1.00	pt/a	POST	B					
	FERT AMS	100	SG	2.00	lb/a	POST	B					
10	HERB ENVIVE	41.3	DF	3.5	oz/a	PRE	A	110	201	308	402	
	HERB LIBERTY 280	2.34	SL	29.00	fl oz/a	POST	B					
	HERB CINCH	7.64	EC	1.00	pt/a	POST	B					
	FERT AMS	100	SG	2.00	lb/a	POST	B					
11	HERB BOUNDARY	6.5	EC	2.00	pt/a	PRE	A	111	202	309	401	
	HERB LIBERTY 280	2.34	SL	29.00	fl oz/a	POST	B					
	HERB CINCH	7.64	EC	1.00	pt/a	POST	B					
	FERT AMS	100	SG	2.00	lb/a	POST	B					
12	CHK UNTREATED CHECK							112	211	306	403	

# University of Tennessee

## SOYBEAN WEED RESISTANCE MANAGEMENT IN THE SOUTHERN STATES

Trial ID: JSBDP17-110      Location: Jackson, TN      Trial Year: 2017  
 Protocol ID: USA-17-110      Investigator: Dr. Larry Steckel  
 Project ID:      Study Director: Larry Steckel  
                  Sponsor Contact: Smith/DuPont

### General Trial Information

**Study Director:** Larry Steckel  
**Investigator:** Dr. Larry Steckel

### Trial Location

**Country:** USA United States

**Conducted Under GLP:** No  
**Conducted Under GEP:** No

### Objectives:

Evaluate soybean herbicide programs at universities for control of resistant weeds especially amaranthus species.

### Contacts

**Study Director:** Larry Steckel

**Investigator:** Dr. Larry Steckel

### Crop Description

**Crop 1:** GLXMA Glycine max      Soybean  
**Variety:** CZ4748LL      **BBCH Scale:** BSOY  
**Description:** LIBERTY LINK  
**Planting Rate, Unit:** 8      S/FT  
**Depth, Unit:** 1      IN  
**Row Spacing, Unit:** 30      IN  
**Soil Moisture:** EXCELL excellent  
**Seed Bed:** MEDIUM medium  
**Planting Date:** 5-15-17  
**Planting Method:** PLANTD planted  
**Planting Equipment:** FE      Field Equipment

### Site and Design

**Treated Plot Width:** 10 FT      **Site Type:** FIELD field  
**Treated Plot Length:** 30 FT  
**Treated Plot Area:** 300 FT<sup>2</sup>      **Treatments:** 12      **Tillage Type:** NOTILL no-till  
**Replications:** 3      **Study Design:** RACOBL Randomized Complete Block (RCB)

### Field Prep./Maintenance:

11/1/16 - 0-30-60  
 3/20/17 32 OZ/A ROUNDUP WEATHERMAX + 8 OZ/A CLARITY  
 5/2/17 - 48 OZ/A GRAMOXONE SL + 1% COC  
 5/15/17- 48 OZ/A GRAMOXONE SL + 0.25% NIS

### Application Description

	A
<b>Application Date:</b>	5-16-17
<b>Appl. Start Time:</b>	8:43 AM
<b>Appl. Stop Time:</b>	9:00 AM
<b>Application Method:</b>	SPRAY
<b>Application Timing:</b>	PRE
<b>Application Placement:</b>	BROSOL
<b>Applied By:</b>	DC
<b>Air Temperature, Unit:</b>	76 F
<b>% Relative Humidity:</b>	64
<b>Wind Velocity, Unit:</b>	4 MPH
<b>Wind Direction:</b>	S
<b>Dew Presence (Y/N):</b>	N no
<b>Soil Temperature, Unit:</b>	71
<b>Soil Moisture:</b>	NORMAL
<b>% Cloud Cover:</b>	10

# University of Tennessee

## SOYBEAN WEED RESISTANCE MANAGEMENT IN THE SOUTHERN STATES

Trial ID: JSBDP17-110      Location: Jackson, TN    Trial Year: 2017  
 Protocol ID: USA-17-110    Investigator: Dr. Larry Steckel  
 Project ID:                      Study Director: Larry Steckel  
    Sponsor Contact: Smith/DuPont

### Crop Stage At Each Application

	A
<b>Crop 1 Code, BBCH Scale:</b>	GLXMA BSOY
<b>Stage Scale Used:</b>	BBCH
<b>Stage Majority, Percent:</b>	00    100

### Application Equipment

	A
<b>Appl. Equipment:</b>	BACKPACK
<b>Equipment Type:</b>	BACCAI
<b>Operation Pressure, Unit:</b>	33    PSI
<b>Nozzle Type:</b>	AIXR
<b>Nozzle Size:</b>	110025
<b>Nozzle Spacing, Unit:</b>	19    IN
<b>Nozzles/Row:</b>	2
<b>Boom Length, Unit:</b>	6.33 FT
<b>Boom Height, Unit:</b>	16    IN
<b>Ground Speed, Unit:</b>	4    MPH
<b>Carrier:</b>	WATER
<b>Spray Volume, Unit:</b>	15    GAL/AC
<b>Mix Size, Unit:</b>	0.528 gallons
<b>Propellant:</b>	COMCO2
<b>Tank Mix (Y/N):</b>	Y yes

## University of Tennessee

### SCEPTER POST-EMERGENCE TANK MIXTURES FOR RESIDUAL CONTROL OF WEEDS IN LIBERTY LINK SOYBEAN

Trial ID: JSBLLAMVAC17      Location: Jackson, TN      Trial Year: 2017  
 Protocol ID: 17C05H048XTN671 -DAT9      Investigator: Ned French, Ph.D.  
 Project ID: 17C05H048      Study Director: Larry Steckel  
 Sponsor Contact: FMC

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep				Notes
								1	2	3	4	
1	CHK UNTREATED CONTROL							101	206	305	403	
2	HERB LIBERTY FERT AMS	280 100	SL G	29 oz/a 8.5 lb/100 gal		EPOST A EPOST A		102	207	302	406	
3	HERB LIBERTY HERB SCEPTER FERT AMS	280 70 100	SL DF G	29 oz/a 1.4 oz/a 8.5 lb/100 gal		EPOST A EPOST A EPOST A		103	208	304	402	
4	HERB LIBERTY HERB CLASSIC FERT AMS	280 25 100	SL DF G	29 oz/a 0.33 oz/a 8.5 lb/100 gal		EPOST A EPOST A EPOST A		104	202	303	407	
5	HERB LIBERTY HERB DUAL MAGNUM FERT AMS	280 7.62 100	SL EC G	29 oz/a 20 oz/a 8.5 lb/100 gal		EPOST A EPOST A EPOST A		105	203	307	408	
6	HERB LIBERTY HERB DUAL MAGNUM HERB SCEPTER FERT AMS	280 7.62 70 100	SL EC DF G	29 oz/a 20 oz/a 1.4 oz/a 8.5 lb/100 gal		EPOST A EPOST A EPOST A EPOST A		106	201	308	401	
7	HERB LIBERTY HERB PREFIX FERT AMS	280 5.264 100	SL EC G	29 oz/a 2.2 pt/a 8.5 lb/100 gal		EPOST A EPOST A EPOST A		107	205	306	405	
8	HERB LIBERTY HERB PREFIX HERB SCEPTER FERT AMS	280 5.264 70 100	SL EC DF G	29 oz/a 2.2 pt/a 1.4 oz/a 8.5 lb/100 gal		EPOST A EPOST A EPOST A EPOST A		108	204	301	404	

Sort Order: Replicate 1

# University of Tennessee

## SCEPTER POST-EMERGENCE TANK MIXTURES FOR RESIDUAL CONTROL OF WEEDS IN LIBERTY LINK SOYBEAN

Trial ID: JSBLLAMVAC17  
 Protocol ID: 17C05H048XTN671 -DAT9  
 Project ID: 17C05H048

Location: Jackson, TN Trial Year: 2017  
 Investigator: Ned French, Ph.D.  
 Study Director: Larry Steckel  
 Sponsor Contact: FMC

### General Trial Information

**Study Director:** Ned French, Ph.D.  
**Investigator:** Ned French, Ph.D.

**Planned Completion Date:** 8-31-17

### Trial Location

**Country:** USA United States

**Conducted Under GLP:** No  
**Conducted Under GEP:** No

### Objectives:

DEMONSTRATE PERFORMANCE OF SCEPTER AS A POST-EMERGENCE TREATMENT FOR RESIDUAL CONTROL OF WEEDS IN LIBERTY LINK SOYBEANS.

### Contacts

**Study Director:** Ned French, Ph.D.

**Investigator:** Ned French, Ph.D.

### Crop Description

**Crop 1:** GLXMA Glycine max  
**Variety:** CZ4748LL  
**Description:** LIBERTY LINK

**BBCH Scale:** BSOY

**Planting Date:** 5-15-17  
**Planting Method:** PLANTD planted  
**Planting Equipment:** FE Field Equipment

**Planting Rate, Unit:** 8 S/FT  
**Depth, Unit:** 1 IN  
**Row Spacing, Unit:** 30 IN  
**Spacing Within Row, Unit:** 2 IN  
**Soil Moisture:** EXCELL excellent  
**Seed Bed:** MEDIUM medium

### Pest Description

**Pest 1 Type:** W **Code:** AMAPA **Amaranthus palmeri**  
**Common Name:** Palmer amaranth

**Pest 2 Type:** W **Code:** ANNGR **Annual Grasses**

### Site and Design

**Treated Plot Width:** 10 FT  
**Treated Plot Length:** 30 FT  
**Treated Plot Area:** 300 FT<sup>2</sup> **Treatments:** 8  
**Replications:** 4

**Site Type:** FIELD field  
**Experimental Unit:** 1 PLOT plot  
**Tillage Type:** NOTILL no-till  
**Study Design:** RACOB� Randomized Complete Block (RCB)

### Field Prep./Maintenance:

11/1/16 - 0-30-60  
 3/20/17 32 OZ/A ROUNDUP WEATHERMAX + 8 OZ/A CLARITY  
 5/2/17 - 48 OZ/A GRAMOXONE SL + 1% COC  
 5/15/17- 48 OZ/A GRAMOXONE SL + 0.25% NIS

# University of Tennessee

## SCEPTER POST-EMERGENCE TANK MIXTURES FOR RESIDUAL CONTROL OF WEEDS IN LIBERTY LINK SOYBEAN

Trial ID: JSBLLAMVAC17  
 Protocol ID: 17C05H048XTN671 -DAT9  
 Project ID: 17C05H048

Location: Jackson, TN Trial Year: 2017  
 Investigator: Ned French, Ph.D.  
 Study Director: Larry Steckel  
 Sponsor Contact: FMC

### Application Description

	A
Application Date:	6-1-17
Appl. Start Time:	NOON
Appl. Stop Time:	12:11 PM
Application Method:	SPRAY
Application Timing:	EPOST
Application Placement:	BROADC
Applied By:	DC
Air Temperature, Unit:	85 F
% Relative Humidity:	61
Wind Velocity, Unit:	3.5 MPH
Wind Direction:	NNW
Dew Presence (Y/N):	N no
Soil Temperature, Unit:	85 F
Soil Moisture:	EXCELL
% Cloud Cover:	95

### Crop Stage At Each Application

	A
Crop 1 Code, BBCH Scale:	GLXMA BSOY
Stage Scale Used:	BBCH
Stage Majority, Percent:	V2
Height, Unit:	5 IN
Height Minimum, Maximum:	5 6

### Pest Stage At Each Application

	A
Pest 1 Code, Type, Scale:	AMAPA W 4-6L
Height, Unit:	3 IN
Height Minimum, Maximum:	3 4
Pest 2 Code, Type, Scale:	ANNGR W 3L
Height, Unit:	2 IN
Height Minimum, Maximum:	1 3



## University of Tennessee

### SCEPTER POST-EMERGENCE TANK MIXTURES FOR RESIDUAL CONTROL OF WEEDS IN LIBERTY LINK SOYBEAN

Trial ID: JSBLLAMVAC17  
 Protocol ID: 17C05H048XTN671 -DAT9  
 Project ID: 17C05H048

Location: Jackson, TN Trial Year: 2017  
 Investigator: Ned French, Ph.D.  
 Study Director: Larry Steckel  
 Sponsor Contact: FMC

#### Application Equipment

	A
<b>Appl. Equipment:</b>	BACKPACK
<b>Equipment Type:</b>	BACCAI
<b>Operation Pressure, Unit:</b>	33 PSI
<b>Nozzle Type:</b>	AIXR
<b>Nozzle Size:</b>	110025
<b>Nozzle Spacing, Unit:</b>	19 IN
<b>Nozzles/Row:</b>	2
<b>Boom Length, Unit:</b>	6.33 FT
<b>Boom Height, Unit:</b>	16 IN
<b>Ground Speed, Unit:</b>	4 MPH
<b>Carrier:</b>	WATER
<b>Spray Volume, Unit:</b>	15 GAL/AC
<b>Mix Size, Unit:</b>	0.528 gallons
<b>Propellant:</b>	COMCO2
<b>Tank Mix (Y/N):</b>	Y yes

# University of Tennessee

## EVALUATE WEED CONTROL PROGRAMS IN LIBERTY LINK SOYBEANIUSSG0H3542017

Trial ID: JSBSYNLL17      Location: JACKSON TN      Trial Year: 2017  
 Protocol ID: HJCH0064-2017US      Investigator: James Holloway  
 Project ID:      Study Director: LARRY STECKEL  
                                  Sponsor Contact: James Holloway

Trt No.	Treatment Type	Form Name	Form Conc	Form Type	Rate	Unit	Growth Stage	Appl Code	Rep				Notes
									1	2	3	4	
1	CHK	NONTREATED							101	203	301	403	
2	ADJ	NIS	0	SL	0.25	% v/v	PRE	A	102	202	304	402	
		HERB GRAMOXONE	2	SL	48	oz/a	PRE	A					
		HERB BOUNDARY	6.5	EC	24	oz/a	PRE	A					
		HERB PREFIX	5.264	EC	32	oz/a	POST	B					
		HERB LIBERTY	2.34	SL	29	oz/a	POST	B					
3	ADJ	NIS	0	SL	0.25	% v/v	PRE	A	103	204	303	401	
		HERB GRAMOXONE	2	SL	48	oz/a	PRE	A					
		HERB BROADAXE	7	SC	20	oz/a	PRE	A					
		HERB PREFIX	5.264	EC	32	oz/a	POST	B					
		HERB LIBERTY	2.34	SL	29	oz/a	POST	B					
4	ADJ	NIS	0	SL	0.25	% v/v	PRE	A	104	201	302	404	
		HERB GRAMOXONE	2	SL	48	oz/a	PRE	A					
		HERB VERDICT	5.57	EC	5	oz/a	PRE	A					
		HERB ZIDUA	85	WG	2	oz/a	POST	B					
		HERB LIBERTY	2.34	SL	29	oz/a	POST	B					

Sort Order: Replicate 1

# University of Tennessee

## EVALUATE WEED CONTROL PROGRAMS IN LIBERTY LINK SOYBEANIUSSG0H3542017

Trial ID: JSBSYNLL17      Location: JACKSON TN      Trial Year: 2017  
 Protocol ID: HJCH0064-2017US      Investigator: James Holloway  
 Project ID:      Study Director: LARRY STECKEL  
                                  Sponsor Contact: James Holloway

### General Trial Information

**Study Director:** LARRY STECKEL  
**Investigator:** James Holloway

**Initiation Date:** 3-16-17

### Trial Location

**Country:** USA United States

USA 49.376656    - 24.53833  
 -124.715843    -66.968887

**Conducted Under GLP:** No  
**Conducted Under GEP:** No

### Contacts

**Study Director:** LARRY STECKEL

**Investigator:** James Holloway

### Crop Description

**Crop 1:** GLXMA Glycine max      Soybean  
**Variety:** CZ4748LL      **BBCH Scale:** BSOY  
**Description:** LIBERTY LINK  
**Planting Rate, Unit:** 8      S/FT      **Planting Date:** 5-15-17  
**Depth, Unit:** 1      IN      **Planting Method:** PLANTD planted  
**Row Spacing, Unit:** 30      IN      **Planting Equipment:** FE      Field Equipment  
**Soil Moisture:** EXCELL excellent  
**Seed Bed:** MEDIUM medium

### Pest Description

**Pest 1 Type:** W      **Code:** AMAPA

**Pest 2 Type:** W      **Code:** IPOLA Ipomoea lacunosa  
**Common Name:** Pitted morningglory

**Pest 3 Type:** W      **Code:** ANNGR Annual Grasses

### Site and Design

**Treated Plot Width:** 10 FT      **Site Type:** FIELD field  
**Treated Plot Length:** 30 FT      **Experimental Unit:** 0  
**Treated Plot Area:** 300 FT<sup>2</sup>      **Treatments:** 4      **Tillage Type:** NOTILL no-till  
**Replications:** 4      **Study Design:** RACOB� Randomized Complete Block (RCB)

### Field Prep./Maintenance:

11/1/16 - 0-30-60  
 3/20/17 32 OZ/A ROUNDUP WEATHERMAX + 8 OZ/A CLARITY  
 5/2/17 - 48 OZ/A GRAMOXONE SL + 1% COC  
 5/15/17- 48 OZ/A GRAMOXONE SL + 0.25% NIS

# University of Tennessee

## EVALUATE WEED CONTROL PROGRAMS IN LIBERTY LINK SOYBEANUSSG0H3542017

Trial ID: JSBSYNLL17      Location: JACKSON TN      Trial Year: 2017  
 Protocol ID: HJCH0064-2017US      Investigator: James Holloway  
 Project ID:      Study Director: LARRY STECKEL  
                                  Sponsor Contact: James Holloway

### Application Description

	A	B
<b>Application Date:</b>	5-16-17	6-6-17
<b>Appl. Start Time:</b>	8:26 AM	8:00 AM
<b>Appl. Stop Time:</b>	8:31 AM	8:05 AM
<b>Application Method:</b>	SPRAY	SPRAY
<b>Application Timing:</b>	PRE	POST
<b>Application Placement:</b>	BROS0I	BROFOL
<b>Applied By:</b>	JB	JB
<b>Air Temperature, Unit:</b>	73 F	75 F
<b>% Relative Humidity:</b>	65	76
<b>Wind Velocity, Unit:</b>	3 MPH	2 MPH
<b>Wind Direction:</b>	S	E
<b>Dew Presence (Y/N):</b>	Y yes	Y yes
<b>Soil Temperature, Unit:</b>	70 F	73 F
<b>Soil Moisture:</b>	NORMAL	NORMAL
<b>% Cloud Cover:</b>	10	95

### Crop Stage At Each Application

	A	B
<b>Crop 1 Code, BBCH Scale:</b>	GLXMA BSOY	GLXMA BSOY
<b>Stage Scale Used:</b>		V3
<b>Height, Unit:</b>		7 IN
<b>Height Minimum, Maximum:</b>		6 8

### Pest Stage At Each Application

	A	B
<b>Pest 1 Code, Type, Scale:</b>	AMAPA W --	AMAPA W 2-4L
<b>Height, Unit:</b>		3 IN
<b>Height Minimum, Maximum:</b>		1 4
<b>Pest 2 Code, Type, Scale:</b>	IPOLA W --	IPOLA W 2L
<b>Height, Unit:</b>		2 IN
<b>Height Minimum, Maximum:</b>		1 3
<b>Pest 3 Code, Type, Scale:</b>	ANNGR W --	ANNGR W 2L
<b>Height, Unit:</b>		2 IN
<b>Height Minimum, Maximum:</b>		1 2

# University of Tennessee

## EVALUATE WEED CONTROL PROGRAMS IN LIBERTY LINK SOYBEANUSSG0H3542017

Trial ID: JSBSYNLL17      Location: JACKSON TN      Trial Year: 2017  
 Protocol ID: HJCH0064-2017US      Investigator: James Holloway  
 Project ID:      Study Director: LARRY STECKEL  
                                  Sponsor Contact: James Holloway

### Application Equipment

	A	B
<b>Appl. Equipment:</b>	BACKPACK	BACKPACK
<b>Equipment Type:</b>	BACCAI	BACCAI
<b>Operation Pressure, Unit:</b>	33    PSI	33    PSI
<b>Nozzle Type:</b>	AIXR	AIXR
<b>Nozzle Size:</b>	110025	110025
<b>Nozzle Spacing, Unit:</b>	19    IN	19    IN
<b>Nozzles/Row:</b>	2	2
<b>Boom Length, Unit:</b>	6.33 FT	6.33 FT
<b>Boom Height, Unit:</b>	16    IN	16    IN
<b>Ground Speed, Unit:</b>	4    MPH	4    MPH
<b>Carrier:</b>	WATER	WATER
<b>Spray Volume, Unit:</b>	15    GAL/AC	15    GAL/AC
<b>Mix Size, Unit:</b>	0.528 gallons	0.528 gallons
<b>Propellant:</b>	COMCO2	COMCO2
<b>Tank Mix (Y/N):</b>	Y yes	Y yes

## University of Tennessee

### AUTHORITY MAXXX / AUTHORITY MTZ -NO-TILL BURNDOWN PROGRAMS FOR ROUNDUP READY 2 XTEND SOYBEAN

Trial ID: JSBBDPMC17      Location: Jackson, TN      Trial Year: 2017  
 Protocol ID: FMC\_notill burndown      Investigator: Dr. Larry Steckel  
 Project ID:      Study Director: Larry Steckel  
 Sponsor Contact: FMC

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
1	CHK UNTREATED							101	204	305	402	
2	HERB 2,4-D AMINE	4	SC	16 oz/a		30 DBP	A	102	206	303	412	
	HERB ROUNDUP POWERMAX	4.5	SL	22 oz/a		30 DBP	A					
	ADJ MSO	100	L	1 % v/v		30 DBP	A					
	HERB ANTHEM MAXX	4.3	SC	3.3 oz/a		PREPOS	B					
	HERB XTENDIMAX	2.9	SL	22 oz/a		PREPOS	B					
	HERB ROUNDUP POWERMAX	4.5	SL	22 oz/a		PREPOS	B					
3	HERB AUTHORITY MAXX	66	WG	4.56 oz/a		30 DBP	A	103	208	301	403	
	HERB 2,4-D AMINE	4	SC	16 oz/a		30 DBP	A					
	HERB ROUNDUP POWERMAX	4.5	SL	22 oz/a		30 DBP	A					
	ADJ MSO	100	L	1 % v/v		30 DBP	A					
	HERB ANTHEM MAXX	4.3	SC	3.3 oz/a		PREPOS	B					
	HERB XTENDIMAX	2.9	SL	22 oz/a		PREPOS	B					
	HERB ROUNDUP POWERMAX	4.5	SL	22 oz/a		PREPOS	B					
4	HERB AUTHORITY MTZ	45	WG	10 oz/a		30 DBP	A	104	211	312	406	
	HERB 2,4-D AMINE	4	SC	16 oz/a		30 DBP	A					
	HERB ROUNDUP POWERMAX	4.5	SL	22 oz/a		30 DBP	A					
	ADJ MSO	100	L	1 % v/v		30 DBP	A					
	HERB ANTHEM MAXX	4.3	SC	3.3 oz/a		PREPOS	B					
	HERB XTENDIMAX	2.9	SL	22 oz/a		PREPOS	B					
	HERB ROUNDUP POWERMAX	4.5	SL	22 oz/a		PREPOS	B					
5	HERB CRUSHER	50	WG	1 oz/a		30 DBP	A	105	210	306	409	
	HERB 2,4-D AMINE	4	SC	16 oz/a		30 DBP	A					
	HERB ROUNDUP POWERMAX	4.5	SL	22 oz/a		30 DBP	A					
	ADJ MSO	100	L	1 % v/v		30 DBP	A					
	HERB ANTHEM MAXX	4.3	SC	3.3 oz/a		PREPOS	B					
	HERB XTENDIMAX	2.9	SL	22 oz/a		PREPOS	B					
	HERB ROUNDUP POWERMAX	4.5	SL	22 oz/a		PREPOS	B					
6	HERB 2,4-D AMINE	4	SC	16 oz/a		30 DBP	A	106	209	310	411	
	HERB ROUNDUP POWERMAX	4.5	SL	22 oz/a		30 DBP	A					
	ADJ MSO	100	L	1 % v/v		30 DBP	A					
	HERB AUTHORITY MTZ	45	WG	14 oz/a		PRE	B					
	HERB ROUNDUP POWERMAX	4.5	SL	22 oz/a		PRE	B					
	HERB ANTHEM MAXX	4.3	SC	3.3 oz/a		EPOST	C					
	HERB XTENDIMAX	2.9	SL	22 oz/a		EPOST	C					
	HERB ROUNDUP POWERMAX	4.5	SL	22 oz/a		EPOST	C					
7	HERB XTENDIMAX	2.9	SL	22 oz/a		PREPOS	B	107	202	307	408	
	HERB ROUNDUP POWERMAX	4.5	SL	22 oz/a		PREPOS	B					
	HERB ANTHEM MAXX	4.3	SC	3.3 oz/a		30 DAP	D					
	HERB XTENDIMAX	2.9	SL	22 oz/a		30 DAP	D					
	HERB ROUNDUP POWERMAX	4.5	SL	22 oz/a		30 DAP	D					
8	HERB VALOR SX	51	WG	2 oz/a		PREPOS	B	108	203	311	401	
	HERB XTENDIMAX	2.9	SL	22 oz/a		PREPOS	B					
	HERB ROUNDUP POWERMAX	4.5	SL	22 oz/a		PREPOS	B					
	ADJ MSO	100	L	1 % v/v		PREPOS	B					
	HERB ANTHEM MAXX	4.3	SC	3.3 oz/a		30 DAP	D					
	HERB XTENDIMAX	2.9	SL	22 oz/a		30 DAP	D					
	HERB ROUNDUP POWERMAX	4.5	SL	22 oz/a		30 DAP	D					
9	HERB VERDICT	5.57	EC	5 oz/a		PREPOS	B	109	212	309	410	
	HERB XTENDIMAX	2.9	SL	22 oz/a		PREPOS	B					
	HERB ROUNDUP POWERMAX	4.5	SL	22 oz/a		PREPOS	B					
	ADJ MSO	100	L	1 % v/v		PREPOS	B					
	HERB ANTHEM MAXX	4.3	SC	3.3 oz/a		30 DAP	D					
	HERB XTENDIMAX	2.9	SL	22 oz/a		30 DAP	D					
	HERB ROUNDUP POWERMAX	4.5	SL	22 oz/a		30 DAP	D					
10	HERB SHARPEN	2.85	SC	1 oz/a		PREPOS	B	110	201	302	404	
	HERB XTENDIMAX	2.9	SL	22 oz/a		PREPOS	B					
	HERB ROUNDUP POWERMAX	4.5	SL	22 oz/a		PREPOS	B					
	ADJ MSO	100	L	1 % v/v		PREPOS	B					
	HERB ANTHEM MAXX	4.3	SC	3.3 oz/a		30 DAP	D					
	HERB XTENDIMAX	2.9	SL	22 oz/a		30 DAP	D					
	HERB ROUNDUP POWERMAX	4.5	SL	22 oz/a		30 DAP	D					

## University of Tennessee

### AUTHORITY MAXXX / AUTHORITY MTZ -NO-TILL BURNDOWN PROGRAMS FOR ROUNDUP READY 2 XTEND SOYBEAN

Trial ID: JSBDFMC17      Location: Jackson, TN      Trial Year: 2017  
 Protocol ID: FMC\_notill burndown      Investigator: Dr. Larry Steckel  
 Project ID:      Study Director: Larry Steckel  
    Sponsor Contact: FMC

Trt No.	Treatment Type Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
11	HERB AUTHORITY MTZ	45	WG	14	oz/a	PREPOS	B	111	205	304	405	
	HERB XTENDIMAX	2.9	SL	22	oz/a	PREPOS	B					
	HERB ROUNDUP POWERMAX	4.5	SL	22	oz/a	PREPOS	B					
	ADJ MSO	100	L	1	% v/v	PREPOS	B					
	HERB ANTHEM MAXX	4.3	SC	3.3	oz/a	30 DAP	D					
	HERB XTENDIMAX	2.9	SL	22	oz/a	30 DAP	D					
	HERB ROUNDUP POWERMAX	4.5	SL	22	oz/a	30 DAP	D					
12	HERB AUTHORITY ELITE	7	EC	25	oz/a	PREPOS	B	112	207	308	407	
	HERB XTENDIMAX	2.9	SL	22	oz/a	PREPOS	B					
	HERB ROUNDUP POWERMAX	4.5	SL	22	oz/a	PREPOS	B					
	ADJ MSO	100	L	1	% v/v	PREPOS	B					
	HERB ANTHEM MAXX	4.3	SC	3.3	oz/a	30 DAP	D					
	HERB XTENDIMAX	2.9	SL	22	oz/a	30 DAP	D					
	HERB ROUNDUP POWERMAX	4.5	SL	22	oz/a	30 DAP	D					

Sort Order: Replicate 1

# University of Tennessee

## AUTHORITY MAXXX / AUTHORITY MTZ -NO-TILL BURNDOWN PROGRAMS FOR ROUNDUP READY 2 XTEND SOYBEAN

Trial ID: JSBBDFMC17      Location: Jackson, TN      Trial Year: 2017  
 Protocol ID: FMC\_notill burndown      Investigator: Dr. Larry Steckel  
 Project ID:      Study Director: Larry Steckel  
                                  Sponsor Contact: FMC

### General Trial Information

**Study Director:** Larry Steckel  
**Investigator:** Dr. Larry Steckel

**Conducted Under GLP:** No  
**Conducted Under GEP:** No

### Contacts

**Study Director:** Larry Steckel

**Investigator:** Dr. Larry Steckel

### Crop Description

<p><b>Crop 1:</b> GLXMA      Glycine max  <b>Variety:</b> ASGROW 42X6  <b>Description:</b> DICAMBA TOLERANT</p> <p><b>Planting Rate, Unit:</b> 8      S/FT  <b>Depth, Unit:</b> 1      IN  <b>Row Spacing, Unit:</b> 30      IN  <b>Soil Temperature, Unit:</b> 59      F  <b>Soil Moisture:</b> ABONOR above normal, excessive</p>	<p><b>Soybean</b>  <b>BBCH Scale:</b> BSOY</p> <p><b>Planting Date:</b> 5-1-17  <b>Planting Method:</b> PLANTD planted  <b>Planting Equipment:</b> FE      Field Equipment</p>
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### Pest Description

**Pest 1 Type:** W      **Code:** ERICA      Conyza canadensis  
**Common Name:** Horseweed

**Pest 2 Type:** W      **Code:** POAAN      Poa annua  
**Common Name:** Annual bluegrass

**Pest 3 Type:** W      **Code:** AMAPA      Amaranthus palmeri  
**Common Name:** Palmer amaranth

### Site and Design

**Treated Plot Width:** 7.5 FT      **Site Type:** FIELD      field  
**Treated Plot Length:** 30 FT  
**Treated Plot Area:** 225 FT<sup>2</sup>      **Treatments:** 12      **Tillage Type:** NOTILL      no-till  
**Replications:** 4      **Study Design:** RACOB      Randomized Complete Block (RCB)

**Comment:** Where there were dicamba products applied then TT1 tips were used. Treatments without dicamba products were applied using AIXR tips.

**Field Prep./Maintenance:**

Nov. 1, 2016 - 0-30-60



# University of Tennessee

## AUTHORITY MAXXX / AUTHORITY MTZ -NO-TILL BURNDOWN PROGRAMS FOR ROUNDUP READY 2 XTEND SOYBEAN

Trial ID: JSBBDFMC17      Location: Jackson, TN      Trial Year: 2017  
 Protocol ID: FMC\_notill burndown      Investigator: Dr. Larry Steckel  
 Project ID:      Study Director: Larry Steckel  
 Sponsor Contact: FMC

### Application Description

	A	B	C	D
<b>Application Date:</b>	4-4-17	5-2-17	5-22-17	5-30-17
<b>Appl. Start Time:</b>	8:20 AM	10:49 AM	7:23 AM	9:50 AM
<b>Appl. Stop Time:</b>	8:25 AM	11:08 AM	7:24 AM	10:02 AM
<b>Application Method:</b>	SPRAY	SPRAY	SPRAY	SPRAY
<b>Application Timing:</b>	30 DBP	PRE	EPOST	30 DAP
<b>Application Placement:</b>	BROFOL	BROFOL	BROFOL	BROFOL
<b>Applied By:</b>	GM	DC	DC	DC
<b>Air Temperature, Unit:</b>	64 F	78 F	64 F	81 F
<b>% Relative Humidity:</b>	83	36	65	65
<b>Wind Velocity, Unit:</b>	0 MPH	7 MPH	1.5 MPH	3 MPH
<b>Wind Direction:</b>		SW	SE	N
<b>Dew Presence (Y/N):</b>	Y yes	N no	Y yes	N no
<b>Soil Temperature, Unit:</b>	57 F	67 F	65 F	78 F
<b>Soil Moisture:</b>	EXCELL	OPT	NORMAL	EXCELL
<b>% Cloud Cover:</b>	40	0	90	10

### Crop Stage At Each Application

	A	B	C	D
<b>Crop 1 Code, BBCH Scale:</b>	GLXMA BSOY	GLXMA BSOY	GLXMA BSOY	GLXMA BSOY
<b>Stage Scale Used:</b>		BBCH	V1	V2-V3
<b>Stage Majority, Percent:</b>		00 100		
<b>Height, Unit:</b>			4 IN	6 IN
<b>Height Minimum, Maximum:</b>			3 4	6 7

### Pest Stage At Each Application

	A	B	C	D
<b>Pest 1 Code, Type, Scale:</b>	ERICA W 10+L	ERICA W 10+L	ERICA W --	ERICA W --
<b>Diameter, Unit:</b>	3 IN	4 IN		
<b>Height, Unit:</b>	4 IN	5 IN		
<b>Height Minimum, Maximum:</b>	4 5	4 6		
<b>Pest 2 Code, Type, Scale:</b>	POAAN W SEED	POAAN W --	POAAN W --	POAAN W --
<b>Diameter, Unit:</b>	6 IN			
<b>Height, Unit:</b>	6 IN			
<b>Height Minimum, Maximum:</b>	5 6			
<b>Pest 3 Code, Type, Scale:</b>	AMAPA W --	AMAPA W 1-2L	AMAPA W 1-2L	AMAPA W 2-4L
<b>Height, Unit:</b>		0.5 IN	2 IN	2 IN
<b>Height Minimum, Maximum:</b>		0.5 1.5	1 2	2 3

# University of Tennessee

## AUTHORITY MAXXX / AUTHORITY MTZ -NO-TILL BURNDOWN PROGRAMS FOR ROUNDUP READY 2 XTEND SOYBEAN

Trial ID: JSBBDFMC17      Location: Jackson, TN      Trial Year: 2017  
 Protocol ID: FMC\_notill burndown      Investigator: Dr. Larry Steckel  
 Project ID:      Study Director: Larry Steckel  
                                  Sponsor Contact: FMC

Application Equipment				
	A	B	C	D
<b>Appl. Equipment:</b>	BACKPACK	BACKPACK	BACKPACK	BACKPACK
<b>Equipment Type:</b>	BACCAI	BACCAI	BACCAI	BACCAI
<b>Operation Pressure, Unit:</b>	28 PSI	32 PSI	32 PSI	32 PSI
<b>Nozzle Type:</b>	AIXR	TTI	TTI	TTI
<b>Nozzle Size:</b>	11003	025	025	025
<b>Nozzle Spacing, Unit:</b>	20 IN	20 IN	20 IN	20 IN
<b>Boom ID:</b>	5 FT @ 15GPA			
<b>Boom Length, Unit:</b>	5 FT	5 FT	5 FT	5 FT
<b>Boom Height, Unit:</b>	16 IN	16 IN	16 IN	16 IN
<b>Ground Speed, Unit:</b>	4 MPH	4 MPH	4 MPH	4 MPH
<b>Carrier:</b>		WATER	WATER	WATER
<b>Spray Volume, Unit:</b>	15 GAL/AC	15 gal/ac	15 gal/ac	15 gal/ac
<b>Mix Size, Unit:</b>	0.528 gallons	0.528 gallons	0.528 gallons	0.528 gallons
<b>Spray pH:</b>	0.528			
<b>Propellant:</b>	COMCO2	COMCO2	COMCO2	COMCO2
<b>Tank Mix (Y/N):</b>	Y yes	Y yes	Y yes	Y yes

# University of Tennessee

## S-Metolachlor Premixes A22102C (+ paraquat) and A21472C (+ dicamba): University Testing Program - Soybean--USSG0H3522017

Trial ID: JSBXSYN5117      Location: Jackson, TN      Trial Year: 2017  
 Protocol ID: HPQ051A4-2017US      Investigator: James Holloway  
 Project ID:      Study Director:  
    Sponsor Contact: James Holloway

Trt No. Type	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
1	CHK NONTREATED						101	206	309	402	
2	ADJ NIS		0 SL	0.25 % v/v	PREPLA A		102	202	302	405	
	HERB GRAMOXONE		2 SL	3 pt/a	PREPLA A						
	ADJ AG 13063		0 SL	1 % v/v	POSPOS D						
	HERB ROUNDUP POWERMAX		4.5 SL	32 oz/a	POSPOS D						
3	ADJ NIS		0 SL	0.25 % v/v	PREPLA A		103	204	305	401	
	HERB A22102	3.33333325386	EW	4.5 pt/a	PREPLA A						
	ADJ AG 13063		0 SL	1 % v/v	POSPOS D						
	HERB TAVIUM plus VAPORGRIP	3.38999986649	CS	56.5 oz/a	POSPOS D						
	HERB ROUNDUP POWERMAX		4.5 SL	32 oz/a	POSPOS D						
4	ADJ NIS		0 SL	0.25 % v/v	PREPLA A		104	205	301	403	
	HERB TRICOR		75 WG	5.3 oz wt/a	PREPLA A						
	HERB A22102	3.33333325386	EW	72 oz/a	PREPLA A						
	ADJ AG 13063		0 SL	1 % v/v	POSPOS D						
	HERB TAVIUM plus VAPORGRIP	3.38999986649	CS	56.5 oz/a	POSPOS D						
	HERB ROUNDUP POWERMAX		4.5 SL	32 oz/a	POSPOS D						
5	ADJ NIS		0 SL	0.25 % v/v	PREPLA A		105	207	303	408	
	HERB SPARTAN		4 SC	5 oz/a	PREPLA A						
	HERB A22102	3.33333325386	EW	4.5 pt/a	PREPLA A						
	ADJ AG 13063		0 SL	1 % v/v	POSPOS D						
	HERB TAVIUM plus VAPORGRIP	3.38999986649	CS	56.5 oz/a	POSPOS D						
	HERB ROUNDUP POWERMAX		4.5 SL	32 oz/a	POSPOS D						
6	ADJ NIS		0 SL	0.25 % v/v	PREPLA A		106	201	306	404	
	HERB SONIC		70 DF	4 oz wt/a	PREPLA A						
	HERB A22102	3.33333325386	EW	4.5 pt/a	PREPLA A						
	ADJ AG 13063		0 SL	1 % v/v	POSPOS D						
	HERB TAVIUM plus VAPORGRIP	3.38999986649	CS	56.5 oz/a	POSPOS D						
	HERB ROUNDUP POWERMAX		4.5 SL	32 oz/a	POSPOS D						
7	ADJ NIS		0 SL	0.25 % v/v	PREPLA A		107	208	307	409	
	HERB TRICOR		75 WG	5.3 oz wt/a	PREPLA A						
	HERB A22102	3.33333325386	EW	4.5 pt/a	PREPLA A						
	ADJ AG 13063		0 SL	1 % v/v	POSPOS C						
	HERB PREFIX	5.26399993896	EC	2 pt/a	POSPOS C						
	HERB ROUNDUP POWERMAX		4.5 SL	32 oz/a	POSPOS C						
8	ADJ NIS		0 SL	0.25 % v/v	PREPLA B		108	203	308	406	
	HERB XTENDIMAX	2.91833353043	SL	22 oz/a	PREPLA B						
	HERB A22102	3.33333325386	EW	4.5 pt/a	PREPLA B						
	ADJ AG 13063		0 SL	1 % v/v	POSPOS D						
	HERB TAVIUM plus VAPORGRIP	3.38999986649	CS	56.5 oz/a	POSPOS D						
	HERB ROUNDUP POWERMAX		4.5 SL	32 oz/a	POSPOS D						
9	ADJ NIS		0 SL	0.25 % v/v	PREPLA A		109	209	304	407	
	HERB BOUNDARY	6.47916650772	EC	1.8 pt/a	PREPLA A						
	HERB GRAMOXONE		2 SL	3 pt/a	PREPLA A						
	ADJ AG 13063		0 SL	1 % v/v	POSPOS C						
	HERB FLEXSTAR GT 3.5	2.81666660309	SL	4.5 pt/a	POSPOS C						
	ADJ MSO		0 SL	1 % v/v	POSPOS C						

Sort Order: Replicate 1

# University of Tennessee

## S-Metolachlor Premixes A22102C (+ paraquat) and A21472C (+ dicamba): University Testing Program - Soybean--USSG0H3522017

Trial ID: JSBXSYN5117      Location: Jackson, TN      Trial Year: 2017  
 Protocol ID: HPQ051A4-2017US      Investigator: James Holloway  
 Project ID:      Study Director:  
    Sponsor Contact: James Holloway

### General Trial Information

**Study Director:** Dane Bowers      **Title:** OVPROW  
**Investigator:** Adrian Moses      **Title:** FLDBLG

**Initiation Date:** 3-13-17

@VAR1 49.376656      -24.53833  
    -124.715843      -66.968887

**Conducted Under GLP:** No  
**Conducted Under GEP:** No

### Objectives:

Do weed control programs incorporating A22102C (paraquat + S-metolachlor premix) applied preplant burndown and A21472C (dicamba + S-metolachlor premix) applied postemergence deliver effective weed control in RR2 Xtend soybeans?

### Contacts

**Study Director:** Dane Bowers      **Title:** OVPROW  
**Organization:** Syngenta  
**Address:** 410 Swing Rd.  
**City+State/Prov:** Greensboro, NC  
**Postal Code:** 27409

**Investigator:** Adrian Moses      **Title:** FLDBLG  
**Organization:** Syngenta  
**Address:** 872 Harts Bridge Rd.      **Phone No.:** 731-423-0804  
**City+State/Prov:** Jackson, TN      **Mobile No.:** 731-803-1730  
**Postal Code:** 38301      **E-mail:** james.holloway@syngenta.com  
**Cooperator/Landowner**

**Cooperator:** Larry Steckel      **Role:** UNVCOP  
**Organization:** UT      **Org. Type:** COI  
**Address 1:** 605 Airways Blvd  
**City:** Jackson  
**State/Prov:** TN  
**Postal Code:** 38301      **Mobile No.:** 731.499.0120  
**Country:** US      **E-mail:** lsteckel@utk.edu

### Crop Description

**Crop 1:** GLXMA      Glycine max  
**Variety:** ASGROW 42X6  
**Description:** XTEND

**BBCH Scale:** BSOY

**Planting Rate, Unit:** 8      S/FT  
**Depth, Unit:** 1      IN  
**Row Spacing, Unit:** 30      IN  
**Soil Temperature, Unit:** 59      F  
**Soil Moisture:** ABONOR above normal, excessive

**Planting Date:** 5-1-17  
**Planting Method:** PLANTD planted  
**Planting Equipment:** FE      Field Equipment

### Pest Description

**Pest 1 Type:** W      **Code:** ERICA      Conyza canadensis  
**Common Name:** Horseweed

**Pest 2 Type:** W      **Code:** POAAN      Poa annua  
**Common Name:** Annual bluegrass

**Pest 3 Type:** W      **Code:** AMAPA      Amaranthus palmeri  
**Common Name:** Palmer amaranth

**Pest 4 Type:** W      **Code:** IPOLA      Ipomoea lacunosa  
**Common Name:** Pitted morningglory

# University of Tennessee

## S-Metolachlor Premixes A22102C (+ paraquat) and A21472C (+ dicamba): University Testing Program - Soybean--USSG0H3522017

Trial ID: JSBXSYN5117      Location: Jackson, TN      Trial Year: 2017  
 Protocol ID: HPQ051A4-2017US      Investigator: James Holloway  
 Project ID:      Study Director:  
    Sponsor Contact: James Holloway

<b>Treated Plot Width:</b> 10 FT <b>Treated Plot Length:</b> 30 FT <b>Treated Plot Area:</b> 300 FT <sup>2</sup> <b>Treatments:</b> 9 <b>Replications:</b> 4	<b>Site and Design</b> <b>Site Type:</b> FIELD field <b>Experimental Unit:</b> 0 PLOT plot <b>Tillage Type:</b> NOTILL no-till <b>Study Design:</b> RACOB L Randomized Complete Block (RCB)
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**Comment:** May 22 - plots 107, 205, 302 and 401 missprayed.

**Field Prep./Maintenance:**

Nov 1, 2016 0-30-60 was applied to entire test area

### Application Description

	A	B	C	D
<b>Application Date:</b>	4-24-17	4-24-17	5-22-17	5-22-17
<b>Appl. Start Time:</b>	1:10 PM	1:10 PM	8:09 AM	8:09 AM
<b>Appl. Stop Time:</b>	1:20 PM	1:20 PM	8:27 AM	8:27 AM
<b>Application Method:</b>	SPRAY	SPRAY	SPRAY	SPRAY
<b>Application Timing:</b>	PREPLA	PREPLA	POSPOS	POSPOS
<b>Application Placement:</b>	BROFOL	BROFOL	BROFOL	BROFOL
<b>Applied By:</b>	DC	DC	DC	DC
<b>Air Temperature, Unit:</b>	70 F	70 F	66 F	66 F
<b>% Relative Humidity:</b>	66	66	68	68
<b>Wind Velocity, Unit:</b>	3 MPH	3 MPH	4 MPH	4 MPH
<b>Wind Direction:</b>	N	N	SE	SE
<b>Dew Presence (Y/N):</b>	N no	N no	N no	N no
<b>Soil Temperature, Unit:</b>	65 F	65 F	65 F	65
<b>Soil Moisture:</b>	WET	WET	NORMAL	NORMA;
<b>% Cloud Cover:</b>	80	90	90	90

### Crop Stage At Each Application

	A	B	C	D
<b>Crop 1 Code, BBCH Scale:</b>	GLXMA BSOY	GLXMA BSOY	GLXMA BSOY	GLXMA BSOY
<b>Stage Scale Used:</b>	BBCH	--	V2	V2
<b>Stage Majority, Percent:</b>	--			
<b>Height, Unit:</b>			4 IN	4 IN
<b>Height Minimum, Maximum:</b>			4 6	4 6

### Pest Stage At Each Application

	A	B	C	D
<b>Pest 1 Code, Type, Scale:</b>	ERICA W 20+L	ERICA W 20+L	ERICA W --	ERICA W --
<b>Height, Unit:</b>	8 IN	8 IN		
<b>Height Minimum, Maximum:</b>	6 10	6 10		
<b>Pest 2 Code, Type, Scale:</b>	POAAN W SEED	POAAN W SEED	POAAN W --	POAAN W --
<b>Diameter, Unit:</b>	4 IN	4 IN		
<b>Height, Unit:</b>	3 IN	3 IN		
<b>Height Minimum, Maximum:</b>	3 4	3 4		
<b>Pest 3 Code, Type, Scale:</b>	AMAPA W --	AMAPA W --	AMAPA W 2-4L	AMAPA W 2-4L
<b>Height, Unit:</b>			3 IN	3 IN
<b>Height Minimum, Maximum:</b>			2 4	2 4
<b>Pest 4 Code, Type, Scale:</b>	IPOLA W --	IPOLA W --	IPOLA W 2-3L	IPOLA W 2-3L
<b>Height, Unit:</b>			2 IN	2 IN
<b>Height Minimum, Maximum:</b>			1 3	1 3

# University of Tennessee

## S-Metolachlor Premixes A22102C (+ paraquat) and A21472C (+ dicamba): University Testing Program - Soybean--USSG0H3522017

Trial ID: JSBXSYN5117      Location: Jackson, TN      Trial Year: 2017  
 Protocol ID: HPQ051A4-2017US      Investigator: James Holloway  
 Project ID:      Study Director:  
                                  Sponsor Contact: James Holloway

	Application Equipment			
	A	B	C	D
<b>Appl. Equipment:</b>	BACKPACK	BACKPACK	BACKPACK	BACKPACK
<b>Equipment Type:</b>	BACCAI	BACCAI	BACCAI	BACCAI
<b>Operation Pressure, Unit:</b>	33 PSI	28 PSI	33 PSI	28 PSI
<b>Nozzle Type:</b>	AIXR	TTI	AIXR	TTI
<b>Nozzle Size:</b>	110025	003	110025	003
<b>Nozzle Spacing, Unit:</b>	19 IN	19 IN	19 IN	19 IN
<b>Nozzles/Row:</b>	2	2	2	2
<b>Boom Length, Unit:</b>	6.33 FT	6.33 FT	6.33 FT	6.33 FT
<b>Boom Height, Unit:</b>	16 IN	16 IN	16 IN	16 IN
<b>Ground Speed, Unit:</b>	4 MPH	4 MPH	4 MPH	4 MPH
<b>Incorporation Equip.:</b>		4		4
<b>Hours to Incorp.:</b>		0		0
<b>Carrier:</b>	WATER	WATER	WATER	WATER
<b>Spray Volume, Unit:</b>	15 GAL/AC	15 gal/ac	15 GAL/AC	15 gal/ac
<b>Mix Size, Unit:</b>	0.528 gallons	0.528 gallons	0.528 gallons	0.528 gallons
<b>Propellant:</b>	COMCO2	COMCO2	COMCO2	COMCO2
<b>Tank Mix (Y/N):</b>	Y yes	Y yes	Y yes	Y yes

## University of Tennessee

### FMC PROGRAMS FOR HERBICIDE-RESISTANT PALMER AMARANTH

Trial ID: JSBXFMC17      Location: Jackson, TN      Trial Year: 2017  
 Protocol ID: Authority \_ Anthem Xtend      Investigator: Dr. Larry Steckel  
 Project ID:      Study Director: Larry Steckel  
    Sponsor Contact: FMC

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Growth Unit	Stage	Appl Code	Rep 1	2	3	4	Notes
1	CHK							101	204	306	409	
2	HERB AUTHORITY MAXX	66	WG	5	oz/a	PREPRE	A	102	210	308	402	
	HERB ROUNDUP POWERMAX	4.5	SL	22	oz/a	PREPRE	A					
	HERB ANTHEM MAXX	4.3	SC	2.5	oz/a	EPOST	B					
	HERB XTENDIMAX	2.9	SL	22	oz/a	EPOST	B					
	HERB ROUNDUP POWERMAX	4.5	SL	22	oz/a	EPOST	B					
3	HERB AUTHORITY MTZ	45	WG	14	oz/a	PREPRE	A	103	206	303	408	
	HERB ROUNDUP POWERMAX	4.5	SL	22	oz/a	PREPRE	A					
	HERB ANTHEM MAXX	4.3	SC	2.5	oz/a	EPOST	B					
	HERB XTENDIMAX	2.9	SL	22	oz/a	EPOST	B					
	HERB ROUNDUP POWERMAX	4.5	SL	22	oz/a	EPOST	B					
4	HERB AUTHORITY ELITE	7	EC	26	oz/a	PREPRE	A	104	202	301	403	
	HERB ROUNDUP POWERMAX	4.5	SL	22	oz/a	PREPRE	A					
	HERB ANTHEM MAXX	4.3	SC	2.5	oz/a	EPOST	B					
	HERB XTENDIMAX	2.9	SL	22	oz/a	EPOST	B					
	HERB ROUNDUP POWERMAX	4.5	SL	22	oz/a	EPOST	B					
5	HERB AUTHORITY ELITE	7	EC	26	oz/a	PREPRE	A	105	203	302	410	
	HERB ROUNDUP POWERMAX	4.5	SL	22	oz/a	PREPRE	A					
	HERB METRIBUZIN	75	WG	4	oz/a	PREPRE	A					
	HERB ANTHEM MAXX	4.3	SC	2.5	oz/a	EPOST	B					
	HERB XTENDIMAX	2.9	SL	22	oz/a	EPOST	B					
	HERB ROUNDUP POWERMAX	4.5	SL	22	oz/a	EPOST	B					
6	HERB AUTHORITY MTZ	45	WG	14	oz/a	PREPRE	A	106	209	311	404	
	HERB DUAL II MAGNUM	7.64	EC	16	oz/a	PREPRE	A					
	HERB ROUNDUP POWERMAX	4.5	SL	22	oz/a	PREPRE	A					
	HERB ANTHEM MAXX	4.3	SC	2.5	oz/a	EPOST	B					
	HERB XTENDIMAX	2.9	SL	22	oz/a	EPOST	B					
	HERB ROUNDUP POWERMAX	4.5	SL	22	oz/a	EPOST	B					
7	HERB ANTHEM MAXX	4.3	SC	3.3	oz/a	PREPRE	A	107	205	304	401	
	HERB ROUNDUP POWERMAX	4.5	SL	22	oz/a	PREPRE	A					
	HERB METRIBUZIN	75	WG	4	oz/a	PREPRE	A					
	HERB ANTHEM MAXX	4.3	SC	2.5	oz/a	EPOST	B					
	HERB XTENDIMAX	2.9	SL	22	oz/a	EPOST	B					
	HERB ROUNDUP POWERMAX	4.5	SL	22	oz/a	EPOST	B					
8	HERB ROWEL	51	WG	2	oz/a	PREPRE	A	108	211	309	407	
	HERB ROUNDUP POWERMAX	4.5	SL	22	oz/a	PREPRE	A					
	HERB WARRANT	3	CS	48	oz/a	EPOST	B					
	HERB XTENDIMAX	2.9	SL	22	oz/a	EPOST	B					
	HERB ROUNDUP POWERMAX	4.5	SL	22	oz/a	EPOST	B					
9	HERB BOUNDARY	6.5	EC	24	oz/a	PREPRE	A	109	201	310	411	
	HERB ROUNDUP POWERMAX	4.5	SL	22	oz/a	PREPRE	A					
	HERB PREFIX	5.29	EC	32	oz/a	EPOST	B					
	HERB XTENDIMAX	2.9	SL	22	oz/a	EPOST	B					
	HERB ROUNDUP POWERMAX	4.5	SL	22	oz/a	EPOST	B					
10	HERB OUTLOOK	6	EC	10	oz/a	PREPRE	A	110	208	305	406	
	HERB SHARPEN	2.85	SC	1	oz/a	PREPRE	A					
	HERB ROUNDUP POWERMAX	4.5	SL	22	oz/a	PREPRE	A					
	HERB ZIDUA	85	WG	1.5	oz/a	EPOST	B					
	HERB ENGENIA	5	SL	12.8	oz/a	EPOST	B					
	HERB ROUNDUP POWERMAX	4.5	SL	22	oz/a	EPOST	B					
11	HERB F9314-3	4.17	SC	6.5	oz/a	PREPRE	A	111	207	307	405	
	HERB ROUNDUP POWERMAX	4.5	SL	22	oz/a	PREPRE	A					
	HERB ANTHEM MAXX	4.3	SC	2.5	oz/a	EPOST	B					
	HERB XTENDIMAX	2.9	SL	22	oz/a	EPOST	B					
	HERB ROUNDUP POWERMAX	4.5	SL	22	oz/a	EPOST	B					

Sort Order: Replicate 1

# University of Tennessee

## FMC PROGRAMS FOR HERBICIDE-RESISTANT PALMER AMARANTH

Trial ID: JSBXFMC17      Location: Jackson, TN      Trial Year: 2017  
 Protocol ID: Authority \_ Anthem Xtend      Investigator: Dr. Larry Steckel  
 Project ID:      Study Director: Larry Steckel  
    Sponsor Contact: FMC

### General Trial Information

**Study Director:** Larry Steckel  
**Investigator:** Dr. Larry Steckel

**Conducted Under GLP:** No  
**Conducted Under GEP:** No

### Contacts

**Study Director:** Larry Steckel

**Investigator:** Dr. Larry Steckel

### Crop Description

**Crop 1:** GLXMA      Glycine max      **Crop Description:** Soybean  
**Variety:** ASGROW 46X6      **BBCH Scale:** BSOY  
**Description:** XTEND

**Planting Rate, Unit:** 8      S/FT      **Planting Date:** 5-8-17  
**Depth, Unit:** 1      IN      **Planting Method:** PLANTD planted  
**Row Spacing, Unit:** 30      IN      **Planting Equipment:** FE      Field Equipment  
**Soil Temperature, Unit:** 60      F  
**Soil Moisture:** NORMAL normal, adequate

### Pest Description

**Pest 1 Type:** W      **Code:** AMAPA *Amaranthus palmeri*  
**Common Name:** Palmer amaranth

**Pest 2 Type:** W      **Code:** IPOLA *Ipomoea lacunosa*  
**Common Name:** Pitted morningglory

### Site and Design

**Treated Plot Width:** 10 FT      **Site Type:** FIELD field  
**Treated Plot Length:** 30 FT  
**Treated Plot Area:** 300 FT<sup>2</sup>      **Treatments:** 11      **Tillage Type:** NOTILL no-till  
**Replications:** 4      **Study Design:** RACOB� Randomized Complete Block (RCB)

**Comment:** Plot 104 - PRE did not get applied.

#### Field Prep./Maintenance:

NOV 1, 2016 - 0-30-60  
 3/20/17 32 OZ ROUNDUP WEATHERMAX + 8 OZ CLARITY  
 5/2/17 - 48 OZ/A GRAMOXONE SL + 1% COC

### Application Description

	A	B
<b>Application Date:</b>	5-9-17	6-1-17
<b>Appl. Start Time:</b>	8:16 AM	9:26 AM
<b>Appl. Stop Time:</b>	8:31 AM	9:39 AM
<b>Application Method:</b>	SPRAY	SPRAY
<b>Application Timing:</b>	PRE	EPOST
<b>Application Placement:</b>	BROSOL	BROFOL
<b>Applied By:</b>	JR	DC
<b>Air Temperature, Unit:</b>	76 F	77 F
<b>% Relative Humidity:</b>	44	64
<b>Wind Velocity, Unit:</b>	2 MPH	0 MPH
<b>Wind Direction:</b>	W	
<b>Dew Presence (Y/N):</b>	Y yes	Y yes
<b>Soil Temperature, Unit:</b>	64 F	74 F
<b>Soil Moisture:</b>	NORMAL	EXCELL



# University of Tennessee

## FMC PROGRAMS FOR HERBICIDE-RESISTANT PALMER AMARANTH

Trial ID: JSBXFMC17  
 Protocol ID: Authority \_ Anthem Xtend  
 Project ID:

Location: Jackson, TN Trial Year: 2017  
 Investigator: Dr. Larry Steckel  
 Study Director: Larry Steckel  
 Sponsor Contact: FMC

### Crop Stage At Each Application

	A	B
<b>Crop 1 Code, BBCH Scale:</b>	GLXMA BSOY	GLXMA BSOY
<b>Stage Scale Used:</b>	BBCH	BBCH
<b>Stage Majority, Percent:</b>	00 100	V3
<b>Height, Unit:</b>		6 IN
<b>Height Minimum, Maximum:</b>		6 7

### Pest Stage At Each Application

	A	B
<b>Pest 1 Code, Type, Scale:</b>	AMAPA W --	AMAPA W 2-4L
<b>Height, Unit:</b>		2 IN
<b>Height Minimum, Maximum:</b>		1 3
<b>Pest 2 Code, Type, Scale:</b>	IPOLA W --	IPOLA W 2-3L
<b>Height, Unit:</b>		2 IN
<b>Height Minimum, Maximum:</b>		1 3

### Application Equipment

	A	B
<b>Appl. Equipment:</b>	BACKPACK	BACKPACK
<b>Equipment Type:</b>	BACCAI	BACCAI
<b>Operation Pressure, Unit:</b>	33 PSI	28 PSI
<b>Nozzle Type:</b>	AIXR	TTI
<b>Nozzle Size:</b>	110025	003
<b>Nozzle Spacing, Unit:</b>	19 IN	19 IN
<b>Nozzles/Row:</b>	2	
<b>Boom Length, Unit:</b>	6.33 FT	6.33 FT
<b>Boom Height, Unit:</b>	16 IN	16 IN
<b>Ground Speed, Unit:</b>	4 MPH	4 MPH
<b>Incorporation Equip.:</b>		4
<b>Hours to Incorp.:</b>		0
<b>Carrier:</b>	WATER	WATER
<b>Spray Volume, Unit:</b>	15 GAL/AC	15 gal/ac
<b>Mix Size, Unit:</b>	0.528 gallons	0.528 gallons
<b>Propellant:</b>	COMCO2	COMCO2
<b>Tank Mix (Y/N):</b>	Y yes	Y yes

# University of Tennessee

## SYSTEMS EVALUATIONS IN HT3 SOYBEAN

Trial ID: 2017-01-N8-03      Location: Jackson, TN      Trial Year: 2017  
 Protocol ID: 2017-01-N8-03      Investigator:  
 Project ID:      Study Director: Larry Steckel  
    Sponsor Contact: Robert F Montgomery

Trt No.	Treatment Type Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep 1	Rep 2	Rep 3	Notes
1	PROD UNTREATED CHECK	0	ND					101	205	307	
2	HERB ROWEL	51	WG	2 oz/a		PRE	A	102	209	303	
	HERB MON 76981	3	SL	64 oz/a		POST	B				
3	HERB ROWEL	51	WG	2 oz/a		PRE	A	103	207	302	
	HERB XTENDIMAX	2.9	SL	22 oz/a		PRE	A				
	HERB MON 76981	3	SL	64 oz/a		POST	B				
4	HERB ROWEL	51	WG	2 oz wt/a		PRE	A	104	208	309	
	HERB XTENDIMAX	2.9	SL	22 oz/a		PRE	A				
	HERB MON 76981	3	SL	64 oz/a		POST	B				
	HERB WARRANT	3	CS	48 oz/a		POST	B				
5	HERB ROWEL	51	WG	2 oz wt/a		PRE	A	105	210	301	
	HERB LIBERTY 280 SL	2.34	SL	29 oz/a		POST	B				
6	HERB AUTHORITY MAXX	66	WG	6.4 oz/a		PRE	A	106	201	306	
	HERB LIBERTY 280 SL	2.34	SL	29 oz/a		POST	B				
7	HERB AUTHORITY MAXX	66	WG	6.4 oz/a		PRE	A	107	202	310	
	HERB LIBERTY 280 SL	2.34	SL	29 oz/a		POST	B				
	HERB ZIDUA	85	WG	2 oz wt/a		POST	B				
8	HERB ROWEL	51	WG	2 oz wt/a		PRE	A	108	206	308	
	HERB MON 76981	3	SL	64 oz/a		POST	B				
	HERB LIBERTY 280 SL	2.34	SL	29 oz/a		POST	B				
9	HERB ROWEL	51	WG	2 oz wt/a		PRE	A	109	204	305	
	HERB XTENDIMAX	2.9	SL	22 oz/a		PRE	A				
	HERB MON 76981	3	SL	64 oz/a		POST	B				
	HERB LIBERTY 280 SL	2.34	SL	29 oz/a		POST	B				
10	HERB ROWEL	51	WG	2 oz wt/a		PRE	A	110	203	304	
	HERB XTENDIMAX	2.9	SL	22 oz/a		PRE	A				
	HERB MON 76981	3	SL	64 oz/a		POST	B				
	HERB LIBERTY 280 SL	2.34	SL	29 oz/a		POST	B				
	HERB WARRANT	3	CS	48 oz/a		POST	B				

Sort Order: Replicate 1

# University of Tennessee

## SYSTEMS EVALUATIONS IN HT3 SOYBEAN

Trial ID: 2017-01-N8-03      Location: Jackson, TN      Trial Year: 2017  
 Protocol ID: 2017-01-N8-03      Investigator:  
 Project ID:      Study Director: Larry Steckel  
                                  Sponsor Contact: Robert F Montgomery

### General Trial Information

**Study Director:** Robert F Montgomery  
**Investigator:** SCOTT A NOLTE

**Trial Status:** 1 one-year/interim

### Trial Location

**Country:** USA United States

**Conducted Under GLP:** No  
**Conducted Under GEP:** No

### Objectives:

Determine the weed control and yield potential of each herbicide system with dicamba, liberty and both, in HT3 Soy.

### Contacts

**Study Director:** Robert F Montgomery  
 -1869F

**Investigator:** SCOTT A NOLTE

### Crop Description

**Crop 1:** GLXMA      Glycine max      Soybean  
**Variety:** HT 4.3      **BBCH Scale:** BSOY  
**Description:** RR/LL/DICAMBA  
**Planting Rate, Unit:** 8      S/FT      **Planting Date:** 5-8-17  
**Depth, Unit:** 1      IN      **Planting Method:** PLANTD planted  
**Row Spacing, Unit:** 30      IN      **Planting Equipment:** FE      Field Equipment  
**Soil Temperature, Unit:** 60      F  
**Soil Moisture:** NORMAL normal, adequate

### Pest Description

**Pest 1 Type:** W      **Code:** AMAPA *Amaranthus palmeri*  
**Common Name:** Palmer amaranth

**Pest 2 Type:** W      **Code:** IPOLA *Ipomoea lacunosa*  
**Common Name:** Pitted morningglory

**Pest 3 Type:** W      **Code:** ANNGR Annual Grasses

### Site and Design

**Treated Plot Width:** 10 FT      **Site Type:** FIELD field  
**Treated Plot Length:** 30 FT  
**Treated Plot Area:** 300 FT2      **Treatments:** 10      **Tillage Type:** NOTILL no-till  
**Replications:** 3      **Study Design:** RACOB L Randomized Complete Block (RCB)

### Trial Initiation Comments:

ACTUAL PLANTED CORNERS GPS

NW - N35.63284 W-088.85688

SW - N35.63255 W-088.85712

SE - N35.63239 W-088.85683

NE - N35.63268 W-088.85658

15 FT + BORDER GPS CORNERS

NW - N35.63285 W-088.85692

SW - N35.63251 W-088.85722

SE - N35.63228 W-088.85681

NE - N35.63263 W-088.85653

### Comment: 6.5 LBS OF SEED LEFT

Treatments not containing dicamba product were treated using AIXR 025, 6.33 FT BOOM @ 15 GPA, 4 MPH, 33 PSI  
 June 1 - Seed buried in plot and boxes burned

# University of Tennessee

## SYSTEMS EVALUATIONS IN HT3 SOYBEAN

Trial ID: 2017-01-N8-03      Location: Jackson, TN      Trial Year: 2017  
 Protocol ID: 2017-01-N8-03      Investigator:  
 Project ID:      Study Director: Larry Steckel  
                                  Sponsor Contact: Robert F Montgomery

**Field Prep./Maintenance:**

11/1/16 - 0-30-60  
 3/20/17 32 OZ/A ROUNDUP WEATHERMAX + 8 OZ/A CLARITY  
 5/2/17 - 48 OZ/A GRAMOXONE SL + 1% COC

### Application Description

	A	B
<b>Application Date:</b>	5-9-17	6-5-17
<b>Appl. Start Time:</b>	10:15 AM	1:20 PM
<b>Appl. Stop Time:</b>	10:24 AM	1:34 PM
<b>Application Method:</b>	SPRAY	SPRAY
<b>Application Timing:</b>	PRE	POST
<b>Application Placement:</b>	BROSOI	BROFOL
<b>Applied By:</b>	DC	DC
<b>Air Temperature, Unit:</b>	85 F	86 F
<b>% Relative Humidity:</b>	47	63
<b>Wind Velocity, Unit:</b>	6 MPH	3 MPH
<b>Wind Direction:</b>	NW	NW
<b>Dew Presence (Y/N):</b>	N no	N no
<b>Soil Temperature, Unit:</b>	71 F	84 F
<b>Soil Moisture:</b>	OPT	NORMAL
<b>% Cloud Cover:</b>	5	95

### Crop Stage At Each Application

	A	B
<b>Crop 1 Code, BBCH Scale:</b>	GLXMA BSOY	GLXMA BSOY
<b>Stage Scale Used:</b>	BBCH	V4
<b>Stage Majority, Percent:</b>	00    100	
<b>Height, Unit:</b>		9 IN
<b>Height Minimum, Maximum:</b>		8    10

### Pest Stage At Each Application

	A	B
<b>Pest 1 Code, Type, Scale:</b>	AMAPA W --	AMAPA W 2-4L
<b>Height, Unit:</b>		4 IN
<b>Height Minimum, Maximum:</b>		3    5
<b>Pest 2 Code, Type, Scale:</b>	IPOLA W --	IPOLA W 2L
<b>Height, Unit:</b>		2 IN
<b>Height Minimum, Maximum:</b>		1    3
<b>Pest 3 Code, Type, Scale:</b>	ANNGR W --	ANNGR W 2L
<b>Height, Unit:</b>		2 IN
<b>Height Minimum, Maximum:</b>		1    3

# University of Tennessee

## SYSTEMS EVALUATIONS IN HT3 SOYBEAN

Trial ID: 2017-01-N8-03      Location: Jackson, TN      Trial Year: 2017  
 Protocol ID: 2017-01-N8-03      Investigator:  
 Project ID:      Study Director: Larry Steckel  
                                  Sponsor Contact: Robert F Montgomery

### Application Equipment

	A	B
<b>Appl. Equipment:</b>	BACKPACK	BACKPACK
<b>Equipment Type:</b>	BACCAI	BACCAI
<b>Operation Pressure, Unit:</b>	28    PSI	28    PSI
<b>Nozzle Type:</b>	TTI	TTI
<b>Nozzle Size:</b>	003	003
<b>Nozzle Spacing, Unit:</b>	19    IN	19    IN
<b>Boom Length, Unit:</b>	6.33 FT	6.33 FT
<b>Boom Height, Unit:</b>	16    IN	16    IN
<b>Ground Speed, Unit:</b>	4    MPH	4    MPH
<b>Incorporation Equip.:</b>	4	4
<b>Hours to Incorp.:</b>	0	0
<b>Carrier:</b>	WATER	WATER
<b>Spray Volume, Unit:</b>	15    gal/ac	15    gal/ac
<b>Mix Size, Unit:</b>	0.528 gallons	0.528 gallons
<b>Propellant:</b>	COMCO2	COMCO2
<b>Tank Mix (Y/N):</b>	Y yes	Y yes

## University of Tennessee

### EFFICACY AND CROP SAFETY OF HIGHLOAD DICAMBA FORMULATIONS

Trial ID: 2017-01-B7-15      Location: Jackson, TN      Trial Year: 2017  
 Protocol ID: 2017-01-B7-15      Investigator: Dr. Larry Steckel  
 Project ID:      Study Director: LARRY STECKEL  
 Sponsor Contact: Justin M Pollard/MONSANTO

Trt No. Type	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
1	HERB MON 119144	4	SL	16 oz/a		PRE	A	101	213	304	411	
2	HERB MON 119151	4	SL	48 oz/a		PRE	A	102	210	307	415	
3	HERB MON 119144 HERB ROWEL	4 51	SL WG	16 oz/a 2 oz wt/a		PRE PRE	A A	103	204	310	405	
4	HERB MON 119151 HERB ROWEL	4 51	SL WG	48 oz/a 2 oz wt/a		PRE PRE	A A	104	202	309	414	
5	HERB MON 119144 HERB WARRANT	4 3	SL CS	16 oz/a 48 oz/a		PRE PRE	A A	105	208	312	413	
6	HERB MON 119151 HERB WARRANT	4 3	SL CS	48 oz/a 48 oz/a		PRE PRE	A A	106	203	308	403	
7	HERB XTENDIMAX HERB ROUNDUP POWERMAX ADJ INTACT ADJ CLASS ACT RIDION	2.9 4.5 43.18 100	SL SL EF AD	22 oz/a 32 oz/a 0.5 % v/v 0.5 % v/v		POST POST POST POST	B B B B	107	216	302	404	
8	HERB MON 119144 HERB ROUNDUP POWERMAX ADJ CLASS ACT RIDION	4 4.5 100	SL SL AD	16 oz/a 32 oz/a 0.5 % v/v		POST POST POST	B B B	108	212	315	401	
9	HERB MON 76981 ADJ CLASS ACT RIDION	3 100	SL AD	64 oz/a 0.5 % v/v		POST POST	B B	109	211	313	407	
10	HERB MON 119151 ADJ CLASS ACT RIDION	4 100	SL AD	48 oz/a 0.5 % v/v		POST POST	B B	110	215	306	402	
11	HERB MON 119144 HERB ROUNDUP POWERMAX HERB SELECTMAX ADJ CLASS ACT RIDION	4 4.5 0.97 100	SL SL EC AD	16 oz/a 32 oz/a 6 oz/a 0.5 % v/v		POST POST POST POST	B B B B	111	209	305	416	
12	HERB MON 119151 HERB SELECTMAX ADJ CLASS ACT RIDION	4 0.97 100	SL EC AD	48 oz/a 6 oz/a 0.5 % v/v		POST POST POST	B B B	112	206	301	406	
13	HERB MON 119144 HERB ROUNDUP POWERMAX HERB SELECTMAX HERB WARRANT ADJ CLASS ACT RIDION	4 4.5 0.97 3 100	SL SL EC CS AD	16 oz/a 32 oz/a 6 oz/a 48 oz/a 0.5 % v/v		POST POST POST POST POST	B B B B B	113	214	316	410	
14	HERB MON 119151 HERB SELECTMAX HERB WARRANT ADJ CLASS ACT RIDION	4 0.97 3 100	SL EC CS AD	48 oz/a 6 oz/a 48 oz/a 0.5 % v/v		POST POST POST POST	B B B B	114	205	314	409	
15	HERB MON 119144 HERB ROUNDUP POWERMAX HERB WARRANT ULTRA ADJ CLASS ACT RIDION	4 4.5 3.49 100	SL SL CS AD	16 oz/a 32 oz/a 50 oz/a 0.5 % v/v		POST POST POST POST	B B B B	115	201	311	412	
16	HERB MON 119151 HERB WARRANT ULTRA ADJ CLASS ACT RIDION	4 3.49 100	SL CS AD	48 oz/a 50 oz/a 0.5 % v/v		POST POST POST	B B B	116	207	303	408	

Sort Order: Replicate 1

# University of Tennessee

## EFFICACY AND CROP SAFETY OF HIGHLOAD DICAMBA FORMULATIONS

Trial ID: 2017-01-B7-15      Location: Jackson, TN      Trial Year: 2017  
 Protocol ID: 2017-01-B7-15      Investigator: Dr. Larry Steckel  
 Project ID:      Study Director: LARRY STECKEL  
 Sponsor Contact: Justin M Pollard/MONSANTO

### General Trial Information

**Study Director:** LARRY STECKEL  
**Investigator:** Dr. Larry Steckel

### Trial Location

**Country:** USA United States

**Conducted Under GLP:** No  
**Conducted Under GEP:** No

### Contacts

**Study Director:** LARRY STECKEL

**Investigator:** Dr. Larry Steckel

### Crop Description

**Crop 1:** GLXMA      Glycine max      Soybean  
**Variety:** ASGROW 46X6      **BBCH Scale:** BSOY  
**Description:** DICAMBA TOLERANT  
**Planting Date:** 5-8-17  
**Planting Method:** PLANTD planted  
**Planting Equipment:** FE      Field Equipment  
**Planting Rate, Unit:** 8      S/FT  
**Depth, Unit:** 1      IN  
**Row Spacing, Unit:** 30      IN  
**Soil Temperature, Unit:** 60      F  
**Soil Moisture:** GOOD good

### Pest Description

**Pest 1 Type:** W      **Code:** AMAPA *Amaranthus palmeri*  
**Common Name:** Palmer amaranth

**Pest 2 Type:** W      **Code:** SIDSP *Sida spinosa*  
**Common Name:** Teaweed

**Pest 3 Type:** W      **Code:** IPOLA *Ipomoea lacunosa*  
**Common Name:** Pitted morningglory

**Pest 4 Type:** W      **Code:** ANNGR Annual Grasses

### Site and Design

**Treated Plot Width:** 7.5 FT  
**Treated Plot Length:** 30 FT  
**Treated Plot Area:** 225 FT<sup>2</sup>      **Treatments:** 16  
**Replications:** 4  
**Site Type:** FIELD      field  
**Tillage Type:** NOTILL no-till  
**Study Design:** RACOBL Randomized Complete Block (RCB)  
 14, 28 DA-A

### Trial Initiation Comments:

NE - N35.63285 W-088.85692  
 SE - N35.63243 W-088.85728  
 SW - N35.63263 W-088.85760  
 NW N35.63303 W-088.85725

### Field Prep./Maintenance:

11/1/16 - 0-30-60  
 3/20/17 32 OZ/A ROUNDUP WEATHERMAX + 8 OZ/A CLARITY  
 5/2/17 - 48 OZ/A GRAMOXONE SL + 1% COC

# University of Tennessee

## EFFICACY AND CROP SAFETY OF HIGHLOAD DICAMBA FORMULATIONS

Trial ID: 2017-01-B7-15      Location: Jackson, TN      Trial Year: 2017  
 Protocol ID: 2017-01-B7-15      Investigator: Dr. Larry Steckel  
 Project ID:      Study Director: LARRY STECKEL  
 Sponsor Contact: Justin M Pollard/MONSANTO

### Application Description

	A	B
<b>Application Date:</b>	5-9-17	5-30-17
<b>Appl. Start Time:</b>	10:34 AM	10:35 AM
<b>Appl. Stop Time:</b>	10:43 AM	10:49 AM
<b>Application Method:</b>	SPRAY	SPRAY
<b>Application Timing:</b>	PRE	POST
<b>Application Placement:</b>	BROSOL	BROFOL
<b>Applied By:</b>	JR	DC
<b>Air Temperature, Unit:</b>	85 F	87 F
<b>% Relative Humidity:</b>	42	50
<b>Wind Velocity, Unit:</b>	5 MPH	2 MPH
<b>Wind Direction:</b>	NW	NW
<b>Dew Presence (Y/N):</b>	N no	N no
<b>Soil Temperature, Unit:</b>	70 F	80 F
<b>Soil Moisture:</b>	NORMAL	EXCELL
<b>% Cloud Cover:</b>	10	10

### Crop Stage At Each Application

	A	B
<b>Crop 1 Code, BBCH Scale:</b>	GLXMA BSOY	GLXMA BSOY
<b>Stage Scale Used:</b>	BBCH	V2-V3
<b>Stage Majority, Percent:</b>	00    100	
<b>Height, Unit:</b>		6    IN
<b>Height Minimum, Maximum:</b>		6    7

### Pest Stage At Each Application

	A	B
<b>Pest 1 Code, Type, Scale:</b>	AMAPA W --	AMAPA W 2-4L
<b>Height, Unit:</b>		3    IN
<b>Height Minimum, Maximum:</b>		2    5
<b>Pest 2 Code, Type, Scale:</b>	SIDSP W --	SIDSP W 2L
<b>Height, Unit:</b>		2    IN
<b>Height Minimum, Maximum:</b>		1    3
<b>Pest 3 Code, Type, Scale:</b>	IPOLA W --	IPOLA W 2L
<b>Height, Unit:</b>		2    IN
<b>Height Minimum, Maximum:</b>		1    3
<b>Pest 4 Code, Type, Scale:</b>	ANNGR W --	ANNGR W 2L
<b>Height, Unit:</b>		2    IN
<b>Height Minimum, Maximum:</b>		2    3



# University of Tennessee

## EFFICACY AND CROP SAFETY OF HIGHLOAD DICAMBA FORMULATIONS

Trial ID: 2017-01-B7-15  
 Protocol ID: 2017-01-B7-15  
 Project ID:

Location: Jackson, TN      Trial Year: 2017  
 Investigator: Dr. Larry Steckel  
 Study Director: LARRY STECKEL  
 Sponsor Contact: Justin M Pollard/MONSANTO

### Application Equipment

	A	B
<b>Appl. Equipment:</b>	BACKPACK	BACKPACK
<b>Equipment Type:</b>	BACCAI	BACCAI
<b>Operation Pressure, Unit:</b>	32 PSI	32 PSI
<b>Nozzle Type:</b>	TTI	TTI
<b>Nozzle Size:</b>	025	025
<b>Nozzle Spacing, Unit:</b>	20 IN	20 IN
<b>Boom Length, Unit:</b>	5 FT	5 FT
<b>Boom Height, Unit:</b>	16 IN	16 IN
<b>Ground Speed, Unit:</b>	4 MPH	4 MPH
<b>Carrier:</b>	WATER	WATER
<b>Spray Volume, Unit:</b>	15 gal/ac	15 gal/ac
<b>Mix Size, Unit:</b>	0.528 gallons	0.528 gallons
<b>Propellant:</b>	COMCO2	COMCO2
<b>Tank Mix (Y/N):</b>	Y yes	Y yes

# University of Tennessee

## FIERCE, COBRA, AND RESOURCE IN A LIBERTY WEED CONTROL SYSTEM

Trial ID: JSBLLV64-17      Location: Jackson, TN      Trial Year: 2017  
 Protocol ID: 64.02      Investigator: Dr. Larry Steckel  
 Project ID:      Study Director:  
                                  Sponsor Contact: Mallory/Valent

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep				Notes
								1	2	3	4	
1	CHK NONTREATED							101	203	305	401	
2	HERB LIBERTY 280	2.34	SL	29	oz/a	EPOST	B	102	202	303	405	
	FERT AMS		WG	2.5	lb/a	EPOST	B					
	HERB LIBERTY 280	2.34	SL	29	oz/a	LPOST	C					
	HERB SELECT MAX	1	EC	6	oz/a	LPOST	C					
	FERT AMS		WG	2.5	lb/a	LPOST	C					
	ADJ NIS	100	SL	0.25	% v/v	LPOST	C					
3	HERB FIERCE	76	WG	3	oz/a	PRE	A	103	205	304	404	
	HERB LIBERTY 280	2.34	SL	29	oz/a	EPOST	B					
	FERT AMS		WG	2.5	lb/a	EPOST	B					
	HERB LIBERTY 280	2.34	SL	29	oz/a	LPOST	C					
	HERB SELECT MAX	1	EC	6	oz/a	LPOST	C					
	FERT AMS		WG	2.5	lb/a	LPOST	C					
	ADJ NIS	100	SL	0.25	% v/v	LPOST	C					
4	HERB LIBERTY 280	2.34	SL	29	oz/a	EPOST	B	104	201	302	402	
	HERB RESOURCE	0.83	EC	4	oz/a	EPOST	B					
	ADJ NIS	100	SL	0.25	% v/v	EPOST	B					
	FERT AMS		WG	2.5	lb/a	EPOST	B					
	HERB LIBERTY 280	2.34	SL	29	oz/a	LPOST	C					
	HERB SELECT MAX	1	EC	6	oz/a	LPOST	C					
	FERT AMS		WG	2.5	lb/a	LPOST	C					
	ADJ NIS	100	SL	0.25	% v/v	LPOST	C					
5	HERB LIBERTY 280	2.34	SL	29	oz/a	EPOST	B	105	204	301	403	
	HERB COBRA	2	EC	12.5	oz/a	EPOST	B					
	ADJ NIS	100	SL	0.25	% v/v	EPOST	B					
	FERT AMS		WG	2.5	lb/a	EPOST	B					
	HERB LIBERTY 280	2.34	SL	29	oz/a	LPOST	C					
	HERB SELECT MAX	1	EC	6	oz/a	LPOST	C					
	FERT AMS		WG	2.5	lb/a	LPOST	C					
	ADJ NIS	100	SL	0.25	% v/v	LPOST	C					

Sort Order: Replicate 1

# University of Tennessee

## FIERCE, COBRA, AND RESOURCE IN A LIBERTY WEED CONTROL SYSTEM

Trial ID: JSBLLV64-17      Location: Jackson, TN      Trial Year: 2017  
 Protocol ID: 64.02      Investigator: Dr. Larry Steckel  
 Project ID:      Study Director:  
 Sponsor Contact: Mallory/Valent

### General Trial Information

**Investigator:** Dr. Larry Steckel

**Conducted Under GLP:** No  
**Conducted Under GEP:** No

**Investigator:** Dr. Larry Steckel

<b>Crop 1:</b> GLXMA	Glycine max	<b>Crop Description</b>
<b>Variety:</b> CZ4748LL		Soybean
<b>Description:</b> LIBERTY LINK		<b>BBCH Scale:</b> BSOY
		<b>Planting Date:</b> 5-8-17
<b>Planting Rate, Unit:</b> 8 S/FT		<b>Planting Method:</b> PLANTD planted
<b>Depth, Unit:</b> 1 IN		<b>Planting Equipment:</b> FE Field Equipment
<b>Row Spacing, Unit:</b> 30 IN		
<b>Soil Temperature, Unit:</b> 60 F		
<b>Soil Moisture:</b> NORMAL normal, adequate		

### Pest Description

**Pest 1 Type:** W    **Code:** AMAPA *Amaranthus palmeri*  
**Common Name:** Palmer amaranth

**Pest 2 Type:** W    **Code:** SIDSP *Sida spinosa*  
**Common Name:** Teaweed

**Pest 3 Type:** W    **Code:** IPOLA *Ipomoea lacunosa*  
**Common Name:** Pitted morningglory

**Pest 4 Type:** W    **Code:** ANNGR Annual Grasses

### Site and Design

**Treated Plot Width:** 10 FT      **Site Type:** FIELD field  
**Treated Plot Length:** 30 FT  
**Treated Plot Area:** 300 FT<sup>2</sup>    **Treatments:** 5    **Tillage Type:** NOTILL no-till  
**Replications:** 4      **Study Design:** RACOB� Randomized Complete Block (RCB)

### Field Prep./Maintenance:

11/1/16 - 0-30-60  
 3/20/17 32 OZ/A ROUNDUP WEATHERMAX + 8 OZ/A CLARITY  
 5/2/17 - 48 OZ/A GRAMOXONE SL + 1% COC

### Application Description

	A	B
<b>Application Date:</b>	5-8-17	5-30-17
<b>Appl. Start Time:</b>	1:56 PM	9:06 AM
<b>Appl. Stop Time:</b>	1:58 PM	9:11 AM
<b>Application Method:</b>	SPRAY	SPRAY
<b>Application Timing:</b>	PRE	EPOST
<b>Application Placement:</b>	BROSOL	BROFOL
<b>Applied By:</b>	JR	DC
<b>Air Temperature, Unit:</b>	85 F	81 F
<b>% Relative Humidity:</b>	36	66
<b>Wind Velocity, Unit:</b>	2 MPH	3 MPH
<b>Wind Direction:</b>	W	W
<b>Dew Presence (Y/N):</b>	N no	N no
<b>Soil Temperature, Unit:</b>	82 F	74 F
<b>Soil Moisture:</b>	NORMAL	EXCELL
<b>% Cloud Cover:</b>	0	5

# University of Tennessee

## FIERCE, COBRA, AND RESOURCE IN A LIBERTY WEED CONTROL SYSTEM

Trial ID: JSBLLV64-17      Location: Jackson, TN      Trial Year: 2017  
 Protocol ID: 64.02      Investigator: Dr. Larry Steckel  
 Project ID:      Study Director:  
 Sponsor Contact: Mallory/Valent

### Crop Stage At Each Application

	A	B
<b>Crop 1 Code, BBCH Scale:</b>	GLXMA BSOY	GLXMA BSOY
<b>Stage Scale Used:</b>	BBCH	BBCH
<b>Stage Majority, Percent:</b>	00    100	V2
<b>Height, Unit:</b>		6    IN
<b>Height Minimum, Maximum:</b>		4    6

### Pest Stage At Each Application

	A	B
<b>Pest 1 Code, Type, Scale:</b>	AMAPA W --	AMAPA W 4-6L
<b>Height, Unit:</b>		4    IN
<b>Height Minimum, Maximum:</b>		2    6
<b>Pest 2 Code, Type, Scale:</b>	SIDSP W --	SIDSP W 2-4L
<b>Height, Unit:</b>		3    IN
<b>Height Minimum, Maximum:</b>		2    5
<b>Pest 3 Code, Type, Scale:</b>	IPOLA W --	IPOLA W 2L
<b>Height, Unit:</b>		2    IN
<b>Height Minimum, Maximum:</b>		2    3
<b>Pest 4 Code, Type, Scale:</b>	ANNGR W --	ANNGR W 2L
<b>Height, Unit:</b>		2    IN
<b>Height Minimum, Maximum:</b>		2    3

### Application Equipment

	A	B
<b>Appl. Equipment:</b>	BACKPACK	BACKPACK
<b>Equipment Type:</b>	BACCAI	BACCAI
<b>Operation Pressure, Unit:</b>	33    PSI	33    PSI
<b>Nozzle Type:</b>	AIXR	AIXR
<b>Nozzle Size:</b>	110025	110025
<b>Nozzle Spacing, Unit:</b>	19    IN	19    IN
<b>Nozzles/Row:</b>	2	2
<b>Boom Length, Unit:</b>	6.33 FT	6.33 FT
<b>Boom Height, Unit:</b>	16    IN	16    IN
<b>Ground Speed, Unit:</b>	4    MPH	4    MPH
<b>Carrier:</b>	WATER	WATER
<b>Spray Volume, Unit:</b>	15    GAL/AC	15    GAL/AC
<b>Mix Size, Unit:</b>	0.528 gallons	0.528 gallons
<b>Propellant:</b>	COMCO2	COMCO2
<b>Tank Mix (Y/N):</b>	Y yes	Y yes

## University of Tennessee

### HERBICIDE WEED CONTROL PROGRAM

Trial ID: 17SBUTSM07      Location: Jackson, TN      Trial Year: 2017  
 Protocol ID: 17SBUTSM07      Investigator: Dr. Larry Steckel  
 Project ID: 17SBUTSM07      Study Director: Larry Steckel  
 Sponsor Contact: Helena Chemical Company

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
1	CHK NONTREATED							101	204	308	407	
2	HERB Opti-DGA	L		8 oz/a		14DBP	A	102	208	305	404	
	HERB ROUNDUP POWERMAX	L		28 oz/a		14DBP	A					
3	HERB CLARITY	L		8 oz/a		14DBP	A	103	207	303	405	
	HERB ROUNDUP POWERMAX	L		28 oz/a		14DBP	A					
4	HERB Opti-DGA	L		8 oz/a		14DBP	A	104	209	306	401	
	HERB ROUNDUP POWERMAX	L		28 oz/a		14DBP	A					
	HERB ANTARES	L		8 oz/a		PRE	B					
	HERB GRAMOXONE	L		32 oz/a		PRE	B					
5	HERB Opti-DGA	L		8 oz/a		14DBP	A	105	201	307	409	
	HERB ROUNDUP POWERMAX	L		28 oz/a		14DBP	A					
	HERB SPARTAN	L		8 oz/a		PRE	B					
	HERB GRAMOXONE	L		32 oz/a		PRE	B					
6	HERB Opti-DGA	L		8 oz/a		14DBP	A	106	202	304	403	
	HERB ROUNDUP POWERMAX	L		28 oz/a		14DBP	A					
	HERB GRAMOXONE	L		32 oz/a		PRE	B					
	HERB HM1557A	L		1 oz/a		POST	C					
7	HERB Opti-DGA	L		8 oz/a		14DBP	A	107	205	309	402	
	HERB ROUNDUP POWERMAX	L		28 oz/a		14DBP	A					
	HERB GRAMOXONE	L		32 oz/a		PRE	B					
	HERB HM1618	84 DF		0.3 oz wt/a		POST	C					
8	HERB Opti-DGA	L		8 oz/a		14DBP	A	108	206	301	408	
	HERB ROUNDUP POWERMAX	L		28 oz/a		14DBP	A					
	HERB GRAMOXONE	L		32 oz/a		PRE	B					
	HERB HM1557A	L		1 oz/a		PRE	B					
	HERB SINISTER	L		11 oz/a		POST	C					
	HERB LIBERTY	L		28 oz/a		POST	C					
9	HERB Opti-DGA	L		8 oz/a		14DBP	A	109	203	302	406	
	HERB ROUNDUP POWERMAX	L		28 oz/a		14DBP	A					
	HERB GRAMOXONE	L		32 oz/a		PRE	B					
	HERB ANTARES	L		8 oz/a		PRE	B					
	HERB HM1557A	L		1 oz/a		POST	C					
	HERB LIBERTY	L		28 oz/a		POST	C					

Sort Order: Replicate 1

# University of Tennessee

## HERBICIDE WEED CONTROL PROGRAM

Trial ID: 17SBUTSM07      Location: Jackson, TN      Trial Year: 2017  
 Protocol ID: 17SBUTSM07      Investigator: Dr. Larry Steckel  
 Project ID: 17SBUTSM07      Study Director: Larry Steckel  
 Sponsor Contact: Helena Chemical Company

### General Trial Information

**Study Director:** Larry Steckel  
**Investigator:** Dr. Larry Steckel

**Conducted Under GLP:** No  
**Conducted Under GEP:** No

### Contacts

**Study Director:** Larry Steckel

**Investigator:** Dr. Larry Steckel

### Crop Description

**Crop 1:** GLXMA      Glycine max  
**Variety:** CZ4748LL  
**Description:** Liberty Link

**BBCH Scale:** BSOY

**Planting Rate, Unit:** 8      S/FT

**Depth, Unit:** 1      IN

**Row Spacing, Unit:** 30      IN

**Soil Temperature, Unit:** 59      F

**Soil Moisture:** ABONOR above normal, excessive

**Planting Date:** 5-1-17

**Planting Method:** PLANTD planted

**Planting Equipment:** FE      Field Equipment

### Pest Description

**Pest 1 Type:** W      **Code:** ERICA      Conyza canadensis  
**Common Name:** Horseweed

**Pest 2 Type:** W      **Code:** POAAN      Poa annua  
**Common Name:** Annual bluegrass

**Pest 3 Type:** W      **Code:** AMAPA      Amaranthus palmeri  
**Common Name:** Palmer amaranth

**Pest 4 Type:** W      **Code:** SIDSP      Sida spinosa  
**Common Name:** Teaweed

### Site and Design

**Treated Plot Width:** 7.5      FT

**Treated Plot Length:** 30      FT

**Treated Plot Area:** 225      FT<sup>2</sup>      **Treatments:** 9

**Replications:** 4

**Site Type:** FIELD      field

**Tillage Type:** NOTILL      no-till

**Study Design:** RACOB      Randomized Complete Block (RCB)

### Field Prep./Maintenance:

Nov. 1, 2016 - Fertilized with 0-30-60

# University of Tennessee

## HERBICIDE WEED CONTROL PROGRAM

Trial ID: 17SBUTSM07      Location: Jackson, TN      Trial Year: 2017  
 Protocol ID: 17SBUTSM07      Investigator: Dr. Larry Steckel  
 Project ID: 17SBUTSM07      Study Director: Larry Steckel  
 Sponsor Contact: Helena Chemical Company

### Application Description

	A	B	C
Application Date:	4-17-17	5-2-17	5-22-17
Appl. Start Time:	7:29 AM	10:17 AM	7:36 AM
Appl. Stop Time:	7:40 AM	10:26 AM	7:42 AM
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	14 DBP	PRE	POST
Application Placement:	BROFOL	BROFOL	BROFOL
Applied By:	DC	DC	DC
Air Temperature, Unit:	67 F	68 F	65 F
% Relative Humidity:	87	41	65
Wind Velocity, Unit:	3 MPH	8 MPH	2 MPH
Wind Direction:	S	SW	SE
Dew Presence (Y/N):	Y yes	N no	Y yes
Soil Temperature, Unit:	69 F	64 F	65 F
Soil Moisture:	OPT	OPT	NORMAL
% Cloud Cover:	80	0	95

### Crop Stage At Each Application

	A	B	C
Crop 1 Code, BBCH Scale:	GLXMA BSOY	GLXMA BSOY	GLXMA BSOY
Stage Scale Used:	--	BBCH	BBCH
Stage Majority, Percent:		00 100	V1-V2
Height, Unit:			3 IN
Height Minimum, Maximum:			2 4

### Pest Stage At Each Application

	A	B	C
Pest 1 Code, Type, Scale:	ERICA W 10+L	ERICA W 10LF	ERICA W --
Height, Unit:	5 IN	4 IN	
Height Minimum, Maximum:	5 6	4 5	
Pest 2 Code, Type, Scale:	POAAN W SEED	POAAN W --	POAAN W --
Diameter, Unit:	4 IN		
Height, Unit:	3 4		
Pest 3 Code, Type, Scale:	AMAPA W --	AMAPA W 2LF	AMAPA W 2-4L
Height, Unit:		1 IN	2 IN
Height Minimum, Maximum:		0.5 1.5	1 3
Pest 4 Code, Type, Scale:	SIDSP W --	SIDSP W --	SIDSP W 2-3L
Height, Unit:			2 IN
Height Minimum, Maximum:			1 2

# University of Tennessee

## HERBICIDE WEED CONTROL PROGRAM

Trial ID: 17SBUTSM07      Location: Jackson, TN      Trial Year: 2017  
 Protocol ID: 17SBUTSM07      Investigator: Dr. Larry Steckel  
 Project ID: 17SBUTSM07      Study Director: Larry Steckel  
 Sponsor Contact: Helena Chemical Company

### Application Equipment

	A	B	C
<b>Appl. Equipment:</b>	BACKPACK	BACKPACK	BACKPACK
<b>Equipment Type:</b>	BACCAI	BACCAI	BACCAI
<b>Operation Pressure, Unit:</b>	33 PSI	33 PSI	33 PSI
<b>Nozzle Type:</b>	MR	MR	MR
<b>Nozzle Size:</b>	015	015	015
<b>Nozzle Spacing, Unit:</b>	20 IN	20 IN	20 IN
<b>Boom ID:</b>	5 FT @ 15GPA	5 FT @ 15GPA	5 FT @ 15GPA
<b>Boom Length, Unit:</b>	5 FT	5 FT	5 FT
<b>Boom Height, Unit:</b>	16 IN	16 IN	16 IN
<b>Ground Speed, Unit:</b>	3.5 MPH	3.5 MPH	3.5 MPH
<b>Spray Volume, Unit:</b>	10 GAL/AC	10 GAL/AC	10 GAL/AC
<b>Mix Size, Unit:</b>	0.26 gallons	0.26 gallons	0.26 gallons
<b>Propellant:</b>	COMCO2	COMCO2	COMCO2
<b>Tank Mix (Y/N):</b>	Y yes	Y yes	Y yes



## University of Tennessee

### S-METOLACHOLOR/DICAMBA PREMIX: University testing program in RR2 Xtend soybeans

Trial ID: JSBX3502017      Location: Jackson, TN      Trial Year: 2017  
 Protocol ID: HDC050A4-2017US      Investigator: James Holloway  
 Project ID:      Study Director: Larry Steckel  
    Sponsor Contact: James Holloway

Trt No. Type	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
1	CHK NONTREATED						101	206	307	404	
2	HERB BOUNDARY	6.47916650772	EC	1.8 pt/a	PREPRE A		102	209	309	401	
	ADJ AG 13063		0 SL	1 % v/v	POSPOS C						
	HERB TAVIUM plus VAPORGRIP	3.38999986649	CS	56.5 oz/a	POSPOS C						
	HERB ROUNDUP POWERMAX		4.5 SL	28.4 oz/a	POSPOS C						
3	HERB BROADAXE XC		7 EC	25 oz/a	PREPRE A		103	205	302	402	
	ADJ AG 13063		0 SL	1 % v/v	POSPOS C						
	HERB TAVIUM plus VAPORGRIP	3.38999986649	CS	56.5 oz/a	POSPOS C						
	HERB ROUNDUP POWERMAX		4.5 SL	28.4 oz/a	POSPOS C						
4	HERB PREFIX	5.26399993896	EC	32 oz/a	PREPRE A		104	204	304	408	
	ADJ AG 13063		0 SL	1 % v/v	POSPOS C						
	HERB TAVIUM plus VAPORGRIP	3.38999986649	CS	56.5 oz/a	POSPOS C						
	HERB ROUNDUP POWERMAX		4.5 SL	28.4 oz/a	POSPOS C						
5	HERB BOUNDARY	6.47916650772	EC	1.8 pt/a	PREPRE A		105	201	305	410	
	ADJ AG 13063		0 SL	1 % v/v	POSPOS C						
	HERB TAVIUM plus VAPORGRIP	3.38999986649	CS	56.5 oz/a	POSPOS C						
	HERB FLEXSTAR		1.875 SL	16 oz/a	POSPOS C						
	HERB ROUNDUP POWERMAX		4.5 SL	28.4 oz/a	POSPOS C						
6	HERB BROADAXE XC		7 EC	25 oz/a	PREPRE A		106	210	303	405	
	ADJ AG 13063		0 SL	1 % v/v	POSPOS C						
	HERB TAVIUM plus VAPORGRIP	3.38999986649	CS	56.5 oz/a	POSPOS C						
	HERB FLEXSTAR		1.875 SL	16 oz/a	POSPOS C						
	HERB ROUNDUP POWERMAX		4.5 SL	28.4 oz/a	POSPOS C						
7	HERB VALOR XLT		40.3 WG	3 oz wt/a	PREPRE A		107	207	301	406	
	ADJ AG 13063		0 SL	1 % v/v	POSPOS C						
	HERB XTENDIMAX	2.91833353043	SL	22 oz/a	POSPOS C						
	HERB ROUNDUP POWERMAX		4.5 SL	28.4 oz/a	POSPOS C						
8	ADJ AG 13063		0 SL	1 % v/v	EAPOCR B		108	203	306	403	
	HERB TAVIUM plus VAPORGRIP	3.38999986649	CS	56.5 oz/a	EAPOCR B						
	HERB ROUNDUP POWERMAX		4.5 SL	28.4 oz/a	EAPOCR B						
9	ADJ AG 13063		0 SL	1 % v/v	EAPOCR B		109	208	308	409	
	HERB XTENDIMAX	2.91833353043	SL	22 oz/a	EAPOCR B						
	HERB ROUNDUP POWERMAX		4.5 SL	28.4 oz/a	EAPOCR B						
10	HERB WARRANT		3 SL	48 oz/a	PRE A		110	202	310	407	
	HERB ROUNDUP POWERMAX		5.5 SL	32 oz/a	POSPOS C						
	HERB XTENDIMAX		2.9 SL	22 oz/a	POSPOS C						

Sort Order: Replicate 1

# University of Tennessee

## S-METOLACHLOR/DICAMBA PREMIX: University testing program in RR2 Xtend soybeans

Trial ID: JSBX3502017      Location: Jackson, TN      Trial Year: 2017  
 Protocol ID: HDC050A4-2017US      Investigator: James Holloway  
 Project ID:      Study Director: Larry Steckel  
                                  Sponsor Contact: James Holloway

### General Trial Information

**Study Director:** Don Porter      **Title:** OVPROW  
**Investigator:** Brett Miller      **Title:** FLDBLG

**Initiation Date:** 3-13-17

@VAR1 49.376656      -24.53833  
                                  -124.715843      -66.968887

**Conducted Under GLP:** No  
**Conducted Under GEP:** No

### Objectives:

How do Syngenta PRE residual herbicides followed by S-metolachlor/dicamba premix (A21472C) tank mixed with Roundup PowerMax +/- Flexstar compare to PRE residual Valor XLT followed by XtendiMax tank mixed with Roundup PowerMax for weed control and crop safety in RR2 Xtend soybeans?

?

### Contacts

**Study Director:** Don Porter      **Title:** OVPROW  
**Organization:** Syngenta  
**Address:** 410 Swing Rd.      **Phone No.:** 336 632-7730  
**City+State/Prov:** Greensboro, NC  
**Postal Code:** 27409      **E-mail:** don.porter@syngenta.com

**Investigator:** Brett Miller      **Title:** FLDBLG  
**Organization:** Syngenta  
**Address:** 872 Harts Bridge Rd.      **Phone No.:** 731-423-0804  
**City+State/Prov:** Jackson, TN      **Mobile No.:** 731-803-1730  
**Postal Code:** 38301      **E-mail:** james.holloway@syngenta.com  
**Cooperator/Landowner**

**Cooperator:** Larry Steckel      **Role:** UNVCOP  
**Organization:** UT      **Org. Type:** COI  
**Address 1:** 605 Airways Blvd  
**City:** Jackson  
**State/Prov:** TN  
**Postal Code:** 38301      **Mobile No.:** 731.499.0120  
**Country:** US      **E-mail:** lsteckel@utk.edu

### Crop Description

**Crop 1:** GLXMA      Glycine max      Soybean  
**Variety:** ASGROW 46X6      **BBCH Scale:** BSOY  
**Planting Date:** 5-8-17  
**Planting Rate, Unit:** 8      S/FT      **Planting Method:** PLANTD planted  
**Depth, Unit:** 1      IN      **Planting Equipment:** FE      Field Equipment  
**Row Spacing, Unit:** 30      IN  
**Soil Temperature, Unit:** 60      F  
**Soil Moisture:** NORMAL normal, adequate

### Pest Description

**Pest 1 Type:** W      **Code:** AMAPA *Amaranthus palmeri*  
**Common Name:** Palmer amaranth

**Pest 2 Type:** W      **Code:** SIDSP *Sida spinosa*  
**Common Name:** Teaweed

**Pest 3 Type:** W      **Code:** IPOLA *Ipomoea lacunosa*  
**Common Name:** Pitted morningglory

**Pest 4 Type:** W      **Code:** ANNGR Annual Grasses

# University of Tennessee

## S-METOLACHOLOR/DICAMBA PREMIX: University testing program in RR2 Xtend soybeans

Trial ID: JSBX3502017      Location: Jackson, TN      Trial Year: 2017  
 Protocol ID: HDC050A4-2017US      Investigator: James Holloway  
 Project ID:      Study Director: Larry Steckel  
                                  Sponsor Contact: James Holloway

<b>Treated Plot Width:</b> 10 FT <b>Treated Plot Length:</b> 30 FT <b>Treated Plot Area:</b> 300 FT <sup>2</sup> <b>Treatments:</b> 10 <b>Replications:</b> 4	<b>Site and Design</b> <b>Site Type:</b> FIELD field <b>Experimental Unit:</b> 0 <b>Tillage Type:</b> NOTILL no-till <b>Study Design:</b> RACOB� Randomized Complete Block (RCB)
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**Field Prep./Maintenance:**

11/1/16 - 0-30-60

3/20/17 32 OZ/A ROUNDUP WEATHERMAX + 8 OZ/A CLARITY

5/2/17 - 48 OZ/A GRAMOXONE SL + 1% COC

### Application Description

	A	B	C
<b>Application Date:</b>	5-9-17	5-30-17	6-6-17
<b>Appl. Start Time:</b>	9:46 AM	10:29 AM	8:12 AM
<b>Appl. Stop Time:</b>	9:57 AM	10:31 AM	8:22 AM
<b>Application Method:</b>	SPRAY	SPRAY	SPRAY
<b>Application Timing:</b>	PRE	EAPOCR	POSPOS
<b>Application Placement:</b>	BROSOI	BROFOL	BROFOL
<b>Applied By:</b>	JR	DC	DC
<b>Air Temperature, Unit:</b>	70 F	87 F	76 F
<b>% Relative Humidity:</b>	41	49	75
<b>Wind Velocity, Unit:</b>	3 MPH	2 MPH	2 MPH
<b>Wind Direction:</b>	W	NW	E
<b>Dew Presence (Y/N):</b>	N no	N no	Y yes
<b>Soil Temperature, Unit:</b>	70 F	79 F	74 F
<b>Soil Moisture:</b>	NORMAL	EXCELL	NORMAL
<b>% Cloud Cover:</b>	10	10	95

### Crop Stage At Each Application

	A	B	C
<b>Crop 1 Code, BBCH Scale:</b>	GLXMA BSOY	GLXMA BSOY	GLXMA BSOY
<b>Stage Scale Used:</b>	BBCH	V2	V5
<b>Stage Majority, Percent:</b>	00 100		
<b>Height, Unit:</b>		6 IN	9 IN
<b>Height Minimum, Maximum:</b>		5 6	8 10

### Pest Stage At Each Application

	A	B	C
<b>Pest 1 Code, Type, Scale:</b>	AMAPA W --	AMAPA W 2-4L	AMAPA W 2-4L
<b>Height, Unit:</b>		3 IN	3 IN
<b>Height Minimum, Maximum:</b>		2 4	3 4
<b>Pest 2 Code, Type, Scale:</b>	SIDSP W --	SIDSP W 1-2L	SIDSP W 2L
<b>Height, Unit:</b>		2 IN	2 IN
<b>Height Minimum, Maximum:</b>		1 2	1 3
<b>Pest 3 Code, Type, Scale:</b>	IPOLA W --	IPOLA W 2L	IPOLA W 2L
<b>Height, Unit:</b>		3 IN	3 IN
<b>Height Minimum, Maximum:</b>		2 3	2 3
<b>Pest 4 Code, Type, Scale:</b>	ANNGR W --	ANNGR W 2L	ANNGR W 2L
<b>Height, Unit:</b>		2 IN	2 IN
<b>Height Minimum, Maximum:</b>		1 3	2 3

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## S-METOLACHLOR/DICAMBA PREMIX: University testing program in RR2 Xtend soybeans

Trial ID: JSBX3502017      Location: Jackson, TN      Trial Year: 2017  
 Protocol ID: HDC050A4-2017US      Investigator: James Holloway  
 Project ID:      Study Director: Larry Steckel  
                                  Sponsor Contact: James Holloway

	Application Equipment		
	A	B	C
<b>Appl. Equipment:</b>	BACKPACK	BACKPACK	BACKPACK
<b>Equipment Type:</b>	BACCAI	BACCAI	BACCAI
<b>Operation Pressure, Unit:</b>	33 PSI	28 PSI	28 PSI
<b>Nozzle Type:</b>	AIXR	TTI	TTI
<b>Nozzle Size:</b>	110025	003	003
<b>Nozzle Spacing, Unit:</b>	19 IN	19 IN	19 IN
<b>Nozzles/Row:</b>	2		
<b>Boom Length, Unit:</b>	6.33 FT	6.33 FT	6.33 FT
<b>Boom Height, Unit:</b>	16 IN	16 IN	16 IN
<b>Ground Speed, Unit:</b>	4 MPH	4 MPH	4 MPH
<b>Incorporation Equip.:</b>		4	4
<b>Hours to Incorp.:</b>		0	0
<b>Carrier:</b>	WATER	WATER	WATER
<b>Spray Volume, Unit:</b>	15 GAL/AC	15 gal/ac	15 gal/ac
<b>Mix Size, Unit:</b>	0.528 gallons	0.528 gallons	0.528 gallons
<b>Propellant:</b>	COMCO2	COMCO2	COMCO2
<b>Tank Mix (Y/N):</b>	Y yes	Y yes	Y yes

## University of Tennessee

### XTEND SOYBEAN SYSTEM COMPARED TO COMPETITOR (LIBERTY LINK)-South

Trial ID: 2017-01-B7-02  
 Protocol ID: 2017-01-B7-02  
 Project ID:

Location: Jackson, TN  
 Investigator:  
 Study Director: Larry Steckel

Trial Year: 2017

Sponsor Contact: Scott A Nolte/Montgomery/MONSANTO

Trt No. Type	Treatment Name	Form Conc	Form Type	Form Rate	Rate Unit	Growth Stage	Appl Code	Rep 1	Rep 2	Rep 3	Rep 4	Notes
1 VAR	XTEND SOYBEAN PROD UNTREATED CHECK	RR2X 0 ND		140000	seeds/a			101	207	303	408	
2 VAR	XTEND SOYBEAN HERB ROWEL FX ADJ INTACT HERB ROUNDUP POWERMAX HERB XTENDIMAX WITH VAPORGRIP	RR2X 40.3 WG 43.18 EF 4.5 SL 2.9 SL		140000	seeds/a			102	208	302	406	
					3 oz/a	PRE	A					
					0.5 % v/v	POST	B					
					32 oz/a	POST	B					
					22 oz/a	POST	B					
3 VAR	XTEND SOYBEAN HERB WARRANT ULTRA HERB XTENDIMAX WITH VAPORGRIP ADJ INTACT HERB ROUNDUP POWERMAX HERB XTENDIMAX WITH VAPORGRIP	RR2X 3.49 CS 2.9 SL 43.18 EF 4.5 SL 2.9 SL		140000	seeds/a			103	205	301	405	
					50 oz/a	PRE	A					
					22 oz/a	PRE	A					
					0.5 % v/v	POST	B					
					32 oz/a	POST	B					
					22 oz/a	POST	B					
4 VAR	XTEND SOYBEAN HERB METRIBUZIN 75DF HERB WARRANT HERB XTENDIMAX WITH VAPORGRIP ADJ INTACT HERB ROUNDUP POWERMAX HERB XTENDIMAX WITH VAPORGRIP HERB WARRANT ULTRA	RR2X 75 DF 3 CS 2.9 SL 43.18 EF 4.5 SL 2.9 SL 3.49 CS		140000	seeds/a	PRE		104	206	304	407	
					5 oz wt/a	PRE	A					
					48 oz/a	PRE	A					
					22 oz/a	PRE	A					
					0.5 % v/v	POST	B					
					32 oz/a	POST	B					
					22 oz/a	POST	B					
					50 oz/a	POST	B					
5 VAR	LIBERTY LINK PROD UNTREATED CHECK	LL 0 ND		140000	seeds/a			105	204	308	403	
6 VAR	LIBERTY LINK HERB PREFIX HERB LIBERTY 280 SL	LL 5.29 EC 2.34 SL		140000	seeds/a			106	203	307	401	
					32 oz/a	PRE	A					
					29 oz/a	POST	B					
7 VAR	LIBERTY LINK HERB PREFIX HERB METRIBUZIN 75DF HERB LIBERTY 280 SL	LL 5.29 EC 75 DF 2.34 SL		140000	seeds/a			107	202	305	402	
					32 oz/a	PRE	A					
					5 oz/a	PRE	A					
					29 oz/a	POST	B					
8 VAR	LIBERTY LINK HERB FIERCE HERB LIBERTY 280 SL HERB DUAL MAGNUM	LL 76 WG 2.34 SL 7.62 EC		140000	seeds/a			108	201	306	404	
					3 oz/a	PRE	A					
					29 oz/a	POST	B					
					6 oz/a	POST	B					

Sort Order: Replicate 1

# University of Tennessee

## XTEND SOYBEAN SYSTEM COMPARED TO COMPETITOR (LIBERTY LINK)-South

Trial ID: 2017-01-B7-02      Location: Jackson, TN      Trial Year: 2017  
 Protocol ID: 2017-01-B7-02      Investigator:  
 Project ID:      Study Director: Larry Steckel  
    Sponsor Contact: Scott A Nolte/Montgomery/MONSANTO

### General Trial Information

**Study Director:** Scott A Nolte  
**Investigator:** SCOTT A NOLTE

**Trial Status:** 1 one-year/interim

### Trial Location

**Country:** USA United States

**Conducted Under GLP:** No  
**Conducted Under GEP:** No

### Objectives:

Show competitive advantages of Xtend Crop System over Liberty Link System

### Contacts

**Study Director:** Scott A Nolte  
 -1869F

**Investigator:** SCOTT A NOLTE

### Crop Description

<p><b>Crop 1:</b> GLXMA      Glycine max  <b>Variety:</b> ASGROW 42X6  <b>Description:</b> DICAMBA TOLERANT</p> <p><b>Planting Rate, Unit:</b> 8      S/FT  <b>Depth, Unit:</b> 1      IN  <b>Row Spacing, Unit:</b> 30      IN  <b>Soil Temperature, Unit:</b> 60      F  <b>Soil Moisture:</b> NORMAL normal, adequate</p>	<p><b>BBCH Scale:</b> BSOY      Soybean</p> <p><b>Planting Date:</b> 5-8-17  <b>Planting Method:</b> PLANTD planted  <b>Planting Equipment:</b> FE      Field Equipment</p>
<p><b>Crop 2:</b> GLXMA      Glycine max  <b>Variety:</b> P43T14L  <b>Description:</b> LIBERTY LINK</p> <p><b>Planting Rate, Unit:</b> 8      S/FT  <b>Depth, Unit:</b> 1      IN  <b>Row Spacing, Unit:</b> 30      IN  <b>Soil Temperature, Unit:</b> 60      F  <b>Soil Moisture:</b> NORMAL normal, adequate</p>	<p><b>BBCH Scale:</b> BSOY      Soybean</p> <p><b>Planting Date:</b> 5-8-17  <b>Planting Method:</b> PLANTD planted  <b>Planting Equipment:</b> FE      Field Equipment</p>

### Pest Description

**Pest 1 Type:** W      **Code:** AMAPA *Amaranthus palmeri*  
**Common Name:** Palmer amaranth

**Pest 2 Type:** W      **Code:** IPOLA *Ipomoea lacunosa*  
**Common Name:** Pitted morningglory

**Pest 3 Type:** W      **Code:** SIDSP *Sida spinosa*  
**Common Name:** Teaweed

**Pest 4 Type:** W      **Code:** ANNGR Annual Grasses

### Site and Design

**Treated Plot Width:** 10 FT      **Site Type:** FIELD field  
**Treated Plot Length:** 30 FT  
**Treated Plot Area:** 300 FT<sup>2</sup>      **Treatments:** 8      **Tillage Type:** NOTILL no-till  
**Replications:** 4      **Study Design:** SPLPLO Split-Plot

**Comment:** TREATMENTS WITHOUT A DICAMBA PRODUCT WERE APPLIED WITH AIXR03, 5 FT @ 15 GPA, 28 PSI, 4MPH - 2 CENTER ROWS

# University of Tennessee

## XTEND SOYBEAN SYSTEM COMPARED TO COMPETITOR (LIBERTY LINK)-South

Trial ID: 2017-01-B7-02	Location: Jackson, TN	Trial Year: 2017
Protocol ID: 2017-01-B7-02	Investigator:	
Project ID:	Study Director: Larry Steckel	
	Sponsor Contact: Scott A Nolte/Montgomery/MONSANTO	

**Field Prep./Maintenance:**

11/1/16 - 0-30-60  
 3/20/17 32 OZ/A ROUNDUP WEATHERMAX + 8 OZ/A CLARITY  
 5/2/17 - 48 OZ/A GRAMOXONE SL + 1% COC

### Application Description

	A	B
<b>Application Date:</b>	5-9-17	5-30-17
<b>Appl. Start Time:</b>	9:26 AM	9:16 AM
<b>Appl. Stop Time:</b>	9:36 AM	9:25 AM
<b>Application Method:</b>	SPRAY	SPRAY
<b>Application Timing:</b>	PRE	POST
<b>Application Placement:</b>	BROSOI	BROFOL
<b>Applied By:</b>	DC	DC
<b>Air Temperature, Unit:</b>	78 F	81 F
<b>% Relative Humidity:</b>	73	64
<b>Wind Velocity, Unit:</b>	4 MPH	3 MPH
<b>Wind Direction:</b>	W	NW
<b>Dew Presence (Y/N):</b>	N no	N no
<b>Soil Temperature, Unit:</b>	69 F	79 F
<b>Soil Moisture:</b>	NORMAL	EXCELL
<b>% Cloud Cover:</b>	3	5

### Crop Stage At Each Application

	A	B
<b>Crop 1 Code, BBCH Scale:</b>	GLXMA BSOY	GLXMA BSOY
<b>Stage Scale Used:</b>	BBCH	V2-V3
<b>Stage Majority, Percent:</b>	00 100	
<b>Height, Unit:</b>		6 IN
<b>Height Minimum, Maximum:</b>		6 7
<b>Crop 2 Code, BBCH Scale:</b>	GLXMA BSOY	GLXMA BSOY
<b>Stage Scale Used:</b>	BBCH	V2-V3
<b>Stage Majority, Percent:</b>	00 100	
<b>Height, Unit:</b>		6 IN
<b>Height Minimum, Maximum:</b>		6 7

### Pest Stage At Each Application

	A	B
<b>Pest 1 Code, Type, Scale:</b>	AMAPA W --	AMAPA W 2-4L
<b>Height, Unit:</b>		3 IN
<b>Height Minimum, Maximum:</b>		2 4
<b>Pest 2 Code, Type, Scale:</b>	IPOLA W --	IPOLA W 2L
<b>Height, Unit:</b>		2 IN
<b>Height Minimum, Maximum:</b>		1 3
<b>Pest 3 Code, Type, Scale:</b>	SIDSP W --	SIDSP W 1-2L
<b>Height, Unit:</b>		2 IN
<b>Height Minimum, Maximum:</b>		1 2
<b>Pest 4 Code, Type, Scale:</b>	ANNGR W --	ANNGR W 2-3L
<b>Height, Unit:</b>		3 IN
<b>Height Minimum, Maximum:</b>		2 4

# University of Tennessee

## XTEND SOYBEAN SYSTEM COMPARED TO COMPETITOR (LIBERTY LINK)-South

Trial ID: 2017-01-B7-02  
 Protocol ID: 2017-01-B7-02  
 Project ID:

Location: Jackson, TN  
 Investigator:  
 Study Director: Larry Steckel  
 Sponsor Contact: Scott A Nolte/Montgomery/MONSANTO

Trial Year: 2017

### Application Equipment

	A	B
<b>Appl. Equipment:</b>	BACKPACK	BACKPACK
<b>Equipment Type:</b>	BACCAI	BACCAI
<b>Operation Pressure, Unit:</b>	32 PSI	32 PSI
<b>Nozzle Type:</b>	TTI	TTI
<b>Nozzle Size:</b>	025	025
<b>Nozzle Spacing, Unit:</b>	20 IN	20 IN
<b>Boom Length, Unit:</b>	5 FT	5 FT
<b>Boom Height, Unit:</b>	16 IN	16 IN
<b>Ground Speed, Unit:</b>	4 MPH	4 MPH
<b>Carrier:</b>	WATER	WATER
<b>Spray Volume, Unit:</b>	15 gal/ac	15 gal/ac
<b>Mix Size, Unit:</b>	0.528 gallons	0.528 gallons
<b>Propellant:</b>	COMCO2	COMCO2
<b>Tank Mix (Y/N):</b>	Y yes	Y yes



## University of Tennessee

### TANK MIX EVALUATIONS IN XTEND SOYBEAN

Trial ID: 2017-01-B7-05      Location: Jackson, TN      Trial Year: 2017  
 Protocol ID: 2017-01-B7-05      Investigator:  
 Project ID:      Study Director: Larry Steckel  
    Sponsor Contact: Robert F Montgomery

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
1	HERB XTENDIMAX	2.9	SL	22	oz/a	PRE	A	101	211	306	408	
	HERB WARRANT	3	CS	48	oz/a	PRE	A					
	HERB ROUNDUP POWERMAX	4.5	SL	32	oz/a	V3	B					
	ADJ INTACT	43.18	EF	0.5	% v/v	3"WEEDS	C					
	HERB XTENDIMAX	2.9	SL	22	oz/a	3"WEEDS	C					
	HERB ROUNDUP POWERMAX	4.5	SL	32	oz/a	3"WEEDS	C					
2	HERB XTENDIMAX	2.9	SL	22	oz/a	PRE	A	102	201	305	412	
	HERB WARRANT	3	CS	48	oz/a	PRE	A					
	HERB XTENDIMAX	2.9	SL	22	oz/a	V3	B					
	ADJ INTACT	43.18	EF	0.5	% v/v	3"WEEDS	C					
	HERB XTENDIMAX	2.9	SL	22	oz/a	3"WEEDS	C					
	HERB ROUNDUP POWERMAX	4.5	SL	32	oz/a	3"WEEDS	C					
3	HERB XTENDIMAX	2.9	SL	22	oz/a	PRE	A	103	212	311	407	
	HERB WARRANT	3	CS	48	oz/a	PRE	A					
	HERB COBRA	2	EC	10	oz/a	V3	B					
	ADJ INTACT	43.18	EF	0.5	% v/v	3"WEEDS	C					
	HERB XTENDIMAX	2.9	SL	22	oz/a	3"WEEDS	C					
	HERB ROUNDUP POWERMAX	4.5	SL	32	oz/a	3"WEEDS	C					
4	HERB XTENDIMAX	2.9	SL	22	oz/a	PRE	A	104	207	304	406	
	HERB WARRANT	3	CS	48	oz/a	PRE	A					
	HERB WARRANT ULTRA	3.49	CS	50	oz/a	V3	B					
	ADJ INTACT	43.18	EF	0.5	% v/v	3"WEEDS	C					
	HERB XTENDIMAX	2.9	SL	22	oz/a	3"WEEDS	C					
	HERB ROUNDUP POWERMAX	4.5	SL	32	oz/a	3"WEEDS	C					
5	HERB XTENDIMAX	2.9	SL	22	oz/a	PRE	A	105	208	307	401	
	HERB WARRANT	3	CS	48	oz/a	PRE	A					
	ADJ INTACT	43.18	EF	0.5	% v/v	V3	B					
	HERB XTENDIMAX	2.9	SL	22	oz/a	V3	B					
	HERB ROUNDUP POWERMAX	4.5	SL	32	oz/a	V3	B					
	ADJ INTACT	43.18	EF	0.5	% v/v	3"WEEDS	C					
6	HERB XTENDIMAX	2.9	SL	22	oz/a	PRE	A	106	205	308	410	
	HERB WARRANT	3	CS	48	oz/a	PRE	A					
	ADJ INTACT	43.18	EF	0.5	% v/v	V3	B					
	HERB COBRA	2	EC	10	oz/a	V3	B					
	HERB XTENDIMAX	2.9	SL	22	oz/a	V3	B					
	HERB ROUNDUP POWERMAX	4.5	SL	32	oz/a	V3	B					
7	HERB XTENDIMAX	2.9	SL	22	oz/a	PRE	A	107	202	309	411	
	HERB WARRANT	3	CS	48	oz/a	PRE	A					
	ADJ INTACT	43.18	EF	0.5	% v/v	V3	B					
	HERB WARRANT	3	CS	48	oz/a	V3	B					
	HERB XTENDIMAX	2.9	SL	22	oz/a	V3	B					
	HERB ROUNDUP POWERMAX	4.5	SL	32	oz/a	V3	B					
8	HERB XTENDIMAX	2.9	SL	22	oz/a	PRE	A	108	203	302	404	
	HERB WARRANT	3	CS	48	oz/a	PRE	A					
	HERB SELECTMAX	0.97	EC	6	oz/a	V3	B					
	HERB XTENDIMAX	2.9	SL	22	oz/a	V3	B					
	HERB ROUNDUP POWERMAX	4.5	SL	32	oz/a	V3	B					
	ADJ INTACT	43.18	EF	0.5	% v/v	V3	B					

## University of Tennessee

### TANK MIX EVALUATIONS IN XTEND SOYBEAN

Trial ID: 2017-01-B7-05      Location: Jackson, TN      Trial Year: 2017  
 Protocol ID: 2017-01-B7-05      Investigator:  
 Project ID:      Study Director: Larry Steckel  
    Sponsor Contact: Robert F Montgomery

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep				Notes
								1	2	3	4	
9	HERB XTENDIMAX	2.9	SL	22	oz/a	PRE	A	109	210	303	402	
	HERB WARRANT	3	CS	48	oz/a	PRE	A					
	ADJ INTACT	43.18	EF	0.5	% v/v	V3	B					
	HERB FIRSTRATE	84	WG	0.6	oz wt/a	V3	B					
	HERB XTENDIMAX	2.9	SL	22	oz/a	V3	B					
	HERB ROUNDUP POWERMAX	4.5	SL	32	oz/a	V3	B					
	ADJ INTACT	43.18	EF	0.5	% v/v	3"WEEDS	C					
	HERB XTENDIMAX	2.9	SL	22	oz/a	3"WEEDS	C					
	HERB ROUNDUP POWERMAX	4.5	SL	32	oz/a	3"WEEDS	C					
10	HERB XTENDIMAX	2.9	SL	22	oz/a	PRE	A	110	206	301	405	
	HERB WARRANT	3	CS	48	oz/a	PRE	A					
	ADJ INTACT	43.18	EF	0.5	% v/v	V3	B					
	HERB WARRANT ULTRA	3.49	CS	50	oz/a	V3	B					
	HERB XTENDIMAX	2.9	SL	22	oz/a	V3	B					
	HERB ROUNDUP POWERMAX	4.5	SL	32	oz/a	V3	B					
	ADJ INTACT	43.18	EF	0.5	% v/v	3"WEEDS	C					
	HERB XTENDIMAX	2.9	SL	22	oz/a	3"WEEDS	C					
	HERB ROUNDUP POWERMAX	4.5	SL	32	oz/a	3"WEEDS	C					
11	HERB XTENDIMAX	2.9	SL	22	oz/a	PRE	A	111	209	312	409	
	HERB WARRANT	3	CS	48	oz/a	PRE	A					
	ADJ INTACT	43.18	EF	0.5	% v/v	V3	B					
	HERB COBRA	2	EC	10	oz/a	V3	B					
	HERB WARRANT	3	CS	48	oz/a	V3	B					
	HERB XTENDIMAX	2.9	SL	22	oz/a	V3	B					
	HERB ROUNDUP POWERMAX	4.5	SL	32	oz/a	V3	B					
	ADJ INTACT	43.18	EF	0.5	% v/v	3"WEEDS	C					
	HERB XTENDIMAX	2.9	SL	22	oz/a	3"WEEDS	C					
	HERB ROUNDUP POWERMAX	4.5	SL	32	oz/a	3"WEEDS	C					
12	HERB XTENDIMAX	2.9	SL	22	oz/a	PRE	A	112	204	310	403	
	HERB WARRANT	3	CS	48	oz/a	PRE	A					
	ADJ INTACT	43.18	EF	0.5	% v/v	V3	B					
	HERB SELECTMAX	0.97	EC	6	oz/a	V3	B					
	HERB COBRA	2	EC	10	oz/a	V3	B					
	HERB WARRANT	3	CS	48	oz/a	V3	B					
	HERB XTENDIMAX	2.9	SL	22	oz/a	V3	B					
	HERB ROUNDUP POWERMAX	4.5	SL	32	oz/a	V3	B					
	ADJ INTACT	43.18	EF	0.5	% v/v	3"WEEDS	C					
	HERB XTENDIMAX	2.9	SL	22	oz/a	3"WEEDS	C					
	HERB ROUNDUP POWERMAX	4.5	SL	32	oz/a	3"WEEDS	C					

Sort Order: Replicate 1

# University of Tennessee

## TANK MIX EVALUATIONS IN XTEND SOYBEAN

Trial ID: 2017-01-B7-05      Location: Jackson, TN      Trial Year: 2017  
 Protocol ID: 2017-01-B7-05      Investigator:  
 Project ID:      Study Director: Larry Steckel  
                                  Sponsor Contact: Robert F Montgomery

### General Trial Information

**Study Director:** Robert F Montgomery  
**Investigator:** SCOTT A NOLTE

**Trial Status:** 1 one-year/interim

### Trial Location

**Country:** USA United States

**Conducted Under GLP:** No  
**Conducted Under GEP:** No

### Objectives:

Determine the crop response and impact on yield with commercial tank mix combinations in Xtend Soy.

### Contacts

**Study Director:** Robert F Montgomery  
 -1869F

**Investigator:** SCOTT A NOLTE

### Crop Description

**Crop 1:** GLXMA      Glycine max  
**Variety:** ASGROW 46X6  
**Description:** DICAMBA TOLERANT

**BBCH Scale:** BSOY

**Planting Rate, Unit:** 8      S/FT

**Depth, Unit:** 1      IN

**Row Spacing, Unit:** 30      IN

**Soil Temperature, Unit:** 60      F

**Soil Moisture:** NORMAL normal, adequate

**Planting Date:** 5-8-17  
**Planting Method:** PLANTD planted  
**Planting Equipment:** FE      Field Equipment

### Pest Description

**Pest 1 Type:** W      **Code:** AMAPA *Amaranthus palmeri*  
**Common Name:** Palmer amaranth

**Pest 2 Type:** W      **Code:** IPOLA *Ipomoea lacunosa*  
**Common Name:** Pitted morningglory

**Pest 3 Type:** W      **Code:** ANNGR Annual Grasses

### Site and Design

**Treated Plot Width:** 10 FT

**Site Type:** FIELD      field

**Treated Plot Length:** 30 FT

**Treated Plot Area:** 300 FT<sup>2</sup>      **Treatments:** 12      **Tillage Type:** NOTILL no-till

**Replications:** 4

**Study Design:** RACOB� Randomized Complete Block (RCB)

**Comment:** Treatments, without a dicamba product in it, were applied using AIXR 025, 15 gpa, 4 mph, 33 PSI, boom width 6.33 ft.

### Field Prep./Maintenance:

NOV 1, 2016 - 0-30-60

3/20/17 32 OZ ROUNDUP WEATHERMAX + 8 OZ CLARITY

5/2/17 - 48 OZ/A GRAMOXONE SL + 1% COCT

# University of Tennessee

## TANK MIX EVALUATIONS IN XTEND SOYBEAN

Trial ID: 2017-01-B7-05      Location: Jackson, TN      Trial Year: 2017  
 Protocol ID: 2017-01-B7-05      Investigator:  
 Project ID:      Study Director: Larry Steckel  
    Sponsor Contact: Robert F Montgomery

### Application Description

	A	B
<b>Application Date:</b>	5-8-17	6-6-17
<b>Appl. Start Time:</b>	1:08 PM	8:28 AM
<b>Appl. Stop Time:</b>	1:16 PM	8:45 AM
<b>Application Method:</b>	SPRAY	SPRAY
<b>Application Timing:</b>	PRE	V3
<b>Application Placement:</b>	BROS0I	BROFOL
<b>Applied By:</b>	JR	DC
<b>Air Temperature, Unit:</b>	81 F	76 F
<b>% Relative Humidity:</b>	39	75
<b>Wind Velocity, Unit:</b>	5 MPH	3 MPH
<b>Wind Direction:</b>	W	E
<b>Dew Presence (Y/N):</b>	N no	Y yes
<b>Soil Temperature, Unit:</b>	71 F	74 F
<b>Soil Moisture:</b>	NORMAL	NORMAL
<b>% Cloud Cover:</b>	0	80

### Crop Stage At Each Application

	A	B
<b>Crop 1 Code, BBCH Scale:</b>	GLXMA BSOY	GLXMA BSOY
<b>Stage Scale Used:</b>	BBCH	
<b>Stage Majority, Percent:</b>	00    100	

### Pest Stage At Each Application

	A	B
<b>Pest 1 Code, Type, Scale:</b>	AMAPA W --	AMAPA W 2-6L
<b>Height, Unit:</b>		3 IN
<b>Height Minimum, Maximum:</b>		3 4
<b>Pest 2 Code, Type, Scale:</b>	IPOLA W --	IPOLA W 2L
<b>Height, Unit:</b>		3 IN
<b>Height Minimum, Maximum:</b>		2 3
<b>Pest 3 Code, Type, Scale:</b>	ANNGR W --	ANNGR W 3-5L
<b>Height, Unit:</b>		4 IN
<b>Height Minimum, Maximum:</b>		3 6

# University of Tennessee

## TANK MIX EVALUATIONS IN XTEND SOYBEAN

Trial ID: 2017-01-B7-05  
 Protocol ID: 2017-01-B7-05  
 Project ID:

Location: Jackson, TN Trial Year: 2017  
 Investigator:  
 Study Director: Larry Steckel  
 Sponsor Contact: Robert F Montgomery

### Application Equipment

	A	B
<b>Appl. Equipment:</b>	TRACTOR	BACKPACK
<b>Equipment Type:</b>	SPRAYE	BACCAI
<b>Operation Pressure, Unit:</b>	40 PSI	28 PSI
<b>Nozzle Type:</b>	TTI	TTI
<b>Nozzle Size:</b>	11002	003
<b>Nozzle Spacing, Unit:</b>	19 IN	19 IN
<b>Nozzles/Row:</b>	2	
<b>Boom Length, Unit:</b>	10 FT	6.33 FT
<b>Boom Height, Unit:</b>	16 IN	16 IN
<b>Ground Speed, Unit:</b>	4 MPH	4 MPH
<b>Incorporation Equip.:</b>		4
<b>Hours to Incorp.:</b>		0
<b>Carrier:</b>	WATER	WATER
<b>Spray Volume, Unit:</b>	11 GAL/AC	15 gal/ac
<b>Mix Size, Unit:</b>	0.75 AC	0.528 gallons
<b>Propellant:</b>	PUMROL	COMCO2
<b>Tank Mix (Y/N):</b>	Y yes	Y yes

## University of Tennessee

### PRE EFFICACY AND TOLERANCE IN SOYBEAN WITH SURVEIL AND SONIC

Trial ID: NA17R5K001      Location: Jackson, TN      Trial Year: 2017  
 Protocol ID: NA17R5K001      Investigator: Dr. Larry Steckel  
 Project ID:      Study Director: Larry Steckel  
                                  Sponsor Contact: Haygood/DOW

Trt No.	Treatment Type Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
1	HERB SONIC HERB DURANGO DMA	70 4	WG SL	3 2	oz/a pt/a	PRE POST	A B	101	202	303	401	
2	HERB SONIC HERB DURANGO DMA	70 4	WG SL	4 2	oz/a pt/a	PRE POST	A B	102	205	305	410	
3	HERB SONIC HERB DURANGO DMA	70 4	WG SL	5 2	oz/a pt/a	PRE POST	A B	103	210	306	407	
4	HERB SONIC HERB DURANGO DMA	70 4	WG SL	6 2	oz/a pt/a	PRE POST	A B	104	201	309	405	
5	HERB SONIC HERB FIRSTRATE HERB DURANGO DMA	70 84 4	WG WG SL	3 0.3 2	oz/a oz/a pt/a	PRE POST POST	A B B	105	206	301	406	
6	HERB SURVEIL HERB DURANGO DMA	48 4	WG SL	2.1 2	oz/a pt/a	PRE POST	A B	106	209	310	409	
7	HERB SURVEIL HERB DURANGO DMA	48 4	WG SL	2.8 2	oz/a pt/a	PRE POST	A B	107	208	308	403	
8	HERB SURVEIL HERB DURANGO DMA	48 4	WG SL	3.5 2	oz/a pt/a	PRE POST	A B	108	204	307	402	
9	HERB SURVEIL HERB DURANGO DMA	48 4	WG SL	4.2 2	oz wt/a pt/a	PRE POST	A B	109	207	302	404	
10	HERB FIERCE HERB DURANGO DMA	76 4	WG SL	3 2	oz/a pt/a	PRE POST	A B	110	203	304	408	

Sort Order: Replicate 1

# University of Tennessee

## PRE EFFICACY AND TOLERANCE IN SOYBEAN WITH SURVEIL AND SONIC

Trial ID: NA17R5K001      Location: Jackson, TN      Trial Year: 2017  
 Protocol ID: NA17R5K001      Investigator: Dr. Larry Steckel  
 Project ID:      Study Director: Larry Steckel  
                                  Sponsor Contact: Haygood/DOW

### General Trial Information

**Study Director:** Larry Steckel  
**Investigator:** Dr. Larry Steckel  
  
**Planned Completion Date:** 10-1-17  
  
**Conducted Under GLP:** No  
**Conducted Under GEP:** No

### Objectives:

How does crop tolerance and efficacy compare between Surveil, Sonic, and key competitive products on key glyphosate-resistant broadleaf weeds in soybean when applied PRE?

### Contacts

**Study Director:** Larry Steckel  
**Investigator:** Dr. Larry Steckel

### Crop Description

<b>Crop 1:</b> GLXMA      Glycine max	<b>Crop Description:</b> Soybean
<b>Variety:</b> ASGROW 46X6	<b>BBCH Scale:</b> BSOY
<b>Description:</b> DICAMBA TOLERANT	
<b>Planting Rate, Unit:</b> 8      S/FT	<b>Planting Date:</b> 5-8-17
<b>Depth, Unit:</b> 1      IN	<b>Planting Method:</b> PLANTD planted
<b>Row Spacing, Unit:</b> 30      IN	<b>Planting Equipment:</b> FE      Field Equipment
<b>Soil Temperature, Unit:</b> 60      F	
<b>Soil Moisture:</b> NORMAL normal, adequate	

### Pest Description

**Pest 1 Type:** W      **Code:** AMAPA Amaranthus palmeri  
**Common Name:** Palmer amaranth  
  
**Pest 2 Type:** W      **Code:** IPOLA Ipomoea lacunosa  
**Common Name:** Pitted morningglory  
  
**Pest 3 Type:** W      **Code:** ANNGR Annual Grasses

### Site and Design

**Treated Plot Width:** 10 FT      **Site Type:** FIELD      field  
**Treated Plot Length:** 30 FT  
**Treated Plot Area:** 300 FT<sup>2</sup>      **Treatments:** 10      **Tillage Type:** NOTILL no-till  
**Replications:** 4      **Study Design:** RACOB� Randomized Complete Block (RCB)  
-1869F

### Field Prep./Maintenance:

NOV 1, 2016 - 0-30-60  
3/20/17 32 OZ ROUNDUP WEATHERMAX + 8 OZ CLARITY  
5/2/17 - 48 OZ/A GRAMOXONE SL + 1% COCT

# University of Tennessee

## PRE EFFICACY AND TOLERANCE IN SOYBEAN WITH SURVEIL AND SONIC

Trial ID: NA17R5K001  
 Protocol ID: NA17R5K001  
 Project ID:

Location: Jackson, TN Trial Year: 2017  
 Investigator: Dr. Larry Steckel  
 Study Director: Larry Steckel  
 Sponsor Contact: Haygood/DOW

### Application Description

	A	B
<b>Application Date:</b>	5-9-17	6-5-17
<b>Appl. Start Time:</b>	7:26 AM	12:31 PM
<b>Appl. Stop Time:</b>	7:42 AM	12:42 PM
<b>Application Method:</b>	SPRAY	SPRAY
<b>Application Timing:</b>	PRE	POST
<b>Application Placement:</b>	BROSOI	BROFOL
<b>Applied By:</b>	JR	DC
<b>Air Temperature, Unit:</b>	68 F	86 F
<b>% Relative Humidity:</b>	61	63
<b>Wind Velocity, Unit:</b>	0 MPH	3 MPH
<b>Wind Direction:</b>		NW
<b>Dew Presence (Y/N):</b>	Y yes	N no
<b>Soil Temperature, Unit:</b>	64 F	84 F
<b>Soil Moisture:</b>	NORMAL	NORMAL
<b>% Cloud Cover:</b>	10	95

### Crop Stage At Each Application

	A	B
<b>Crop 1 Code, BBCH Scale:</b>	GLXMA BSOY	GLXMA BSOY
<b>Stage Scale Used:</b>	BBCH	V4
<b>Stage Majority, Percent:</b>	00 100	
<b>Height, Unit:</b>		9 IN
<b>Height Minimum, Maximum:</b>		8 10

### Pest Stage At Each Application

	A	B
<b>Pest 1 Code, Type, Scale:</b>	AMAPA W --	AMAPA W 2-6L
<b>Height, Unit:</b>		4 IN
<b>Height Minimum, Maximum:</b>		3 5
<b>Pest 2 Code, Type, Scale:</b>	IPOLA W --	IPOLA W 2L
<b>Height, Unit:</b>		3 IN
<b>Height Minimum, Maximum:</b>		2 3
<b>Pest 3 Code, Type, Scale:</b>	ANNGR W --	ANNGR W 2-3L
<b>Height, Unit:</b>		3 IN
<b>Height Minimum, Maximum:</b>		2 4



# University of Tennessee

## PRE EFFICACY AND TOLERANCE IN SOYBEAN WITH SURVEIL AND SONIC

Trial ID: NA17R5K001  
 Protocol ID: NA17R5K001  
 Project ID:

Location: Jackson, TN Trial Year: 2017  
 Investigator: Dr. Larry Steckel  
 Study Director: Larry Steckel  
 Sponsor Contact: Haygood/DOW

### Application Equipment

	A	B
<b>Appl. Equipment:</b>	BACKPACK	BACKPACK
<b>Equipment Type:</b>	BACCAI	BACCAI
<b>Operation Pressure, Unit:</b>	33 PSI	33 PSI
<b>Nozzle Type:</b>	AIXR	AIXR
<b>Nozzle Size:</b>	110025	110025
<b>Nozzle Spacing, Unit:</b>	19 IN	19 IN
<b>Nozzles/Row:</b>	2	2
<b>Boom Length, Unit:</b>	6.33 FT	6.33 FT
<b>Boom Height, Unit:</b>	16 IN	16 IN
<b>Ground Speed, Unit:</b>	4 MPH	4 MPH
<b>Carrier:</b>	WATER	WATER
<b>Spray Volume, Unit:</b>	15 GAL/AC	15 GAL/AC
<b>Mix Size, Unit:</b>	0.528 gallons	0.528 gallons
<b>Propellant:</b>	COMCO2	COMCO2
<b>Tank Mix (Y/N):</b>	Y yes	Y yes

## University of Tennessee

Trial ID: COVERCROPIMPACT17	Location: Jackson, TN	Trial Year: 2017
Protocol ID: COVERCROPIMPACT17	Investigator: Dr. Larry Steckel	
Project ID:	Study Director:	
Sponsor Contact: MIRSKY, DAVIS, NORSWORTHY		

Trt No. Type	Treatment Name	Form Conc	Form Type	Rate	Growth Unit	Stage	Appl Code	Rep 1	2	3	4	Notes
1	CROP CEREAL RYE CULT EARLY CULT WEEDFREE						A	101	218	312	406	
2	CROP CEREAL RYE CULT EARLY HERB LIBERTY	2.34	SL	29 oz/a		2WK INTERVAL	A D	102	217	311	404	
3	CROP CEREAL RYE CULT EARLY CULT WEEDY						A	103	216	310	405	
4	CROP CEREAL RYE CULT INTERMEDIATE CULT WEEDFREE						B	104	215	315	407	
5	CROP CEREAL RYE CULT INTERMEDIATE HERB LIBERTY	2.34	SL	29 oz/a		2WK INTERVAL	B D	105	213	313	409	
6	CROP CEREAL RYE CULT INTERMEDIATE CULT WEEDY						B	106	214	314	408	
7	CROP CEREAL RYE CULT LATE CULT WEEDFREE						C	107	212	318	403	
8	CROP CEREAL RYE CULT LATE HERB LIBERTY	2.34	SL	29 oz/a		2WK INTERVAL	C D	108	210	317	401	
9	CROP CEREAL RYE CULT LATE CULT WEEDY						C	109	211	316	402	
10	CROP BAREGROUND CULT EARLY CULT WEEDFREE						A	110	209	309	414	
11	CROP BAREGROUND CULT EARLY HERB LIBERTY	2.34	SL	29 oz/a		2WK INTERVAL	A D	111	207	307	413	
12	CROP BAREGROUND CULT EARLY CULT WEEDY						A	112	208	308	415	
13	CROP BAREGROUND CULT INTERMEDIATE CULT WEEDFREE						B	113	201	301	411	
14	CROP BAREGROUND CULT INTERMEDIATE HERB LIBERTY	2.34	SL	29 oz/a		2WK INTERVAL	B D	114	203	302	412	
15	CROP BAREGROUND CULT INTERMEDIATE CULT WEEDY						B	115	202	303	410	
16	CROP BAREGROUND CULT LATE CULT WEEDFREE						C	116	206	306	418	
17	CROP BAREGROUND CULT LATE HERB LIBERTY	2.34	SL	29 oz/a		2WK INTERVAL	C D	117	205	304	416	
18	CROP BAREGROUND CULT LATE CULT WEEDY						C	118	204	305	417	

Sort Order: Replicate 1

# University of Tennessee

Trial ID: COVERCROPIIMPACT17	Location: Jackson, TN	Trial Year: 2017
Protocol ID: COVERCROPIIMPACT17	Investigator: Dr. Larry Steckel	
Project ID:	Study Director:	
	Sponsor Contact: MIRSKY, DAVIS, NORSWORTHY	

## General Trial Information

**Investigator:** Dr. Larry Steckel

**Conducted Under GLP:** No  
**Conducted Under GEP:** No

**Investigator:** Dr. Larry Steckel

## Crop Description

### Crop 1: RYE

**Planting Rate, Unit:** 110 lbs/a  
**Depth, Unit:** 0.25 in  
**Row Spacing, Unit:** 7 IN

**Planting Date:** 10-17-16  
**Planting Method:** DRILLE drilled

**Crop 2:** GLXMA Glycine max  
**Variety:** CZ4748LL  
**Description:** LIBERTY LINK

**BBCH Scale:** BSOY

**Planting Rate, Unit:** 8 S/FT  
**Depth, Unit:** 1 IN  
**Row Spacing, Unit:** 30 IN  
**Soil Temperature, Unit:** 59 F  
**Soil Moisture:** ABONOR above normal, excessive

**Planting Date:** 5-1-17  
**Planting Method:** PLANTD planted  
**Planting Equipment:** FE Field Equipment

## Site and Design

**Treated Plot Width:** 5 FT  
**Treated Plot Length:** 30 FT  
**Treated Plot Area:** 150 FT<sup>2</sup> **Treatments:** 18 **Tillage Type:** NOTILL no-till  
**Replications:** 4 **Study Design:** SPLPLO Split-Plot

**Comment:** All biomass samples are green wt only. Weight in grams.

May 15 - 2wk Liberty application on soybean

May 30 - 4 wk Liberty application on soybean WEEDFREE PLOTS were also treated on this date, with Liberty 29 oz/A

### Field Prep./Maintenance:

March 8, 2017 Treated plots 'A' Cereal Rye was 4-5 tillers and 14 in tall.

APR 4- Roundup PowerMax 32 oz/A was used at all 3 timings for termination

May 2 - Zidua 2 oz/A + Canopy 4 oz/A + Gramoxone 48 oz/A + COC 1% was applied to the weedfree plots at 15 gpa 5ft, AIXR03, PSI 28, 4 MPH

## Application Description

	A	B	C
<b>Application Date:</b>	3-8-17	4-4-17	4-17-17
<b>Appl. Start Time:</b>	1:53 PM	8:12 AM	8:00 AM
<b>Appl. Stop Time:</b>	1:59 PM	8:18 AM	8:06 AM
<b>Application Method:</b>	SPRAY	SPRAY	SPRAY
<b>Application Timing:</b>	EARLY	MID	LATE
<b>Application Placement:</b>	BROFOL	BROFOL	BROFOL
<b>Applied By:</b>	GM	GM	DC
<b>Air Temperature, Unit:</b>	75 F	63 F	67 F
<b>% Relative Humidity:</b>	63	83	87
<b>Wind Velocity, Unit:</b>	2.5 MPH	0 MPH	3 MPH
<b>Wind Direction:</b>	N		S
<b>Dew Presence (Y/N):</b>	N no	Y yes	Y yes
<b>Soil Temperature, Unit:</b>	60 F	57 F	69 F
<b>Soil Moisture:</b>	EXCELL	EXCELL	OPT
<b>% Cloud Cover:</b>	0	0	80

# University of Tennessee

Trial ID: COVERCROPIMPACT17  
 Protocol ID: COVERCROPIMPACT17  
 Project ID:

Location: Jackson, TN      Trial Year: 2017  
 Investigator: Dr. Larry Steckel  
 Study Director:  
 Sponsor Contact: MIRSKY, DAVIS, NORSWORTHY

### Crop Stage At Each Application

	A	B	C
<b>Crop 1 Code, BBCH Scale:</b>	RYE	RYE	RYE
<b>Stage Scale Used:</b>	4-5TILLER	HEADING	HEADING
<b>Height, Unit:</b>	14 IN	24 IN	26 IN
<b>Crop 2 Code, BBCH Scale:</b>	GLXMA BSOY	GLXMA BSOY	GLXMA BSOY
<b>Stage Scale Used:</b>	BBCH	BBCH	

### Application Equipment

	A	B	C
<b>Appl. Equipment:</b>	BACKPACK	BACKPACK	BACKPACK
<b>Equipment Type:</b>	BACCAI	BACCAI	BACCAI
<b>Operation Pressure, Unit:</b>	28 PSI	28 PSI	28 PSI
<b>Nozzle Type:</b>	AIXR	AIXR	AIXR
<b>Nozzle Size:</b>	11003	11003	11003
<b>Nozzle Spacing, Unit:</b>	20 IN	20 IN	20 IN
<b>Boom ID:</b>	5 FT @ 15GPA	5 FT @ 15GPA	5 FT @ 15GPA
<b>Boom Length, Unit:</b>	5 FT	5 FT	5 FT
<b>Boom Height, Unit:</b>	16 IN	16 IN	16 IN
<b>Ground Speed, Unit:</b>	4 MPH	4 MPH	4 MPH
<b>Spray Volume, Unit:</b>	15 GAL/AC	15 GAL/AC	15 GAL/AC
<b>Mix Size, Unit:</b>	0.528 gallons	0.528 gallons	0.528 gallons
<b>Spray pH:</b>	0.528	0.528	0.528
<b>Propellant:</b>	COMCO2	COMCO2	COMCO2
<b>Tank Mix (Y/N):</b>	Y yes	Y yes	Y yes

## University of Tennessee

### ENGENIA+ZIDUA PREMIX PORTFOLIO/MEDIUM SOIL

Trial ID: JSBXBAS73-17  
 Protocol ID: MKD-H-2017-US-D73-A-01.0  
 Project ID:

Location: Jackson, TN      Trial Year: 2017  
 Investigator: Dr. Larry Steckel  
 Study Director: Larry Steckel  
 Sponsor Contact: Chad Asmus/BASF/Stapleton

Trt No. Type	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Rep 1	2	3	4	Notes
1	CHK CHECK							101	205	307	405	
2	HERB VERDICT	668	EC	5.0	fl oz/a	PRE	A	102	208	306	401	
	HERB OUTLOOK	720	EC	5.0	fl oz/a	PRE	A					
	HERB ENGENIA	600	SL	12.8	fl oz/a	POST	B					
	HERB ZIDUA	85	WG	1.3	oz wt/a	POST	B					
	HERB ROUNDUP POWERMAX	540	SL	32.0	fl oz/a	POST	B					
	PROD INDUCE	998	TK	0.25	% v/v	POST	B					
3	HERB PREFIX	634.8	ME	32.0	fl oz/a	PRE	A	103	209	305	409	
	ADJ INTACT		L	0.5	% v/v	POST	B					
	HERB XTENDIMAX	350	SL	22.0	fl oz/a	POST	B					
	HERB DUAL MAGNUM	915	EC	16.0	fl oz/a	POST	B					
	HERB ROUNDUP POWERMAX	540.0	SL	32.0	fl oz/a	POST	B					
	PROD INDUCE	998.0	TK	0.25	% v/v	POST	B					
4	HERB WARRANT ULTRA	413	CS	48.0	fl oz/a	PRE	A	104	203	302	403	
	ADJ INTACT		L	0.5	% v/v	POST	B					
	HERB XTENDIMAX	350	SL	22.0	fl oz/a	POST	B					
	HERB WARRANT	360	CS	48.0	fl oz/a	POST	B					
	HERB ROUNDUP POWERMAX	540.0	SL	32.0	fl oz/a	POST	B					
	PROD INDUCE	998.0	TK	0.25	% v/v	POST	B					
5	HERB ENGENIA	600.0	SL	12.8	fl oz/a	POST	B	105	204	309	408	
	HERB ZIDUA	85.0	WG	1.3	oz wt/a	POST	B					
	HERB ROUNDUP POWERMAX	540.0	SL	32.0	fl oz/a	POST	B					
	PROD INDUCE	998.0	TK	0.25	% v/v	POST	B					
6	ADJ INTACT		L	0.5	% v/v	POST	B	106	207	301	402	
	HERB XTENDIMAX	350	SL	22.0	fl oz/a	POST	B					
	HERB DUAL MAGNUM	915	EC	16.0	fl oz/a	POST	B					
	HERB ROUNDUP POWERMAX	540.0	SL	32.0	fl oz/a	POST	B					
	PROD INDUCE	998.0	TK	0.25	% v/v	POST	B					
7	ADJ INTACT		L	0.5	% v/v	POST	B	107	201	303	404	
	HERB XTENDIMAX	350	SL	22.0	fl oz/a	POST	B					
	HERB WARRANT	360	CS	48.0	fl oz/a	POST	B					
	HERB ROUNDUP POWERMAX	540.0	SL	32.0	fl oz/a	POST	B					
	PROD INDUCE	998.0	TK	0.25	% v/v	POST	B					
8	HERB ENGENIA	600.0	SL	12.8	fl oz/a	POST	B	108	202	304	407	
	HERB ROUNDUP POWERMAX	540.0	SL	32.0	fl oz/a	POST	B					
	PROD INDUCE	998.0	TK	0.25	% v/v	POST	B					
9	HERB ZIDUA	85	WG	1.3	oz wt/a	PRE	A	109	206	308	406	
	HERB ZIDUA	85	WG	1.3	oz wt/a	POST	B					
	HERB ENGENIA		SL	12.8	oz/a	POST	B					
	HERB ROUNDUP POWERMAX	4.5	SL	32	oz/a	POST	B					
	ADJ INDUCE	100	SL	0.25	% v/v	POST	B					

Sort Order: Replicate 1

# University of Tennessee

## ENGENIA+ZIDUA PREMIX PORTFOLIO/MEDIUM SOIL

Trial ID: JSBXBAS73-17  
 Protocol ID: MKD-H-2017-US-D73-A-01.0  
 Project ID:

Location: Jackson, TN      Trial Year: 2017  
 Investigator: Dr. Larry Steckel  
 Study Director: Larry Steckel  
 Sponsor Contact: Chad Asmus/BASF/Stapleton

### General Trial Information

**Study Director:** Larry Steckel  
**Investigator:** Dr. Larry Steckel

**Conducted Under GLP:** No  
**Conducted Under GEP:** No

### Objectives:

Demonstrate benefits of sequential PRE/POST over total POST.

### Contacts

**Study Director:** Larry Steckel

**Investigator:** Dr. Larry Steckel

### Crop Description

<b>Crop 1:</b> GLXMA      Glycine max	<b>Crop Description:</b> Soybean
<b>Variety:</b> ASGROW 42X6	<b>BBCH Scale:</b> BSOY
<b>Description:</b> DICAMBA TOLERANT	
<b>Planting Rate, Unit:</b> 8      S/FT	<b>Planting Date:</b> 5-3-17
<b>Depth, Unit:</b> 1      IN	<b>Planting Method:</b> PLANTD planted
<b>Row Spacing, Unit:</b> 30      IN	<b>Planting Equipment:</b> FE      Field Equipment
<b>Soil Temperature, Unit:</b> 63      F	
<b>Soil Moisture:</b> NORMAL normal, adequate	
<b>Seed Bed:</b> MEDIUM medium	

### Pest Description

**Pest 1 Type:** W    **Code:** AMAPA Amaranthus palmeri  
**Common Name:** Palmer amaranth

**Pest 2 Type:** W    **Code:** SIDSP Sida spinosa  
**Common Name:** Teaweed

**Pest 3 Type:** W    **Code:** ANNGR Annual Grasses

### Site and Design

<b>Treated Plot Width:</b> 10 FT	<b>Site Type:</b> FIELD field
<b>Treated Plot Length:</b> 30 FT	
<b>Treated Plot Area:</b> 300 FT <sup>2</sup>	<b>Tillage Type:</b> NOTILL no-till
<b>Replications:</b> 4	<b>Study Design:</b> RACOB L Randomized Complete Block (RCB)

### Field Prep./Maintenance:

NOV 1, 2016 - 0-30-60  
 3/20/17 32 OZ ROUNDUP WEATHERMAX + 8 OZ CLARITY  
 5/2/17 - 48 OZ/A GRAMOXONE SL + 1% COC  
 5/9/17 - 16 OZ/A SELECT MAX + 1% COC

# University of Tennessee

## ENGENIA+ZIDUA PREMIX PORTFOLIO/MEDIUM SOIL

Trial ID: JSBXBAS73-17  
 Protocol ID: MKD-H-2017-US-D73-A-01.0  
 Project ID:

Location: Jackson, TN      Trial Year: 2017  
 Investigator: Dr. Larry Steckel  
 Study Director: Larry Steckel  
 Sponsor Contact: Chad Asmus/BASF/Stapleton

### Application Description

	A	B
<b>Application Date:</b>	5-3-17	5-30-17
<b>Appl. Start Time:</b>	12:42 PM	9:38 AM
<b>Appl. Stop Time:</b>	12:47 PM	9:47 AM
<b>Application Method:</b>	SPRAY	SPRAY
<b>Application Timing:</b>	PRE	POST
<b>Application Placement:</b>	BROSOL	BROFOL
<b>Applied By:</b>	DC	DC
<b>Air Temperature, Unit:</b>	80 F	82 F
<b>% Relative Humidity:</b>	39	65
<b>Wind Velocity, Unit:</b>	5 MPH	2 MPH
<b>Wind Direction:</b>	SW	NW
<b>Dew Presence (Y/N):</b>	N no	N no
<b>Soil Temperature, Unit:</b>	71 F	76 F
<b>Soil Moisture:</b>	NORMAL	EXCELL
<b>% Cloud Cover:</b>	100	10

### Crop Stage At Each Application

	A	B
<b>Crop 1 Code, BBCH Scale:</b>	GLXMA BSOY	GLXMA BSOY
<b>Stage Scale Used:</b>	BBCH	V2-V3
<b>Stage Majority, Percent:</b>	00    100	
<b>Height, Unit:</b>		6 IN
<b>Height Minimum, Maximum:</b>		5    7

### Pest Stage At Each Application

	A	B
<b>Pest 1 Code, Type, Scale:</b>	AMAPA W --	AMAPA W 2-4L
<b>Height, Unit:</b>		3 IN
<b>Height Minimum, Maximum:</b>		2    4
<b>Pest 2 Code, Type, Scale:</b>	SIDSP W --	SIDSP W 2L
<b>Height, Unit:</b>		2 IN
<b>Height Minimum, Maximum:</b>		1    3
<b>Pest 3 Code, Type, Scale:</b>	ANNGR W -	ANNGR W 2L
<b>Height, Unit:</b>		2 IN
<b>Height Minimum, Maximum:</b>		1    3

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### Application Equipment

	A	B
<b>Appl. Equipment:</b>	BACKPACK	BACKPACK
<b>Equipment Type:</b>	BACCAI	BACCAI
<b>Operation Pressure, Unit:</b>	33    PSI	28    PSI
<b>Nozzle Type:</b>	AIXR	TTI
<b>Nozzle Size:</b>	110025	003
<b>Nozzle Spacing, Unit:</b>	19    IN	19    IN
<b>Nozzles/Row:</b>	2	
<b>Boom Length, Unit:</b>	6.33 FT	6.33 FT
<b>Boom Height, Unit:</b>	16    IN	16    IN
<b>Ground Speed, Unit:</b>	4    MPH	4    MPH
<b>Incorporation Equip.:</b>		4
<b>Hours to Incorp.:</b>		0
<b>Carrier:</b>	WATER	WATER
<b>Spray Volume, Unit:</b>	15    GAL/AC	15    gal/ac
<b>Mix Size, Unit:</b>	0.528 gallons	0.528 gallons
<b>Propellant:</b>	COMCO2	COMCO2
<b>Tank Mix (Y/N):</b>	Y yes	Y yes