

Purdue University

Spartan and Classic Efficacy on Liberty Link Soybean and Glyphosate Resistant Weeds

Trial ID: 10S-SEP-NTS-73 Protocol ID: 10S-SEP-NTS-73
 Location: SEPAC Study Director: Paul Marquardt/Mike White
 Project ID: Investigator: Dr. Bill Johnson
 Sponsor Contact: Joseph Reed

General Trial Information

Study Director: Paul Marquardt/Mike White **Title:** Research Associate
Investigator: Dr. William G. Johnson **Title:** Professor

Discipline: H herbicide
Trial Status: E established
Initiation Date: 3-24-2010

Trial Location

City: Butlerville **USA** 49.376656 -24.53833
State/Prov.: IN -124.715843 -66.968887
Postal Code: 47223-0216
Country: USA

Personnel

Study Director: Paul Marquardt/Mike White **Title:** Research Associate

Affiliation: Purdue University
Address: 915 W. State St., Botany and Plant Pathology
Location: West Lafayette, IN

Postal Code: 47907 **E-mail:** pmarquar@purdue.edu

Phone No.: 765-494-4621 **Mobile No.:** 765-409-6369

Investigator: Dr. William G. Johnson **Title:** Professor

Affiliation: Purdue University
Address: 915 W. State St.
Location: West Lafayette, IN USA

Postal Code: 47907 **E-mail:** wgj@purdue.edu

Phone No.: 765-494-4656

Cooperator/Landowner

Cooperator: Throckmorton Purdue Ag Center **Role:** Purdue Ag Center
Organization: Purdue University
Address 1: 8343 US 231 S

Phone No.: 765-538-3422

Fax No.: 765-538-3423

City: Lafayette

State/Prov: IN

Postal Code: 47909

E-mail: jayyoung@purdue.edu

Country: US

Crop Description

Crop 1: GLXMA Glycine max Soybean

Variety: BECK'S 284 LL

Description: Liberty Link

BBCH Scale: BSOY

Planting Date: 5-10-2010

Planting Method: DIRDRI direct drilled

Rate, Unit: 161000 S/A

Depth, Unit: 1 IN

Row Spacing, Unit: 30 IN

Seed Bed: MEDIUM medium

Soil Temperature, Unit: 57 F

Soil Moisture: SLIWET slightly wet

Emergence Date: 5-19-2010

Harvest Date: 11-11-2010

Harvest Equipment: Gleaner F3

Harvested Width, Unit: 10 FT

Harvested Length, Unit: 25 FT

% Standard Moisture: 13.0

Moisture Meter: Carter 3" blade

Weighing Equipment: Carter Double Bucket

Purdue University

Pest Description

- Pest 1 Type:** W **Code:** BROTE *Bromus tectorum*
Common Name: Downy brome
- Pest 2 Type:** W **Code:** SENGL *Senecio glabellus*
Common Name: Cressleaf groundsel
- Pest 3 Type:** W **Code:** ALLVI *Allium vineale*
Common Name: Wild garlic
- Pest 4 Type:** W **Code:** POAAN *Poa annua*
Common Name: Annual bluegrass
- Pest 5 Type:** W **Code:** TAROF *Taraxacum officinale*
Common Name: Common dandelion
- Pest 6 Type:** W **Code:** PLABE *Plantago bellardii*
Common Name: Hairy plantain
- Pest 7 Type:** W **Code:** ERICA *Conyza canadensis*
Common Name: Canada horseweed
- Pest 8 Type:** W **Code:** RANAB *Ranunculus abortivus*
Common Name: Smallflower buttercup
- Pest 9 Type:** W **Code:** BARSS *Barbarea* sp.
Common Name: Yellowrocket
- Pest10 Type:** W **Code:** CERVU *Cerastium fontanum vulgare*
Common Name: Mouse-ear chickweed
- Pest11 Type:** W **Code:** VENSS *Vernonia* sp.
Common Name: Ironweed
- Pest12 Type:** W **Code:** ERIPH *Erigeron philadelphicus*
Common Name: Daisy fleabane
- Pest13 Type:** W **Code:** RUMCR *Rumex crispus*
Common Name: Curly dock
- Pest14 Type:** W **Code:** ALOCA *Alopecurus carolinianus*
Common Name: Carolina foxtail
- Pest15 Type:** W **Code:** CAPBP *Capsella bursa-pastoris*
Common Name: Shepherd's purse
- Pest16 Type:** W **Code:** VERPG *Veronica peregrina*
Common Name: Purslane speedwell
- Pest17 Type:** W **Code:** SETFA *Setaria faberi*
Common Name: Giant foxtail
- Pest18 Type:** W **Code:** DIGSA *Digitaria sanguinalis*
Common Name: Large crabgrass

Site and Design

Plot Width, Unit: 10 FT	Site Type: FIELD field	
Plot Length, Unit: 30 FT	Experimental Unit: 1 PLOT plot	
Plot Area, Unit: 300 FT ²	Tillage Type: NOTILL no-till	
Replications: 4	Study Design: RACOB� Randomized Complete Block (RCB)	
	Untreated Arrangement: INCLUDED	single control randomized in each block

Soil Description

Description Name: SEPAC Field U4-6
% OM: 1.8 **Texture:** SIL silt loam
pH: 5.6 **Soil Name:** Avonburg
CEC: 6.7

Purdue University

Application Description				
	A	B	C	D
Application Date:	4-13-2010	4-29-2010	5-10-2010	6-11-2010
Time of Day:	11:40 AM	10:15 AM	9:40 AM	8:30 AM
Application Method:	SPRAY	SPRAY	SPRAY	SPRAY
Application Timing:	A 30 DPP	14 DPP	ATPLAN	28 DAP
Application Placement:	FOLIAR	FOLIAR	FOLIAR	FOLIAR
Applied By:	RH	RT	RT	RH/RTR
Air Temperature, Unit:	81 F	59 F	53 F	81 F
% Relative Humidity:	35	56	48	61
Wind Velocity, Unit:	1 MPH	3.3 MPH	6 MPH	0.5 MPH
Wind Direction:	SW	S	SE	E
Dew Presence (Y/N):	N no	N no	N no	Y yes
Soil Temperature, Unit:	60 F	50 F	50 F	68 F
Soil Moisture:	MOIST	MOIST	MOIST	MOIST
% Cloud Cover:	10	5	70	10

Crop Stage At Each Application				
	A	B	C	D
Crop 1 Code, BBCH Scale:	GLXMA BSOY	GLXMA BSOY	GLXMA BSOY	GLXMA BSOY
Stage Scale Used:				BBCH
Stage Majority, Percent:				V2 95
Stage Minimum, Percent:				V2 95
Stage Maximum, Percent:				V3 5
Height, Unit:				5 IN
Height Minimum, Maximum:				4 6

Pest Stage At Each Application				
	A	B	C	D
Pest 1 Code, Type, Scale:	BROTE W	BROTE W	BROTE W	BROTE W
Stage Majority, Percent:	40 100			
Height, Unit:	5 IN			
Height Minimum, Maximum:	4 6			
Density, Unit:	3 YD2			
Pest 2 Code, Type, Scale:	SENGL W	SENGL W	SENGL W	SENGL W
Stage Majority, Percent:	55 100	65 100	65 100	
Height, Unit:	6.5 IN	23 IN	24 IN	
Height Minimum, Maximum:	1 12	10 36	8 40	
Density, Unit:	5.5 YD2	52.5 YD2	13.5 YD2	
Pest 3 Code, Type, Scale:	ALLVI W	ALLVI W	ALLVI W	ALLVI W
Stage Majority, Percent:	40 100	40 100		65 100
Height, Unit:	10.5 IN	17 IN		27 IN
Height Minimum, Maximum:	3 18	6 28		18 36
Density, Unit:	15.5 YD2	10.5 YD2		3 YD2
Pest 4 Code, Type, Scale:	POAAN W	POAAN W	POAAN W	POAAN W
Stage Majority, Percent:	65 100	65 100	65 100	
Height, Unit:	2 IN	4 IN	2.5 IN	
Height Minimum, Maximum:	1 3	2 6	1 4	

Purdue University

Density, Unit:	3 YD2	27.5 YD2	5.5 YD2	
Pest 5 Code, Type, Scale:	TAROF W	TAROF W	TAROF W	TAROF W
Stage Majority, Percent:	65 100	65 100	40 100	
Stage Minimum, Percent:				40 50
Stage Maximum, Percent:				65 50
Height, Unit:	4.5 IN	8 IN	4 IN	7.5 IN
Height Minimum, Maximum:	3 6	4 12	2 6	1 12
Density, Unit:	3 YD2	3 YD2	5.5 YD2	10.5 YD2
Pest 6 Code, Type, Scale:	PLABE W	PLABE W	PLABE W	PLABE W
Stage Majority, Percent:	40 100			
Height, Unit:	4 IN			
Height Minimum, Maximum:	4 6			
Density, Unit:	3 YD2			
Pest 7 Code, Type, Scale:	ERICA W	ERICA W	ERICA W	ERICA W
Stage Majority, Percent:	51 100	59 50	45 100	BOLT 100
Height, Unit:	2 IN	4 IN	3.5 IN	9.5 IN
Height Minimum, Maximum:	1 3	2 6	1 6	1 18
Density, Unit:	12.5 YD2	8.5 YD2	3 YD2	13 YD2
Pest 8 Code, Type, Scale:	RANAB W	RANAB W	RANAB W	RANAB W
Stage Majority, Percent:	51 50	65 100	69 50	
Height, Unit:	5.5 IN	8 IN	10.5 IN	
Height Minimum, Maximum:	1 10	4 12	3 18	
Density, Unit:	5.5 YD2	12.5 YD2	3 YD2	
Pest 9 Code, Type, Scale:	BARSS W	BARSS W	BARSS W	BARSS W
Stage Majority, Percent:	65 100			
Height, Unit:	8 IN			
Height Minimum, Maximum:	6 10			
Density, Unit:	0.5 YD2			
Pest10 Code, Type, Scale:	CERVU W	CERVU W	CERVU W	CERVU W
Stage Majority, Percent:	65 100	65 100	65 100	
Height, Unit:	2 IN	4 IN	7.5 IN	
Height Minimum, Maximum:	1 3	2 6	5 10	
Density, Unit:	3 YD2	5.5 YD2	12.5 YD2	
Pest11 Code, Type, Scale:	VENSS W	VENSS W	VENSS W	VENSS W
Stage Majority, Percent:		40 100	40 100	
Height, Unit:		11 IN	14 IN	
Height Minimum, Maximum:		4 18	4 24	
Density, Unit:		13 YD2	3 YD2	
Pest12 Code, Type, Scale:	ERIPH W	ERIPH W	ERIPH W	ERIPH W
Stage Majority, Percent:		65 100	65 100	65 100
Height, Unit:		8 IN	20 IN	23 IN
Height Minimum, Maximum:		4 12	10 30	10 26
Density, Unit:		7 YD2	10.5 YD2	3 YD2
Pest13 Code, Type, Scale:	RUMCR W	RUMCR W	RUMCR W	RUMCR W
Stage Majority, Percent:		40 100		
Height, Unit:		9 IN		
Height Minimum, Maximum:		6 12		
Density, Unit:		1.5 YD2		

Purdue University

Pest14 Code, Type, Scale:	ALOCA W	ALOCA W	ALOCA W	ALOCA W
Stage Majority, Percent:		59 50	65 100	
Height, Unit:		6 IN	7 IN	
Height Minimum, Maximum:		2 10	4 10	
Density, Unit:		75.5 YD2	6.5 YD2	
Pest15 Code, Type, Scale:	CAPBP W	CAPBP W	CAPBP W	CAPBP W
Stage Majority, Percent:		65 100		
Height, Unit:		9 IN		
Height Minimum, Maximum:		6 12		
Density, Unit:		2 YD2		
Pest16 Code, Type, Scale:	VERPG W	VERPG W	VERPG W	VERPG W
Stage Majority, Percent:			40 100	
Height, Unit:			5 IN	
Height Minimum, Maximum:			2 8	
Density, Unit:			15 YD2	
Pest17 Code, Type, Scale:	SETFA W	SETFA W	SETFA W	SETFA W
Stage Majority, Percent:				21 100
Height, Unit:				4 IN
Height Minimum, Maximum:				2 6
Density, Unit:				30 YD2
Pest18 Code, Type, Scale:	DIGSA W	DIGSA W	DIGSA W	DIGSA W
Stage Majority, Percent:				21 100
Height, Unit:				2.5 IN
Height Minimum, Maximum:				1 4
Density, Unit:				25.5 YD2

Application Equipment				
	A	B	C	D
Appl. Equipment:	CO2 BKPK	CO2 BKPK	CO2 BKPK	CO2 BKPK
Equipment Type:	SPRBAC	SPRBAC	SPRBAC	SPRBAC
Operating Pressure, Unit:	17 PSI	17 PSI	17 PSI	17 PSI
Nozzle Type:	FLAT FAN	FLAT FAN	FLAT FAN	FLAT FAN
Nozzle Size:	XR 110 02	XR 110 02	XR 110 02	XR 110 02
Nozzle Spacing, Unit:	15 IN	15 IN	15 IN	15 IN
Nozzles/Row:	8	8	8	8
Boom Length, Unit:	10 FT	10 FT	10 FT	10 FT
Boom Height, Unit:	18 IN	18 IN	18 IN	18 IN
Ground Speed, Unit:	3 MPH	3 MPH	3 MPH	3 MPH
Carrier:	H2O	H2O	H2O	H2O
Water Hardness (ppm CaCO3):	150	150	150	150
Spray Volume, Unit:	15 gal/ac	15 gal/ac	15 gal/ac	15 gal/ac
Mix Size, Unit:	1.8 liters	1.8 liters	1.8 liters	1.8 liters
Propellant:	CO2	CO2	CO2	CO2
Tank Mix (Y/N):	N no	N no	N no	N no

Purdue University

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	SENGL	CERVU	ERIPH	ERICA	ALLVI	SENGL	CERVU
Pest Scientific Name	Senecio glabel>	Cerastium font>	Erigeron phila>	Conyza canad>	Allium vineale	Senecio glabel>	Cerastium font>
Pest Name	Cressleaf grou>	Mouse-ear chic>	Daisy fleabane	Canada horsewe>	Wild garlic	Cressleaf grou>	Mouse-ear chic>
Crop Code	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA
BBCH Scale	BSOY	BSOY	BSOY	BSOY	BSOY	BSOY	BSOY
Crop Scientific Name	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max
Crop Name	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean
Crop Variety	Beck's 284	Beck's 284	Beck's 284	Beck's 284	Beck's 284	Beck's 284	Beck's 284
Description							
Rating Date	5-10-2010	5-10-2010	5-10-2010	5-10-2010	5-10-2010	5-19-2010	5-19-2010
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%	%	%
Number of Subsamples	1	1	1	1	1	1	1
Crop Stage Majority							
Pest Stage Majority	6-24 IN	4-10 IN	6-24 IN	4-12 IN	18-24 IN	6-24"	4-10"
Pest Density, Unit	9 YD2	15 YD2	5 YD2	4 YD2	7.5 YD2	9 YD2	15 YD2
Assessed By	GN/RH	GN/RH	GN/RH	GN/RH	GN/RH	CB/RH	CB/RH

Trt	Treatment	Rate	Appl	1	2	3	4	5	6	7
No.	Name	Rate	Unit	Code						
6	Rage D-TECH	0.38 lb ai/a	B	78.0 b	71.8 b	92.3 a	77.5 a	85.0 a	100.0 a	80.5 b
	Authority First	0.282 lb ai/a	B							
	Sharpen	0.0223 lb ai/a	C							
	MSO	1.04 lb ai/a	C							
	Ignite 280 SL	0.402 lb ae/a	D							
	Cadet	0.00356 lb ai/a	D							
	NIS	0.25 % v/v	D							
	N-Pak AMS	2.5 lb ai/100 gal D								
7	UNTREATED			0.0 c	0.0 c	0.0 b	0.0 b	0.0 b	0.0 b	0.0 c
LSD (P=.05)				13.59	13.48	14.41	14.45	14.05	0.63	6.86
Standard Deviation				9.15	9.07	9.70	9.73	9.46	0.43	4.62
CV				14.7	14.5	14.5	16.01	14.98	0.6	6.85
Bartlett's X2				16.439	8.038	6.672	15.161	6.888	1.752	6.034
P(Bartlett's X2)				0.002*	0.045*	0.083	0.004*	0.142	0.416	0.049*
Replicate F				3.518	1.353	0.235	2.859	3.691	1.761	1.334
Replicate Prob(F)				0.0364	0.2889	0.8707	0.0658	0.0313	0.1906	0.2946
Treatment F				89.376	93.095	89.682	75.655	83.679	51914.743	405.610
Treatment Prob(F)				0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Column 1: Weed or volunteer crop; US; US; Beck's 284; control / burndown or knockdown; percent; 6-24 IN; per square yard; GN/RH
Column 2: Weed or volunteer crop; US; US; Beck's 284; control / burndown or knockdown; percent; 4-10 IN; per square yard; GN/RH
Column 3: Weed or volunteer crop; US; US; Beck's 284; control / burndown or knockdown; percent; 6-24 IN; per square yard; GN/RH
Column 4: Weed or volunteer crop; US; US; Beck's 284; control / burndown or knockdown; percent; 4-12 IN; per square yard; GN/RH
Column 5: Weed or volunteer crop; US; US; Beck's 284; control / burndown or knockdown; percent; 18-24 IN; per square yard; GN/RH
Column 6: Weed or volunteer crop; US; US; Beck's 284; control / burndown or knockdown; percent; 6-24"; per square yard; CB/RH
Column 7: Weed or volunteer crop; US; US; Beck's 284; control / burndown or knockdown; percent; 4-10"; per square yard; CB/RH
Column 8: Weed or volunteer crop; US; US; Beck's 284; control / burndown or knockdown; percent; 6-24"; per square yard; CB/RH
Column 9: Weed or volunteer crop; US; US; Beck's 284; control / burndown or knockdown; percent; 4-12"; per square yard; CB/RH
Column 10: Weed or volunteer crop; US; US; Beck's 284; control / burndown or knockdown; percent; 18-24"; per square yard; CB/RH
Column 11: US; Beck's 284; phytotoxicity - general / injury; percent; VE/VC; CB
Column 12: Weed or volunteer crop; US; US; Beck's 284; control / burndown or knockdown; percent; VE/VC; 1-36"; per square yard; CB
Column 13: Weed or volunteer crop; US; Beck's 284; control / burndown or knockdown; percent; VE/VC; <1-2"; per square yard; CB
Column 14: Weed or volunteer crop; US; US; Beck's 284; control / burndown or knockdown; percent; 3-16"; per square yard
Column 15: Weed or volunteer crop; US; US; Beck's 284; control / burndown or knockdown; percent; 8-12"; per square yard
Column 16: Weed or volunteer crop; US; US; Beck's 284; control / burndown or knockdown; percent; 2-24"; per square yard
Column 17: Weed or volunteer crop; US; US; Beck's 284; control / burndown or knockdown; percent; 36"; per square yard
Column 18: Weed or volunteer crop; US; US; Beck's 284; control / burndown or knockdown; percent
Column 19: Weed or volunteer crop; US; US; Beck's 284; control / burndown or knockdown; percent; V4; 4-36"; per square yard; RH
Column 20: Weed or volunteer crop; US; US; Beck's 284; control / burndown or knockdown; percent; V4; 10"; per square yard; RH
Column 21: Weed or volunteer crop; US; US; Beck's 284; control / burndown or knockdown; percent; V4; 36"; per square yard; RH
Column 22: Weed or volunteer crop; US; US; Beck's 284; control / burndown or knockdown; percent; V4; 1-14"; per square yard; RH
Column 23: Weed or volunteer crop; US; US; Beck's 284; control / burndown or knockdown; percent; V4; 1-14"; per square yard; RH
Column 24: US; Beck's 284; phytotoxicity - general / injury; percent; V5/R1; JR
Column 25: Weed or volunteer crop; US; US; Beck's 284; control / burndown or knockdown; percent; V5/R1; 1-10"; per square yard; JR
Column 26: Weed or volunteer crop; US; US; Beck's 284; control / burndown or knockdown; percent; V5/R1; 6-30"; per square yard; JR
Column 27: Weed or volunteer crop; US; US; Beck's 284; control / burndown or knockdown; percent; V5/R1; 3-12"; per square yard; JR
Column 28: Weed or volunteer crop; US; US; Beck's 284; control / burndown or knockdown; percent; V5/R1; 1-6"; per square yard; JR
Column 29: US; Beck's 284; yield; pound

Purdue University

Pest Type	W Weed	W Weed	W Weed		W Weed	W Weed	W Weed
Pest Code	ERIPH	ERICA	ALLVI		ERICA		ERICA
Pest Scientific Name	Erigeron phila>	Conyza canad>	Allium vineale		Conyza canad>		Conyza canad>
Pest Name	Daisy fleabane	Canada horsewe>	Wild garlic		Canada horsewe>		Canada horsewe>
Crop Code	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA
BBCH Scale	BSOY	BSOY	BSOY	BSOY	BSOY	BSOY	BSOY
Crop Scientific Name	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max
Crop Name	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean
Crop Variety	Beck's 284	Beck's 284	Beck's 284	Beck's 284	Beck's 284	Beck's 284	Beck's 284
Description				2-3"		2-3"	2-3"
Rating Date	5-19-2010	5-19-2010	5-19-2010	5-27-2010	5-27-2010	5-27-2010	6-10-2010
Rating Type	CONTRO	CONTRO	CONTRO	PHYGEN	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%	%	%
Number of Subsamples	1	1	1	1	1	1	1
Crop Stage Majority				VE/VC	VE/VC	VE/VC	
Pest Stage Majority	6-24"	4-12"	18-24"		1-36"	<1-2"	3-16"
Pest Density, Unit	5 YD2	4 YD2	7.5 YD2		26.5YD2	82.5YD2	14 YD2
Assessed By	CB/RH	CB/RH	CB/RH	CB	CB	CB	
Trt No.	8	9	10	11	12	13	14
Treatment Name	6 Rage D-TECH						
Rate	0.38 lb ai/a						
Unit							
Appl Code	B						
Mean	100.0 a	99.8 a	95.0 a	0.0 a	99.0 a	89.8 a	100.0 a
Authority First	0.282 lb ai/a						
Sharpen	0.0223 lb ai/a						
MISO	1.04 lb ai/a						
Ignite 280 SL	0.402 lb ae/a						
Cadet	0.00356 lb ai/a						
NIS	0.25 % v/v						
N-Pak AMS	2.5 lb ai/100 gal D						
7 UNTREATED	0.0 b	0.0 c	0.0 c	0.0 a	0.0 c	0.0 c	0.0 b
LSD (P=.05)	0.28	4.84	27.56	0.00	8.18	24.29	17.58
Standard Deviation	0.19	3.26	18.55	0.00	5.51	16.35	11.83
CV	0.26	4.74	32.39	0.0	8.16	34.17	18.35
Bartlett's X2	0.0	23.404	18.683	0.0	13.992	7.426	6.722
P(Bartlett's X2)	.	0.001*	0.001*	.	0.001*	0.115	0.035*
Replicate F	1.000	1.102	0.547	0.000	1.159	0.588	1.010
Replicate Prob(F)	0.4155	0.3741	0.6565	1.0000	0.3526	0.6308	0.4113
Treatment F	266401.027	839.826	20.688	0.000	284.027	24.564	58.310
Treatment Prob(F)	0.0001	0.0001	0.0001	1.0000	0.0001	0.0001	0.0001

Purdue University

Trt No.	Treatment Name	Rate	Unit	Appl Code	15	16	17	18	19	20
1	UNTREATED				0.0 b	0.0 c	0.0 b	0.0 b	0.0 b	0.0 b
2	Rage D-TECH	0.51 lb ai/a	B		98.8 a	100.0 a	95.0 a	45.0 ab	100.0 a	100.0 a
	Durango DMA	1 lb ae/a	B							
	Spartan	0.125 lb ai/a	B							
	Classic	0.0156 lb ai/a	B							
	N-Pak AMS	2.5 lb ai/100 gal	B							
	Ignite 280 SL	0.402 lb ae/a	D							
	NIS	0.25 % v/v	D							
	N-Pak AMS	2.5 lb ai/100 gal	D							
3	Authority MTZ	0.28 lb ai/a	B		62.5 a	43.8 b	88.8 a	6.3 b	100.0 a	100.0 a
	Gramoxone Inteon	0.69 lb ai/a	B							
	Rage D-TECH	0.51 lb ai/a	B							
	COC	1 % v/v	B							
	N-Pak AMS	2.5 lb ai/100 gal	B							
	Ignite 280 SL	0.402 lb ae/a	D							
	NIS	0.25 % v/v	D							
	N-Pak AMS	2.5 lb ai/100 gal	D							
4	Rage D-TECH	0.51 lb ai/a	B		93.0 a	66.3 ab	100.0 a	35.0 ab	100.0 a	100.0 a
	Durango DMA	1 lb ae/a	B							
	Authority Assist	0.156 lb ai/a	B							
	Sharpen	0.0223 lb ai/a	C							
	MSO	1.04 lb ai/a	C							
	Ignite 280 SL	0.402 lb ae/a	D							
	NIS	0.25 % v/v	D							
	N-Pak AMS	2.5 lb ai/100 gal	D							
5	Rage D-TECH	0.38 lb ai/a	A		65.0 a	95.0 a	100.0 a	6.3 b	100.0 a	100.0 a
	Durango DMA	1 lb ae/a	A							
	Authority Assist	0.156 lb ai/a	A							
	Sharpen	0.0223 lb ai/a	C							
	MSO	1.04 lb ai/a	C							
	Ignite 280 SL	0.402 lb ae/a	D							
	NIS	0.25 % v/v	D							
	N-Pak AMS	2.5 lb ai/100 gal	D							

Purdue University

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	TAROF	XANST	ALLVI	BROSE	ERICA	TAROF
Pest Scientific Name	Taraxacum offi>	Xanthium strum>	Allium vineale	Bromus secalin>	Conyza canaden>	Taraxacum offi>
Pest Name	Common dandel>	Common cockle>	Wild garlic	Cheat	Canada horsewe>	Common dandel>
Crop Code	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA
BBCH Scale	BSOY	BSOY	BSOY	BSOY	BSOY	BSOY
Crop Scientific Name	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max
Crop Name	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean
Crop Variety	Beck's 284	Beck's 284	Beck's 284	Beck's 284	Beck's 284	Beck's 284
Description						
Rating Date	6-10-2010	6-10-2010	6-10-2010	6-10-2010	6-17-2010	6-17-2010
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%	%
Number of Subsamples	1	1	1	1	1	1
Crop Stage Majority					V4	V4
Pest Stage Majority	8-12"	2-24"	36"		4-36"	10"
Pest Density, Unit	0.75YD2	0.25YD2	25 YD2		15 YD2	3 YD2
Assessed By					RH	RH
Trt No.	15	16	17	18	19	20
Treatment Name	6 Rage D-TECH					
Rate	0.38 lb ai/a					
Unit						
Appl Code	B					
Mean	95.0 a	100.0 a	97.5 a	70.0 a	100.0 a	100.0 a
Authority First	0.282 lb ai/a					
Sharpen	0.0223 lb ai/a					
MISO	1.04 lb ai/a					
Ignite 280 SL	0.402 lb ae/a					
Cadet	0.00356 lb ai/a					
NIS	0.25 % v/v					
N-Pak AMS	2.5 lb ai/100 gal					
7 UNTREATED	0.0 b	0.0 c	0.0 b	0.0 b	0.0 b	0.0 b
LSD (P=.05)	36.35	34.92	10.78	33.16	0.00	0.00
Standard Deviation	24.47	23.50	7.26	22.32	0.00	0.00
CV	41.35	40.63	10.56	96.16	0.0	0.0
Bartlett's X2	21.901	5.688	6.497	8.909	0.0	0.0
P(Bartlett's X2)	0.001*	0.058	0.039*	0.063	.	.
Replicate F	0.336	1.926	2.186	1.015	0.000	0.000
Replicate Prob(F)	0.7994	0.1615	0.1249	0.4090	1.0000	1.0000
Treatment F	12.294	14.355	168.593	5.961	0.000	0.000
Treatment Prob(F)	0.0001	0.0001	0.0001	0.0014	1.0000	1.0000

Purdue University

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	ALLVI	ECHCG	SETFA		TAROF	ERICA	ECHCG
Pest Scientific Name	Allium vineale	Echinochloa cr>	Setaria faberi		Taraxacum offi>	Conyza canad>	Echinochloa cr>
Pest Name	Wild garlic	Common barnyar>	Giant foxtail		Common dandel>	Canada horsewe>	Common barnyar>
Crop Code	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA
BBCH Scale	BSOY	BSOY	BSOY	BSOY	BSOY	BSOY	BSOY
Crop Scientific Name	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max	Glycine max
Crop Name	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean
Crop Variety	Beck's 284	Beck's 284	Beck's 284	Beck's 284	Beck's 284	Beck's 284	Beck's 284
Description				10-16"	10-16"	10-16"	10-16"
Rating Date	6-17-2010	6-17-2010	6-17-2010	6-29-2010	6-29-2010	6-29-2010	6-29-2010
Rating Type	CONTRO	CONTRO	CONTRO	PHYGEN	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%	%	%	%	%
Number of Subsamples	1	1	1	1	1	1	1
Crop Stage Majority	V4	V4	V4	V5/R1	V5/R1	V5/R1	V5/R1
Pest Stage Majority	36"	1-14"	1-14"		1-10"	6-30"	3-12"
Pest Density, Unit	10 YD2	42 YD2	42 YD2		3.5 YD2	9 YD2	26.5YD2
Assessed By	RH	RH	RH	JR	JR	JR	JR
Trt No.	21	22	23	24	25	26	27
Treatment Name	6 Rage D-TECH						
Rate	0.38 lb ai/a						
Unit	ai/a						
Appl Code	B						
Mean	100.0 a	93.8 a	93.8 a	0.3 a	100.0 a	100.0 a	40.5 a
Authority First	0.282 lb ai/a						
Sharpen	0.0223 lb ai/a						
MSO	1.04 lb ai/a						
Ignite 280 SL	0.402 lb ae/a						
Cadet	0.00356 lb ai/a						
NIS	0.25 % v/v						
N-Pak AMS	2.5 lb ai/100 gal						
7 UNTREATED	0.0 b	0.0 b	0.0 b	0.0 a	0.0 b	0.0 b	0.0 b
LSD (P=.05)	0.00	16.14	16.14	0.61	0.00	0.00	24.14
Standard Deviation	0.00	10.86	10.86	0.41	0.00	0.00	16.25
CV	0.0	18.21	18.21	163.3	0.0	0.0	65.92
Bartlett's X2	0.0	8.632	8.632	0.141	0.0	0.0	1.983
P(Bartlett's X2)	.	0.071	0.071	0.998	.	.	0.739
Replicate F	0.000	2.513	2.513	2.500	0.000	0.000	0.594
Replicate Prob(F)	1.0000	0.0911	0.0911	0.0923	1.0000	1.0000	0.6269
Treatment F	0.000	57.908	57.908	1.000	0.000	0.000	5.818
Treatment Prob(F)	1.0000	0.0001	0.0001	0.4552	1.0000	1.0000	0.0016

Purdue University

Trt No.	Treatment Name	Rate	Unit	Appl Code	28	29	30	31
1	UNTREATED				0.0 b	10.46556387 a	8.64221182 a	31.9 a
2	Rage D-TECH	0.51 lb ai/a	B		30.0 a	12.77312406 a	8.74396316 a	38.9 a
	Durango DMA	1 lb ae/a	B					
	Spartan	0.125 lb ai/a	B					
	Classic	0.0156 lb ai/a	B					
	N-Pak AMS	2.5 lb ai/100 gal	B					
	Ignite 280 SL	0.402 lb ae/a	D					
	NIS	0.25 % v/v	D					
	N-Pak AMS	2.5 lb ai/100 gal	D					
3	Authority MTZ	0.28 lb ai/a	B		35.0 a	8.77021114 a	8.75224964 a	26.7 a
	Gramoxone Inteon	0.69 lb ai/a	B					
	Rage D-TECH	0.51 lb ai/a	B					
	COC	1 % v/v	B					
	N-Pak AMS	2.5 lb ai/100 gal	B					
	Ignite 280 SL	0.402 lb ae/a	D					
	NIS	0.25 % v/v	D					
	N-Pak AMS	2.5 lb ai/100 gal	D					
4	Rage D-TECH	0.51 lb ai/a	B		40.0 a	9.77934744 a	8.66256991 a	29.8 a
	Durango DMA	1 lb ae/a	B					
	Authority Assist	0.156 lb ai/a	B					
	Sharpen	0.0223 lb ai/a	C					
	MSO	1.04 lb ai/a	C					
	Ignite 280 SL	0.402 lb ae/a	D					
	NIS	0.25 % v/v	D					
	N-Pak AMS	2.5 lb ai/100 gal	D					
5	Rage D-TECH	0.38 lb ai/a	A		21.3 ab	13.64098304 a	8.97832293 a	41.5 a
	Durango DMA	1 lb ae/a	A					
	Authority Assist	0.156 lb ai/a	A					
	Sharpen	0.0223 lb ai/a	C					
	MSO	1.04 lb ai/a	C					
	Ignite 280 SL	0.402 lb ae/a	D					
	NIS	0.25 % v/v	D					
	N-Pak AMS	2.5 lb ai/100 gal	D					

Purdue University

Pest Type	W Weed			
Pest Code	SETFA			
Pest Scientific Name	Setaria faberi			
Pest Name	Giant foxtail			
Crop Code	GLXMA	GLXMA	GLXMA	GLXMA
BBCH Scale	BSOY	BSOY	BSOY	BSOY
Crop Scientific Name	Glycine max	Glycine max	Glycine max	Glycine max
Crop Name	Soybean	Soybean	Soybean	Soybean
Crop Variety	Beck's 284	Beck's 284	Beck's 284	Beck's 284
Description	10-16"			
Rating Date	6-29-2010	11-11-2010	11-11-2010	11-11-2010
Rating Type	CONTRO	YIELD	MOISTURE	YIELD
Rating Unit	%	LB	%	BU
Number of Subsamples	1	1	1	1
Crop Stage Majority	V5/R1			
Pest Stage Majority	1-6"			
Pest Density, Unit	16 YD2			
Assessed By	JR			
Trt No.	Treatment Name	Rate	Appl Code	
		Rate Unit		
6	Rage D-TECH	0.38 lb ai/a	B	32.5 a
	Authority First	0.282 lb ai/a	B	
	Sharpen	0.0223 lb ai/a	C	
	MISO	1.04 lb ai/a	C	
	Ignite 280 SL	0.402 lb ae/a	D	
	Cadet	0.00356 lb ai/a	D	
	NIS	0.25 % v/v	D	
	N-Pak AMS	2.5 lb ai/100 gal	D	
7	UNTREATED			0.0 b
				12.16091659 a
				8.89679712 a
				37.0 a
LSD (P=.05)	20.00	5.865094295	0.647544389	17.79
Standard Deviation	13.46	3.931041157	0.434012397	11.92
CV	59.36	36.23	4.97	36.09
Bartlett's X2	4.38	6.115	5.56	6.042
P(Bartlett's X2)	0.357	0.41	0.474	0.419
Replicate F	2.816	1.148	0.703	1.141
Replicate Prob(F)	0.0685	0.3582	0.5630	0.3607
Treatment F	6.005	1.078	0.698	1.077
Treatment Prob(F)	0.0014	0.4135	0.6547	0.4143

Purdue University

Column 30: US; Beck's 284; MOISTURE; percent
Column 31: US; Beck's 284; yield; bushel
