

Purdue Weed Science

Marestail and Waterhemp control with Enlist System

Trial ID: 18S-MGS-Soy-02 Location: Meigs Trial Year: 2018
 Protocol ID: 18S-MGS-Soy-02 Investigator: Dr. Bill Johnson
 Project ID: NA18P2E002 E3 Purdue Study Director: Taylor Campbell
 Sponsor Contact: Corteva-Kevin Johnson

General Trial Information

Study Director: Taylor Campbell
Investigator: Dr. Bill Johnson

Discipline: H herbicide
Trial Status: E established

Trial Location

City: Lafayette **Country:** USA United States
State/Prov.: Indiana
Postal Code: 47909

Conducted Under GLP: No
Conducted Under GEP: No

Contacts

Study Director: Taylor Campbell
Organization: Purdue University
Address: 915 W State Street
City+State/Prov: West Lafayette, IN
Postal Code: 47907
Country: USA United States

Investigator: Dr. Bill Johnson
Organization: Purdue University
Address: 915 W State Street
City+State/Prov: West Lafayette, IN
Postal Code: 47907
Country: USA United States

Cooperator/Landowner

Cooperator: Jay Young **Role:** Superintendent
Organization: Purdue University
Address 1: 8343 US 231 S
City: Lafayette **Phone No.:** 765-538-3422
State/Prov: IN **Fax No.:** 765-538-3423
Postal Code: 47909
Country: USA United States **E-mail:** jayyoung@purdue.edu

Crop Description

Crop 1: GLXMA Glycine max Soybean
Description: Enlist

Planting Date: 5/18/2018
Planting Method: PLANTD planted
Planting Equipment: PP plot planter
Emergence Date: 5/22/2018

Planting Rate, Unit: 135000 S/A
Depth, Unit: 1 IN
Row Spacing, Unit: 30 IN
Rows per Plot: 4
Soil Temperature, Unit: 80 F
Soil Moisture: DRY dry
Seed Bed: FINTRA fine/trashy

Pest Description

Pest 1 Type: W **Code:** ERICA Erigeron canadensis
Common Name: Canada horseweed

Pest 2 Type: W **Code:** AMATA Amaranthus tamariscinus
Common Name: Common waterhemp

Pest 3 Type: W **Code:** PANDI Panicum dichotomiflorum
Common Name: Fall panicum

Site and Design

Treated Plot Width: 6.67 FT
Treated Plot Length: 30 FT
Treated Plot Area: 200.1 FT2 **Treatments:** 21
Replications: 4

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

Soil Description

Description Name: MGS-S5

% Sand: 40.7	% OM: 2.3	Texture: L	loam
% Silt: 38.6	pH: 6.5	Soil Name:	Starks-Fincastle complex
% Clay: 20.7	CEC: 14.3	Fert. Level:	G good

Purdue Weed Science

Marestail and Waterhemp control with Enlist System

Trial ID: 18S-MGS-Soy-02	Location: Meigs	Trial Year: 2018
Protocol ID: 18S-MGS-Soy-02	Investigator: Dr. Bill Johnson	
Project ID: NA18P2E002 E3 Purdue	Study Director: Taylor Campbell	
	Sponsor Contact: Corteva-Kevin Johnson	

Application Description

	A	B
Application Date:	5/18/2018	6/28/2018
Appl. Start Time:	2:17 PM	1:12 PM
Appl. Stop Time:	3:05 PM	2:01 PM
Application Method:	SPRAY	SPRAY
Application Timing:	ATPLAN	POSPOS
Application Placement:	BROADC	BROADC
Applied By:	T. Campbell	T. Campbell
Air Temperature, Unit:	87 F	92 F
% Relative Humidity:	30	75
Wind Velocity, Unit:	7 MPH	3 MPH
Wind Direction:	SW	W
Dew Presence (Y/N):	N no	N no
Soil Temperature, Unit:	80 F	90 F
Soil Moisture:	DRY	SLIWET
% Cloud Cover:	50	20

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	15 60
Stage Minimum, Percent:		15 60
Stage Maximum, Percent:		16 40
Average Diameter, Unit:		8 IN
Height, Unit:		12 IN
Height Minimum, Maximum:		10 14

Purdue Weed Science

Marestail and Waterhemp control with Enlist System

Trial ID: 18S-MGS-Soy-02 Location: Meigs Trial Year: 2018
 Protocol ID: 18S-MGS-Soy-02 Investigator: Dr. Bill Johnson
 Project ID: NA18P2E002 E3 Purdue Study Director: Taylor Campbell
 Sponsor Contact: Corteva-Kevin Johnson

Pest Stage At Each Application

	A	B
Pest 1 Code, Type, Scale:	ERICA W	ERICA W
Stage Majority, Percent:	19 50	16 60
Stage Minimum, Percent:	10 20	12 20
Stage Maximum, Percent:	30 30	23 20
Diameter, Unit:	6 IN	5 IN
Height, Unit:	5 IN	4 IN
Height Minimum, Maximum:	1 10	1 12
Density, Unit:	5 FT2	4 FT2
Pest 2 Code, Type, Scale:	AMATA W	AMATA W
Stage Majority, Percent:		15 50
Stage Minimum, Percent:		13 30
Stage Maximum, Percent:		17 20
Diameter, Unit:		2 IN
Height, Unit:		2 IN
Height Minimum, Maximum:		1 4
Density, Unit:		2 FT2
Pest 3 Code, Type, Scale:	PANDI W	PANDI W
Stage Majority, Percent:		14 50
Stage Minimum, Percent:		12 30
Stage Maximum, Percent:		16 20
Diameter, Unit:		2 IN
Height, Unit:		3 IN
Height Minimum, Maximum:		1 5
Density, Unit:		2 FT2

Application Equipment

	A	B
Appl. Equipment:	CO2 BACKPACK	CO2 BACKPACK
Equipment Type:	BACCAI	BACCAI
Operation Pressure, Unit:	44 PSI	43 PSI
Nozzle Type:	AIXR	AIXR
Nozzle Size:	11015	11015
Nozzle Spacing, Unit:	20 IN	20 IN
Nozzles/Row:	4	4
Boom Length, Unit:	6.7 FT	6.7 FT
Boom Height, Unit:	30 IN	35 IN
Ground Speed, Unit:	3 MPH	3 MPH
Carrier:	WATER	WATER
Spray Volume, Unit:	15 GAL/AC	15 GAL/AC
Mix Overage, Unit:	0 mL	0 mL
Mix Size, Unit:	1119 mL	1119 mL
Propellant:	COMCO2	COMCO2

Purdue Weed Science

Marestail and Waterhemp control with Enlist System

Trial ID: 18S-MGS-Soy-02 Location: Meigs Trial Year: 2018
 Protocol ID: 18S-MGS-Soy-02 Investigator: Dr. Bill Johnson
 Project ID: NA18P2E002 E3 Pudue Study Director: Taylor Campbell
 Sponsor Contact: Corteva-Kevin Johnson

Reps: 4 Appl Code: A Plots: 6.67 by 30 feet
 Spray vol: 15 GAL/AC Mix Size: 1119 mL (total for 4 plots; minimum=1043.3 mL)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Appl Unit	Appl Code	Amt Product to Measure	Rep			
									1	2	3	4
2	ENLIST DUO	3.34	LBAE/GAL	SL	1.95 lb ae/a	A	A	43.55 mL/mx	102	309	504	611
	SONIC	70 %		WG	4.5 oz/a	A	A	2.514 g/mx				
	N-PAK	3.4	LBA/GAL	L	5 % v/v	A	A	55.94 mL/mx				
3	ENLIST DUO	3.34	LBAE/GAL	SL	1.95 lb ae/a	A	A	43.55 mL/mx	103	313	409	614
	SONIC	70 %		WG	4.5 oz/a	A	A	2.514 g/mx				
	N-PAK	3.4	LBA/GAL	L	5 % v/v	A	A	55.94 mL/mx				
4	ENLIST DUO	3.34	LBAE/GAL	SL	1.95 lb ae/a	A	A	43.55 mL/mx	104	213	507	612
	SONIC	70 %		WG	4.5 oz/a	A	A	2.514 g/mx				
	N-PAK	3.4	LBA/GAL	L	5 % v/v	A	A	55.94 mL/mx				
5	ENLIST DUO	3.34	LBAE/GAL	SL	1.95 lb ae/a	A	A	43.55 mL/mx	105	214	406	603
	SONIC	70 %		WG	4.5 oz/a	A	A	2.514 g/mx				
	N-PAK	3.4	LBA/GAL	L	5 % v/v	A	A	55.94 mL/mx				
6	ENLIST DUO	3.34	LBAE/GAL	SL	1.95 lb ae/a	A	A	43.55 mL/mx	106	310	502	606
	SONIC	70 %		WG	4.5 oz/a	A	A	2.514 g/mx				
	N-PAK	3.4	LBA/GAL	L	5 % v/v	A	A	55.94 mL/mx				
7	ENLIST DUO	3.34	LBAE/GAL	SL	1.95 lb ae/a	A	A	43.55 mL/mx	107	302	401	602
	SONIC	70 %		WG	4.5 oz/a	A	A	2.514 g/mx				
	TRICOR	75 %		DF	6 oz/a	A	A	3.352 g/mx				
8	N-PAK	3.4	LBA/GAL	L	5 % v/v	A	A	55.94 mL/mx				
	GRAMOXONE SL	2	LBAE/GAL	SL	4 pt/a	A	A	37.3 mL/mx	108	304	503	604
	2,4-D CHOLINE SALT	3.8	LBAE/GAL	SL	0.95 lb ae/a	A	A	18.65 mL/mx				
9	SONIC	70 %		WG	4.5 oz/a	A	A	2.514 g/mx				
	TRICOR	75 %		DF	6 oz/a	A	A	3.352 g/mx				
	N-PAK	3.4	LBA/GAL	L	5 % v/v	A	A	55.94 mL/mx				
10	GRAMOXONE SL	2	LBAE/GAL	SL	4 pt/a	A	A	37.3 mL/mx	109	208	402	613
	2,4-D CHOLINE SALT	3.8	LBAE/GAL	SL	0.95 lb ae/a	A	A	18.65 mL/mx				
	SONIC	70 %		WG	4.5 oz/a	A	A	2.514 g/mx				
11	N-PAK	3.4	LBA/GAL	L	5 % v/v	A	A	55.94 mL/mx				
	GRAMOXONE SL	2	LBAE/GAL	SL	4 pt/a	A	A	37.3 mL/mx	110	305	506	601
	2,4-D CHOLINE SALT	3.8	LBAE/GAL	SL	0.95 lb ae/a	A	A	18.65 mL/mx				
12	SONIC	70 %		WG	4.5 oz/a	A	A	2.514 g/mx				
	N-PAK	3.4	LBA/GAL	L	5 % v/v	A	A	55.94 mL/mx				
	GRAMOXONE SL	2	LBAE/GAL	SL	4 pt/a	A	A	37.3 mL/mx	111	301	501	514
13	2,4-D CHOLINE SALT	3.8	LBAE/GAL	SL	0.95 lb ae/a	A	A	18.65 mL/mx				
	SONIC	70 %		WG	4.5 oz/a	A	A	2.514 g/mx				
	N-PAK	3.4	LBA/GAL	L	5 % v/v	A	A	55.94 mL/mx				
14	GRAMOXONE SL	2	LBAE/GAL	SL	4 pt/a	A	A	37.3 mL/mx	112	209	414	605
	2,4-D CHOLINE SALT	3.8	LBAE/GAL	SL	0.95 lb ae/a	A	A	18.65 mL/mx				
	SONIC	70 %		WG	4.5 oz/a	A	A	2.514 g/mx				
15	N-PAK	3.4	LBA/GAL	L	5 % v/v	A	A	55.94 mL/mx				
	ZIDUA PRO	4.09	LB/GAL	SC	6 oz/a	A	A	3.497 mL/mx	114	314	410	608
	TRICOR	75 %		DF	6 oz/a	A	A	3.352 g/mx				
16	DURANGO DMA	4	LBAE/GAL	SL	32 fl oz/a	A	A	18.65 mL/mx				
	N-PAK	3.4	LBA/GAL	L	5 % v/v	A	A	55.94 mL/mx				
	ZIDUA PRO	4.09	LB/GAL	SC	6 oz/a	A	A	3.497 mL/mx	201	303	405	509
17	TRICOR	75 %		DF	6 oz/a	A	A	3.352 g/mx				
	DURANGO DMA	4	LBAE/GAL	SL	32 fl oz/a	A	A	18.65 mL/mx				
	N-PAK	3.4	LBA/GAL	L	5 % v/v	A	A	55.94 mL/mx				

Purdue Weed Science

Marestail and Waterhemp control with Enlist System

Trial ID: 18S-MGS-Soy-02 Location: Meigs Trial Year: 2018
 Protocol ID: 18S-MGS-Soy-02 Investigator: Dr. Bill Johnson
 Project ID: NA18P2E002 E3 Purdue Study Director: Taylor Campbell
 Sponsor Contact: Corteva-Kevin Johnson

Reps: 4 Appl Code: A Plots: 6.67 by 30 feet
 Spray vol: 15 GAL/AC Mix Size: 1119 mL (total for 4 plots; minimum=1043.3 mL)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Appl Code	Amt Product to Measure	Rep			
								1	2	3	4
16	ZIDUA PRO	4.09	LB/GAL	SC	6 oz/a	A	3.497 mL/mx	202	307	413	511
	TRICOR	75 %		DF	6 oz/a	A	3.352 g/mx				
	DURANGO DMA	4	LBAE/GAL	SL	32 fl oz/a	A	18.65 mL/mx				
	N-PAK	3.4	LBA/GAL	L	5 % v/v	A	55.94 mL/mx				
17	ZIDUA PRO	4.09	LB/GAL	SC	6 oz/a	A	3.497 mL/mx	203	308	412	508
	TRICOR	75 %		DF	6 oz/a	A	3.352 g/mx				
	DURANGO DMA	4	LBAE/GAL	SL	32 fl oz/a	A	18.65 mL/mx				
	N-PAK	3.4	LBA/GAL	L	5 % v/v	A	55.94 mL/mx				
18	ZIDUA PRO	4.09	LB/GAL	SC	6 oz/a	A	3.497 mL/mx	204	210	408	610
	TRICOR	75 %		DF	6 oz/a	A	3.352 g/mx				
	DURANGO DMA	4	LBAE/GAL	SL	32 fl oz/a	A	18.65 mL/mx				
	N-PAK	3.4	LBA/GAL	L	5 % v/v	A	55.94 mL/mx				
19	INTERLINE	2.34	LBA/GAL	L	29 fl oz/a	A	16.9 mL/mx	205	311	403	512
	2,4-D CHOLINE SALT	3.8	LBAE/GAL	SL	0.95 lb ae/a	A	18.65 mL/mx				
	SONIC	70 %		WG	4.5 oz/a	A	2.514 g/mx				
	TRICOR	75 %		DF	6 oz/a	A	3.352 g/mx				
	N-PAK	3.4	LBA/GAL	L	5 % v/v	A	55.94 mL/mx				
20	INTERLINE	2.34	LBA/GAL	L	29 fl oz/a	A	16.9 mL/mx	206	212	411	609
	2,4-D CHOLINE SALT	3.8	LBAE/GAL	SL	0.95 lb ae/a	A	18.65 mL/mx				
	SONIC	70 %		WG	4.5 oz/a	A	2.514 g/mx				
	N-PAK	3.4	LBA/GAL	L	5 % v/v	A	55.94 mL/mx				
21	INTERLINE	2.34	LBA/GAL	L	29 fl oz/a	A	16.9 mL/mx	207	306	404	513
	2,4-D CHOLINE SALT	3.8	LBAE/GAL	SL	0.95 lb ae/a	A	18.65 mL/mx				
	SONIC	70 %		WG	4.5 oz/a	A	2.514 g/mx				
	N-PAK	3.4	LBA/GAL	L	5 % v/v	A	55.94 mL/mx				

Purdue Weed Science

Marestail and Waterhemp control with Enlist System

Trial ID: 18S-MGS-Soy-02 Location: Meigs Trial Year: 2018
 Protocol ID: 18S-MGS-Soy-02 Investigator: Dr. Bill Johnson
 Project ID: NA18P2E002 E3 Purdue Study Director: Taylor Campbell
 Sponsor Contact: Corteva-Kevin Johnson

Reps: 4 Appl Code: B Plots: 6.67 by 30 feet
 Spray vol: 15 GAL/AC Mix Size: 1119 mL (total for 4 plots; minimum=1043.3 mL)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Appl Unit	Appl Code	Amt Product to Measure	Rep			
									1	2	3	4
2	ENLIST DUO N-PAK	3.34 3.4	LBAE/GAL LBA/GAL	SL L	1.95 lb 5 %	ae/a v/v	B B	43.55 mL/mx 55.94 mL/mx	102	309	504	611
3	2,4-D CHOLINE SALT INTERLINE N-PAK	3.8 2.34 3.4	LBAE/GAL LBA/GAL LBA/GAL	SL L L	0.95 lb 29 fl 5 %	ae/a oz/a v/v	B B B	18.65 mL/mx 16.9 mL/mx 55.94 mL/mx	103	313	409	614
4	INTERLINE N-PAK	2.34 3.4	LBA/GAL LBA/GAL	L L	29 fl 5 %	oz/a v/v	B B	16.9 mL/mx 55.94 mL/mx	104	213	507	612
5	DURANGO DMA N-PAK	4 3.4	LBAE/GAL LBA/GAL	SL L	32 fl 5 %	oz/a v/v	B B	18.65 mL/mx 55.94 mL/mx	105	214	406	603
6	DURANGO DMA FLEXSTAR N-PAK MSO	4 1.88 3.4 100 %	LBAE/GAL LB/GAL LBA/GAL %	SL L L SL	32 fl 20 fl 5 % 1 %	oz/a oz/a v/v v/v	B B B B	18.65 mL/mx 11.66 mL/mx 55.94 mL/mx 11.19 mL/mx	106	310	502	606
7	DURANGO DMA N-PAK	4 3.4	LBAE/GAL LBA/GAL	SL L	32 fl 5 %	oz/a v/v	B B	18.65 mL/mx 55.94 mL/mx	107	302	401	602
8	DURANGO DMA N-PAK	4 3.4	LBAE/GAL LBA/GAL	SL L	32 fl 5 %	oz/a v/v	B B	18.65 mL/mx 55.94 mL/mx	108	304	503	604
9	ENLIST DUO N-PAK	3.34 3.4	LBAE/GAL LBA/GAL	SL L	1.95 lb 5 %	ae/a v/v	B B	43.55 mL/mx 55.94 mL/mx	109	208	402	613
10	INTERLINE N-PAK	2.34 3.4	LBA/GAL LBA/GAL	L L	29 fl 5 %	oz/a v/v	B B	16.9 mL/mx 55.94 mL/mx	110	305	506	601
11	INTERLINE 2,4-D CHOLINE SALT N-PAK	2.34 3.8 3.4	LBA/GAL LBAE/GAL LBA/GAL	L SL L	29 fl 0.95 lb 5 %	oz/a ae/a v/v	B B B	16.9 mL/mx 18.65 mL/mx 55.94 mL/mx	111	301	501	514
12	DURANGO DMA N-PAK	4 3.4	LBAE/GAL LBA/GAL	SL L	32 fl 5 %	oz/a v/v	B B	18.65 mL/mx 55.94 mL/mx	112	209	414	605
13	DURANGO DMA FLEXSTAR N-PAK MSO	4 1.88 3.4 100 %	LBAE/GAL LB/GAL LBA/GAL %	SL L L SL	32 fl 20 fl 5 % 1 %	oz/a oz/a v/v v/v	B B B B	18.65 mL/mx 11.66 mL/mx 55.94 mL/mx 11.19 mL/mx	113	312	407	607
14	ENLIST DUO N-PAK	3.34 3.4	LBAE/GAL LBA/GAL	SL L	1.95 lb 5 %	ae/a v/v	B B	43.55 mL/mx 55.94 mL/mx	114	314	410	608
15	INTERLINE N-PAK	2.34 3.4	LBA/GAL LBA/GAL	L L	29 fl 5 %	oz/a v/v	B B	16.9 mL/mx 55.94 mL/mx	201	303	405	509
16	INTERLINE 2,4-D CHOLINE SALT N-PAK	2.34 3.8 3.4	LBA/GAL LBAE/GAL LBA/GAL	L SL L	29 fl 0.95 lb 5 %	oz/a ae/a v/v	B B B	16.9 mL/mx 18.65 mL/mx 55.94 mL/mx	202	307	413	511
17	DURANGO DMA N-PAK	4 3.4	LBAE/GAL LBA/GAL	SL L	32 fl 5 %	oz/a v/v	B B	18.65 mL/mx 55.94 mL/mx	203	308	412	508
18	DURANGO DMA FLEXSTAR N-PAK	4 1.88 3.4	LBAE/GAL LB/GAL LBA/GAL	SL L L	32 fl 20 fl 5 %	oz/a oz/a v/v	B B B	18.65 mL/mx 11.66 mL/mx 55.94 mL/mx	204	210	408	610
19	DURANGO DMA N-PAK	4 3.4	LBAE/GAL LBA/GAL	SL L	32 fl 5 %	oz/a v/v	B B	18.65 mL/mx 55.94 mL/mx	205	311	403	512
20	ENLIST DUO N-PAK	3.34 3.4	LBAE/GAL LBA/GAL	SL L	1.95 lb 5 %	ae/a v/v	B B	43.55 mL/mx 55.94 mL/mx	206	212	411	609
21	DURANGO DMA N-PAK	4 3.4	LBAE/GAL LBA/GAL	SL L	32 fl 5 %	oz/a v/v	B B	18.65 mL/mx 55.94 mL/mx	207	306	404	513

Purdue Weed Science

Marestail and Waterhemp control with Enlist System

Trial ID: 18S-MGS-Soy-02	Location: Meigs	Trial Year: 2018
Protocol ID: 18S-MGS-Soy-02	Investigator: Dr. Bill Johnson	
Project ID: NA18P2E002 E3 Purdue	Study Director: Taylor Campbell	
	Sponsor Contact: Corteva-Kevin Johnson	

Reps: 4 Appl Code: _ Plots: 6.67 by 30 feet
 Spray vol: 15 GAL/AC Mix Size: 1119 mL (total for 4 plots; minimum=1043.3 mL)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Appl Unit	Code	Amt Product to Measure	Rep				
									1	2	3	4	
1	UNTREATED							101	211	505	510		

Sort Order: Application Code, Replicate 1

Product quantities required for listed treatments and applications of trials included in this table:

Amount*	Unit	Treatment Name	Form Conc	Form Unit	Form Type	Lot Code
544.365	mL	ENLIST DUO	3.34	LBAE/GAL	SL	
47.139	g	SONIC	70	%	WG	
2,797.197	mL	N-PAK	3.4	LBA/GAL	L	
279.720	mL	2,4-D CHOLINE SALT	3.8	LBAE/GAL	SL	
190.142	mL	INTERLINE	2.34	LBA/GAL	L	
349.687	mL	DURANGO DMA	4	LBAE/GAL	SL	
43.711	mL	FLEXSTAR	1.88	LB/GAL	L	
27.972	mL	MSO	100	%	SL	
33.521	g	TRICOR	75	%	DF	
279.750	mL	GRAMOXONE SL	2	LBAE/GAL	SL	
21.855	mL	ZIDUA PRO	4.09	LB/GAL	SC	

* 'Per area' calculations based on spray volume= 15 GAL/AC, mix size= 1119 mL (mix size basis).

* Product amount calculations increased 25 % for overage adjustment.

* 'Per volume' calculations use spray volume= 15 GAL/AC, mix size= 1119 mL.

Purdue Weed Science

Marestail and Waterhemp control with Enlist System

Trial ID: 18S-MGS-Soy-02 Location: Meigs Trial Year: 2018
 Protocol ID: 18S-MGS-Soy-02 Investigator: Dr. Bill Johnson
 Project ID: NA18P2E002 E3 Purdue Study Director: Taylor Campbell
 Sponsor Contact: Corteva-Kevin Johnson

Pest Type	W Weed AMATA	W Weed ERICA	W Weed PANDI	W Weed ERICA	W Weed AMATA
Pest Code	Common waterhe>	Canada horsewe>	Fall panicum	Canada horsewe>	Common waterhe>
Pest Name					
Part Rated	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P
Rating Date	6/26/2018	6/26/2018	6/26/2018	6/26/2018	6/26/2018
Rating Type	COUNT	COUNT	COUNT	CONTRO	CONTRO
Rating Unit	1/2 m2	1/2 m2	1/2 m2	%	%
Number of Subsamples	2	2	2	1	1
Assessed By	T. Campbell	T. Campbell	T. Campbell	T. Campbell	T. Campbell
Days After First/Last Applic.	39 39	39 39	39 39	39 39	39 39
Days After Emergence	35 DE-1	35 DE-1	35 DE-1	35 DE-1	35 DE-1
ARM Action Codes				P	P
Number of Decimals	0	0	0	0	0
Trt Treatment	Rate	Appl			
No. Name	Rate Unit	Code	1	2	3
1 UNTREATED			0	16	4
2 ENLIST DUO	1.95 lb ae/a A		0 -	0 e	2 -
SONIC	4.5 oz/a A				
N-PAK	5 % v/v A				
ENLIST DUO	1.95 lb ae/a B				96 a
N-PAK	5 % v/v B				99 a
3 ENLIST DUO	1.95 lb ae/a A		0 -	1 cde	3 -
SONIC	4.5 oz/a A				
N-PAK	5 % v/v A				
2,4-D CHOLINE SALT	0.95 lb ae/a B				96 a
INTERLINE	29 fl oz/a B				
N-PAK	5 % v/v B				96 a
4 ENLIST DUO	1.95 lb ae/a A		0 -	0 e	1 -
SONIC	4.5 oz/a A				
N-PAK	5 % v/v A				
INTERLINE	29 fl oz/a B				100 a
N-PAK	5 % v/v B				99 a
5 ENLIST DUO	1.95 lb ae/a A		0 -	0 de	4 -
SONIC	4.5 oz/a A				
N-PAK	5 % v/v A				
DURANGO DMA	32 fl oz/a B				96 a
N-PAK	5 % v/v B				98 a
6 ENLIST DUO	1.95 lb ae/a A		1 -	0 de	1 -
SONIC	4.5 oz/a A				
N-PAK	5 % v/v A				
DURANGO DMA	32 fl oz/a B				96 a
FLEXSTAR	20 fl oz/a B				
N-PAK	5 % v/v B				
MSO	1 % v/v B				95 a
7 ENLIST DUO	1.95 lb ae/a A		1 -	1 cde	3 -
SONIC	4.5 oz/a A				
TRICOR	6 oz/a A				
N-PAK	5 % v/v A				
DURANGO DMA	32 fl oz/a B				98 a
N-PAK	5 % v/v B				97 a
8 GRAMOXONE SL	4 pt/a A		0 -	0 e	2 -
2,4-D CHOLINE SALT	0.95 lb ae/a A				
SONIC	4.5 oz/a A				
TRICOR	6 oz/a A				
N-PAK	5 % v/v A				
DURANGO DMA	32 fl oz/a B				95 a
N-PAK	5 % v/v B				99 a
9 GRAMOXONE SL	4 pt/a A		0 -	0 e	0 -
2,4-D CHOLINE SALT	0.95 lb ae/a A				
SONIC	4.5 oz/a A				
N-PAK	5 % v/v A				
ENLIST DUO	1.95 lb ae/a B				97 a
N-PAK	5 % v/v B				98 a

Means followed by same letter or symbol do not significantly differ (P=.05, LSD)
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
 Untreated treatment(s) 1 excluded from analysis.
 Could not calculate LSD (% mean diff) for columns 18 because error mean square = 0.

Purdue Weed Science

Marestail and Waterhemp control with Enlist System

Trial ID: 18S-MGS-Soy-02 Location: Meigs Trial Year: 2018
 Protocol ID: 18S-MGS-Soy-02 Investigator: Dr. Bill Johnson
 Project ID: NA18P2E002 E3 Purdue Study Director: Taylor Campbell
 Sponsor Contact: Corteva-Kevin Johnson

Pest Type	W Weed AMATA	W Weed ERICA	W Weed PANDI	W Weed ERICA	W Weed AMATA
Pest Code	Common waterhe>	Canada horsewe>	Fall panicum	Canada horsewe>	Common waterhe>
Pest Name					
Part Rated	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P
Rating Date	6/26/2018	6/26/2018	6/26/2018	6/26/2018	6/26/2018
Rating Type	COUNT	COUNT	COUNT	CONTRO	CONTRO
Rating Unit	1/2 m2	1/2 m2	1/2 m2	%	%
Number of Subsamples	2	2	2	1	1
Assessed By	T. Campbell	T. Campbell	T. Campbell	T. Campbell	T. Campbell
Days After First/Last Applic.	39 39	39 39	39 39	39 39	39 39
Days After Emergence	35 DE-1	35 DE-1	35 DE-1	35 DE-1	35 DE-1
ARM Action Codes				P	P
Number of Decimals	0	0	0	0	0
Trt Treatment	Rate	Appl			
No. Name	Rate Unit	Code	1	2	3
10 GRAMOXONE SL	4 pt/a	A	1 -	0 de	1 -
2,4-D CHOLINE SALT	0.95 lb ae/a	A			95 a
SONIC	4.5 oz/a	A			
N-PAK	5 % v/v	A			
INTERLINE	29 fl oz/a	B			
N-PAK	5 % v/v	B			98 a
11 GRAMOXONE SL	4 pt/a	A	2 -	0 de	4 -
2,4-D CHOLINE SALT	0.95 lb ae/a	A			97 a
SONIC	4.5 oz/a	A			
N-PAK	5 % v/v	A			
INTERLINE	29 fl oz/a	B			
2,4-D CHOLINE SALT	0.95 lb ae/a	B			
N-PAK	5 % v/v	B			90 b
12 GRAMOXONE SL	4 pt/a	A	0 -	0 de	4 -
2,4-D CHOLINE SALT	0.95 lb ae/a	A			97 a
SONIC	4.5 oz/a	A			
N-PAK	5 % v/v	A			
DURANGO DMA	32 fl oz/a	B			
N-PAK	5 % v/v	B			100 a
13 GRAMOXONE SL	4 pt/a	A	0 -	0 e	2 -
2,4-D CHOLINE SALT	0.95 lb ae/a	A			96 a
SONIC	4.5 oz/a	A			
N-PAK	5 % v/v	A			
DURANGO DMA	32 fl oz/a	B			
FLEXSTAR	20 fl oz/a	B			
N-PAK	5 % v/v	B			
MSO	1 % v/v	B			100 a
14 ZIDUA PRO	6 oz/a	A	0 -	2 bcd	0 -
TRICOR	6 oz/a	A			83 b
DURANGO DMA	32 fl oz/a	A			
N-PAK	5 % v/v	A			
ENLIST DUO	1.95 lb ae/a	B			
N-PAK	5 % v/v	B			100 a
15 ZIDUA PRO	6 oz/a	A	1 -	2 bc	0 -
TRICOR	6 oz/a	A			77 b
DURANGO DMA	32 fl oz/a	A			
N-PAK	5 % v/v	A			
INTERLINE	29 fl oz/a	B			
N-PAK	5 % v/v	B			100 a
16 ZIDUA PRO	6 oz/a	A	0 -	2 bcd	0 -
TRICOR	6 oz/a	A			76 b
DURANGO DMA	32 fl oz/a	A			
N-PAK	5 % v/v	A			
INTERLINE	29 fl oz/a	B			
2,4-D CHOLINE SALT	0.95 lb ae/a	B			
N-PAK	5 % v/v	B			100 a

Means followed by same letter or symbol do not significantly differ (P=.05, LSD)
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
 Untreated treatment(s) 1 excluded from analysis.
 Could not calculate LSD (% mean diff) for columns 18 because error mean square = 0.

Purdue Weed Science

Marestail and Waterhemp control with Enlist System

Trial ID: 18S-MGS-Soy-02	Location: Meigs	Trial Year: 2018
Protocol ID: 18S-MGS-Soy-02	Investigator: Dr. Bill Johnson	
Project ID: NA18P2E002 E3 Purdue	Study Director: Taylor Campbell	
Sponsor Contact: Corteva-Kevin Johnson		

Pest Type Pest Code Pest Name	W Weed AMATA Common waterhe>	W Weed ERICA Canada horsewe>	W Weed PANDI Fall panicum	W Weed ERICA Canada horsewe>	W Weed AMATA Common waterhe>		
Part Rated	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P		
Rating Date	6/26/2018	6/26/2018	6/26/2018	6/26/2018	6/26/2018		
Rating Type	COUNT	COUNT	COUNT	CONTRO	CONTRO		
Rating Unit	1/2 m2	1/2 m2	1/2 m2	%	%		
Number of Subsamples	2	2	2	1	1		
Assessed By	T. Campbell	T. Campbell	T. Campbell	T. Campbell	T. Campbell		
Days After First/Last Applic.	39 39	39 39	39 39	39 39	39 39		
Days After Emergence	35 DE-1	35 DE-1	35 DE-1	35 DE-1	35 DE-1		
ARM Action Codes				P	P		
Number of Decimals	0	0	0	0	0		
Trt Treatment No. Name	Rate Rate Unit	Appl Code	1	2	3	4	5
17 ZIDUA PRO	6 oz/a A		0 -	2 b	0 -	73 bc	100 a
TRICOR	6 oz/a A						
DURANGO DMA	32 fl oz/a A						
N-PAK	5 % v/v A						
DURANGO DMA	32 fl oz/a B						
N-PAK	5 % v/v B						
18 ZIDUA PRO	6 oz/a A		0 -	4 a	0 -	65 c	100 a
TRICOR	6 oz/a A						
DURANGO DMA	32 fl oz/a A						
N-PAK	5 % v/v A						
DURANGO DMA	32 fl oz/a B						
FLEXSTAR	20 fl oz/a B						
N-PAK	5 % v/v B						
19 INTERLINE	29 fl oz/a A		0 -	0 e	1 -	99 a	100 a
2,4-D CHOLINE SALT	0.95 lb ae/a A						
SONIC	4.5 oz/a A						
TRICOR	6 oz/a A						
N-PAK	5 % v/v A						
DURANGO DMA	32 fl oz/a B						
N-PAK	5 % v/v B						
20 INTERLINE	29 fl oz/a A		0 -	0 e	0 -	99 a	100 a
2,4-D CHOLINE SALT	0.95 lb ae/a A						
SONIC	4.5 oz/a A						
N-PAK	5 % v/v A						
ENLIST DUO	1.95 lb ae/a B						
N-PAK	5 % v/v B						
21 INTERLINE	29 fl oz/a A		0 -	0 e	1 -	100 a	96 a
2,4-D CHOLINE SALT	0.95 lb ae/a A						
SONIC	4.5 oz/a A						
N-PAK	5 % v/v A						
DURANGO DMA	32 fl oz/a B						
N-PAK	5 % v/v B						
LSD P=.05			1.2	1.5	3.3	10.2	5.4
Standard Deviation			0.9	1.1	2.4	7.2	3.8
CV			219.43	163.97	165.17	7.89	3.9
Levene's F			1.812	1.354	1.348	2.079	2.402
Levene's Prob(F)			0.042*	0.186	0.189	0.017*	0.005*
Skewness			3.101*	3.8818*	2.2971*	-2.4316*	-4.2993*
Kurtosis			10.2903*	19.486*	5.0292*	8.0439*	24.0316*
Replicate F			0.478	2.896	1.879	0.699	2.672
Replicate Prob(F)			0.6986	0.0429	0.1434	0.5565	0.0559
Treatment F			1.328	3.806	1.426	8.397	1.788
Treatment Prob(F)			0.2031	0.0001	0.1519	0.0001	0.0474

Means followed by same letter or symbol do not significantly differ (P=.05, LSD)
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
 Untreated treatment(s) 1 excluded from analysis.
 Could not calculate LSD (% mean diff) for columns 18 because error mean square = 0.

Purdue Weed Science

Marestail and Waterhemp control with Enlist System

Trial ID: 18S-MGS-Soy-02
 Protocol ID: 18S-MGS-Soy-02
 Project ID: NA18P2E002 E3 Purdue

Location: Meigs
 Investigator: Dr. Bill Johnson
 Study Director: Taylor Campbell
 Sponsor Contact: Corteva-Kevin Johnson

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed			
Pest Code	PANDI	AMATA	ERICA	PANDI	AMATA			
Pest Name	Fall panicum	Common waterhe>	Canada horsewe>	Fall panicum	Common waterhe>			
Part Rated	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P			
Rating Date	6/26/2018	7/18/2018	7/18/2018	7/18/2018	7/18/2018			
Rating Type	CONTRO	COUNT	COUNT	COUNT	CONTRO			
Rating Unit	%	1/2 m2	1/2 m2	1/2 m2	%			
Number of Subsamples	1	2	2	2	1			
Assessed By	T. Campbell	T. Campbell	T. Campbell	T. Campbell	T. Campbell			
Days After First/Last Applic.	39 39	61 20	61 20	61 20	61 20			
Days After Emergence	35 DE-1	57 DE-1	57 DE-1	57 DE-1	57 DE-1			
ARM Action Codes	P	P	P	P	P			
Number of Decimals	0	0	0	0	0			
Trt No.	Treatment Name	Rate	Appl Code	6	7	8	9	10
1	UNTREATED			0	0	16	4	0
2	ENLIST DUO SONIC N-PAK ENLIST DUO N-PAK	1.95 lb ae/a A 4.5 oz/a A 5 % v/v A 1.95 lb ae/a B 5 % v/v B		92 -	0 -	0 b	0 -	100 -
3	ENLIST DUO SONIC N-PAK 2,4-D CHOLINE SALT INTERLINE N-PAK	1.95 lb ae/a A 4.5 oz/a A 5 % v/v A 0.95 lb ae/a B 29 fl oz/a B 5 % v/v B		93 -	0 -	0 b	0 -	100 -
4	ENLIST DUO SONIC N-PAK INTERLINE N-PAK	1.95 lb ae/a A 4.5 oz/a A 5 % v/v A 29 fl oz/a B 5 % v/v B		98 -	0 -	0 b	0 -	100 -
5	ENLIST DUO SONIC N-PAK DURANGO DMA N-PAK	1.95 lb ae/a A 4.5 oz/a A 5 % v/v A 32 fl oz/a B 5 % v/v B		94 -	0 -	0 b	0 -	100 -
6	ENLIST DUO SONIC N-PAK DURANGO DMA FLEXSTAR N-PAK MSO	1.95 lb ae/a A 4.5 oz/a A 5 % v/v A 32 fl oz/a B 20 fl oz/a B 5 % v/v B 1 % v/v B		97 -	0 -	0 b	0 -	99 -
7	ENLIST DUO SONIC TRICOR N-PAK DURANGO DMA N-PAK	1.95 lb ae/a A 4.5 oz/a A 6 oz/a A 5 % v/v A 32 fl oz/a B 5 % v/v B		92 -	0 -	1 b	0 -	99 -
8	GRAMOXONE SL 2,4-D CHOLINE SALT SONIC TRICOR N-PAK DURANGO DMA N-PAK	4 pt/a A 0.95 lb ae/a A 4.5 oz/a A 6 oz/a A 5 % v/v A 32 fl oz/a B 5 % v/v B		94 -	0 -	0 b	0 -	100 -
9	GRAMOXONE SL 2,4-D CHOLINE SALT SONIC N-PAK ENLIST DUO N-PAK	4 pt/a A 0.95 lb ae/a A 4.5 oz/a A 5 % v/v A 1.95 lb ae/a B 5 % v/v B		96 -	0 -	0 b	0 -	100 -

Means followed by same letter or symbol do not significantly differ (P=.05, LSD)
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
 Untreated treatment(s) 1 excluded from analysis.
 Could not calculate LSD (% mean diff) for columns 18 because error mean square = 0.

Purdue Weed Science

Marestail and Waterhemp control with Enlist System

Trial ID: 18S-MGS-Soy-02 Location: Meigs Trial Year: 2018
 Protocol ID: 18S-MGS-Soy-02 Investigator: Dr. Bill Johnson
 Project ID: NA18P2E002 E3 Pudue Study Director: Taylor Campbell
 Sponsor Contact: Corteva-Kevin Johnson

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	PANDI	AMATA	ERICA	PANDI	AMATA
Pest Name	Fall panicum	Common waterhe>	Canada horsewe>	Fall panicum	Common waterhe>
Part Rated	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P
Rating Date	6/26/2018	7/18/2018	7/18/2018	7/18/2018	7/18/2018
Rating Type	CONTRO	COUNT	COUNT	COUNT	CONTRO
Rating Unit	%	1/2 m2	1/2 m2	1/2 m2	%
Number of Subsamples	1	2	2	2	1
Assessed By	T. Campbell	T. Campbell	T. Campbell	T. Campbell	T. Campbell
Days After First/Last Applic.	39 39	61 20	61 20	61 20	61 20
Days After Emergence	35 DE-1	57 DE-1	57 DE-1	57 DE-1	57 DE-1
ARM Action Codes	P				P
Number of Decimals	0	0	0	0	0
Trt Treatment	Rate	Appl			
No. Name	Rate Unit	Code	6	7	8
10 GRAMOXONE SL	4 pt/a A		98 -	0 -	0 b
2,4-D CHOLINE SALT	0.95 lb ae/a A				
SONIC	4.5 oz/a A				
N-PAK	5 % v/v A				
INTERLINE	29 fl oz/a B				
N-PAK	5 % v/v B				
11 GRAMOXONE SL	4 pt/a A		91 -	0 -	0 b
2,4-D CHOLINE SALT	0.95 lb ae/a A				
SONIC	4.5 oz/a A				
N-PAK	5 % v/v A				
INTERLINE	29 fl oz/a B				
2,4-D CHOLINE SALT	0.95 lb ae/a B				
N-PAK	5 % v/v B				
12 GRAMOXONE SL	4 pt/a A		90 -	0 -	0 b
2,4-D CHOLINE SALT	0.95 lb ae/a A				
SONIC	4.5 oz/a A				
N-PAK	5 % v/v A				
DURANGO DMA	32 fl oz/a B				
N-PAK	5 % v/v B				
13 GRAMOXONE SL	4 pt/a A		98 -	0 -	0 b
2,4-D CHOLINE SALT	0.95 lb ae/a A				
SONIC	4.5 oz/a A				
N-PAK	5 % v/v A				
DURANGO DMA	32 fl oz/a B				
FLEXSTAR	20 fl oz/a B				
N-PAK	5 % v/v B				
MSO	1 % v/v B				
14 ZIDUA PRO	6 oz/a A		100 -	0 -	1 b
TRICOR	6 oz/a A				
DURANGO DMA	32 fl oz/a A				
N-PAK	5 % v/v A				
ENLIST DUO	1.95 lb ae/a B				
N-PAK	5 % v/v B				
15 ZIDUA PRO	6 oz/a A		100 -	1 -	0 b
TRICOR	6 oz/a A				
DURANGO DMA	32 fl oz/a A				
N-PAK	5 % v/v A				
INTERLINE	29 fl oz/a B				
N-PAK	5 % v/v B				
16 ZIDUA PRO	6 oz/a A		100 -	0 -	0 b
TRICOR	6 oz/a A				
DURANGO DMA	32 fl oz/a A				
N-PAK	5 % v/v A				
INTERLINE	29 fl oz/a B				
2,4-D CHOLINE SALT	0.95 lb ae/a B				
N-PAK	5 % v/v B				

Means followed by same letter or symbol do not significantly differ (P=.05, LSD)
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
 Untreated treatment(s) 1 excluded from analysis.
 Could not calculate LSD (% mean diff) for columns 18 because error mean square = 0.

Purdue Weed Science

Marestail and Waterhemp control with Enlist System

Trial ID: 18S-MGS-Soy-02 Location: Meigs Trial Year: 2018
 Protocol ID: 18S-MGS-Soy-02 Investigator: Dr. Bill Johnson
 Project ID: NA18P2E002 E3 Pudue Study Director: Taylor Campbell
 Sponsor Contact: Corteva-Kevin Johnson

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	PANDI	AMATA	ERICA	PANDI	AMATA
Pest Name	Fall panicum	Common waterhe>	Canada horsewe>	Fall panicum	Common waterhe>
Part Rated	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P
Rating Date	6/26/2018	7/18/2018	7/18/2018	7/18/2018	7/18/2018
Rating Type	CONTRO	COUNT	COUNT	COUNT	CONTRO
Rating Unit	%	1/2 m2	1/2 m2	1/2 m2	%
Number of Subsamples	1	2	2	2	1
Assessed By	T. Campbell	T. Campbell	T. Campbell	T. Campbell	T. Campbell
Days After First/Last Applic.	39 39	61 20	61 20	61 20	61 20
Days After Emergence	35 DE-1	57 DE-1	57 DE-1	57 DE-1	57 DE-1
ARM Action Codes	P				P
Number of Decimals	0	0	0	0	0
Trt Treatment	Rate	Appl			
No. Name	Rate Unit	Code	6	7	8
17 ZIDUA PRO	6 oz/a	A	100 -	0 -	4 a
TRICOR	6 oz/a	A			
DURANGO DMA	32 fl oz/a	A			
N-PAK	5 % v/v	A			
DURANGO DMA	32 fl oz/a	B			
N-PAK	5 % v/v	B			
18 ZIDUA PRO	6 oz/a	A	100 -	0 -	4 a
TRICOR	6 oz/a	A			
DURANGO DMA	32 fl oz/a	A			
N-PAK	5 % v/v	A			
DURANGO DMA	32 fl oz/a	B			
FLEXSTAR	20 fl oz/a	B			
N-PAK	5 % v/v	B			
19 INTERLINE	29 fl oz/a	A	94 -	0 -	0 b
2,4-D CHOLINE SALT	0.95 lb ae/a	A			
SONIC	4.5 oz/a	A			
TRICOR	6 oz/a	A			
N-PAK	5 % v/v	A			
DURANGO DMA	32 fl oz/a	B			
N-PAK	5 % v/v	B			
20 INTERLINE	29 fl oz/a	A	98 -	0 -	0 b
2,4-D CHOLINE SALT	0.95 lb ae/a	A			
SONIC	4.5 oz/a	A			
N-PAK	5 % v/v	A			
ENLIST DUO	1.95 lb ae/a	B			
N-PAK	5 % v/v	B			
21 INTERLINE	29 fl oz/a	A	87 -	1 -	0 b
2,4-D CHOLINE SALT	0.95 lb ae/a	A			
SONIC	4.5 oz/a	A			
N-PAK	5 % v/v	A			
DURANGO DMA	32 fl oz/a	B			
N-PAK	5 % v/v	B			
LSD P=.05			8.5	0.4	1.3
Standard Deviation			6.0	0.3	0.9
CV			6.27	414.17	171.21
Levene's F			1.684	1.174	1.843
Levene's Prob(F)			0.065	0.309	0.038*
Skewness			-1.9835*	5.3027*	3.4994*
Kurtosis			3.6413*	29.0587*	13.1909*
Replicate F			6.107	0.432	1.827
Replicate Prob(F)			0.0011	0.7310	0.1525
Treatment F			1.679	1.595	7.920
Treatment Prob(F)			0.0679	0.0892	0.0001
					894.43
					0.1
					0.1
					2.0
					1.4
					1.4
					0.898
					0.587
					8.9443*
					80.0*
					-5.0371*
					29.7639*
					0.435
					0.7290
					1.097
					0.3784

Means followed by same letter or symbol do not significantly differ (P=.05, LSD)
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
 Untreated treatment(s) 1 excluded from analysis.
 Could not calculate LSD (% mean diff) for columns 18 because error mean square = 0.

Purdue Weed Science

Marestail and Waterhemp control with Enlist System

Trial ID: 18S-MGS-Soy-02 Location: Meigs Trial Year: 2018
 Protocol ID: 18S-MGS-Soy-02 Investigator: Dr. Bill Johnson
 Project ID: NA18P2E002 E3 Pudue Study Director: Taylor Campbell
 Sponsor Contact: Corteva-Kevin Johnson

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	ERICA	PANDI	AMATA	ERICA	PANDI
Pest Name	Canada horsewe>	Fall panicum	Common waterhe>	Canada horsewe>	Fall panicum
Part Rated	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P
Rating Date	7/18/2018	7/18/2018	7/25/2018	7/25/2018	7/25/2018
Rating Type	CONTRO	CONTRO	COUNT	COUNT	COUNT
Rating Unit	%	%	1/2 m2	1/2 m2	1/2 m2
Number of Subsamples	1	1	2	2	2
Assessed By	T. Campbell	T. Campbell	T. Campbell	T. Campbell	T. Campbell
Days After First/Last Applic.	61 20	61 20	68 27	68 27	68 27
Days After Emergence	57 DE-1	57 DE-1	64 DE-1	64 DE-1	64 DE-1
ARM Action Codes	P	P			
Number of Decimals	0	0	0	0	0
Trt Treatment	Rate	Appl			
No. Name	Rate Unit	Code	11	12	13
1 UNTREATED			0	0	0
2 ENLIST DUO	1.95 lb ae/a A		100 a	100 a	0 -
SONIC	4.5 oz/a A				0 b
N-PAK	5 % v/v A				
ENLIST DUO	1.95 lb ae/a B				
N-PAK	5 % v/v B				
3 ENLIST DUO	1.95 lb ae/a A		100 a	100 a	0 -
SONIC	4.5 oz/a A				0 b
N-PAK	5 % v/v A				
2,4-D CHOLINE SALT	0.95 lb ae/a B				
INTERLINE	29 fl oz/a B				
N-PAK	5 % v/v B				
4 ENLIST DUO	1.95 lb ae/a A		100 a	100 a	0 -
SONIC	4.5 oz/a A				0 b
N-PAK	5 % v/v A				
INTERLINE	29 fl oz/a B				
N-PAK	5 % v/v B				
5 ENLIST DUO	1.95 lb ae/a A		98 a	100 a	0 -
SONIC	4.5 oz/a A				0 b
N-PAK	5 % v/v A				
DURANGO DMA	32 fl oz/a B				
N-PAK	5 % v/v B				
6 ENLIST DUO	1.95 lb ae/a A		100 a	100 a	0 -
SONIC	4.5 oz/a A				0 b
N-PAK	5 % v/v A				
DURANGO DMA	32 fl oz/a B				
FLEXSTAR	20 fl oz/a B				
N-PAK	5 % v/v B				
MSO	1 % v/v B				
7 ENLIST DUO	1.95 lb ae/a A		96 a	100 a	0 -
SONIC	4.5 oz/a A				1 b
TRICOR	6 oz/a A				
N-PAK	5 % v/v A				
DURANGO DMA	32 fl oz/a B				
N-PAK	5 % v/v B				
8 GRAMOXONE SL	4 pt/a A		100 a	100 a	0 -
2,4-D CHOLINE SALT	0.95 lb ae/a A				0 b
SONIC	4.5 oz/a A				
TRICOR	6 oz/a A				
N-PAK	5 % v/v A				
DURANGO DMA	32 fl oz/a B				
N-PAK	5 % v/v B				
9 GRAMOXONE SL	4 pt/a A		100 a	100 a	0 -
2,4-D CHOLINE SALT	0.95 lb ae/a A				0 b
SONIC	4.5 oz/a A				
N-PAK	5 % v/v A				
ENLIST DUO	1.95 lb ae/a B				
N-PAK	5 % v/v B				

Means followed by same letter or symbol do not significantly differ (P=.05, LSD)
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
 Untreated treatment(s) 1 excluded from analysis.
 Could not calculate LSD (% mean diff) for columns 18 because error mean square = 0.

Purdue Weed Science

Marestail and Waterhemp control with Enlist System

Trial ID: 18S-MGS-Soy-02 Location: Meigs Trial Year: 2018
 Protocol ID: 18S-MGS-Soy-02 Investigator: Dr. Bill Johnson
 Project ID: NA18P2E002 E3 Pudue Study Director: Taylor Campbell
 Sponsor Contact: Corteva-Kevin Johnson

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	ERICA	PANDI	AMATA	ERICA	PANDI
Pest Name	Canada horsewe>	Fall panicum	Common waterhe>	Canada horsewe>	Fall panicum
Part Rated	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P
Rating Date	7/18/2018	7/18/2018	7/25/2018	7/25/2018	7/25/2018
Rating Type	CONTRO	CONTRO	COUNT	COUNT	COUNT
Rating Unit	%	%	1/2 m2	1/2 m2	1/2 m2
Number of Subsamples	1	1	2	2	2
Assessed By	T. Campbell	T. Campbell	T. Campbell	T. Campbell	T. Campbell
Days After First/Last Applic.	61 20	61 20	68 27	68 27	68 27
Days After Emergence	57 DE-1	57 DE-1	64 DE-1	64 DE-1	64 DE-1
ARM Action Codes	P	P			
Number of Decimals	0	0	0	0	0
Trt Treatment	Rate	Appl			
No. Name	Rate Unit	Code	11	12	13
10 GRAMOXONE SL	4 pt/a A		100 a	100 a	0 -
2,4-D CHOLINE SALT	0.95 lb ae/a A				0 b
SONIC	4.5 oz/a A				0 -
N-PAK	5 % v/v A				
INTERLINE	29 fl oz/a B				
N-PAK	5 % v/v B				
11 GRAMOXONE SL	4 pt/a A		100 a	99 b	0 -
2,4-D CHOLINE SALT	0.95 lb ae/a A				0 b
SONIC	4.5 oz/a A				0 -
N-PAK	5 % v/v A				
INTERLINE	29 fl oz/a B				
2,4-D CHOLINE SALT	0.95 lb ae/a B				
N-PAK	5 % v/v B				
12 GRAMOXONE SL	4 pt/a A		100 a	100 a	0 -
2,4-D CHOLINE SALT	0.95 lb ae/a A				0 b
SONIC	4.5 oz/a A				0 -
N-PAK	5 % v/v A				
DURANGO DMA	32 fl oz/a B				
N-PAK	5 % v/v B				
13 GRAMOXONE SL	4 pt/a A		100 a	100 a	0 -
2,4-D CHOLINE SALT	0.95 lb ae/a A				0 b
SONIC	4.5 oz/a A				0 -
N-PAK	5 % v/v A				
DURANGO DMA	32 fl oz/a B				
FLEXSTAR	20 fl oz/a B				
N-PAK	5 % v/v B				
MSO	1 % v/v B				
14 ZIDUA PRO	6 oz/a A		95 a	100 a	0 -
TRICOR	6 oz/a A				1 b
DURANGO DMA	32 fl oz/a A				0 -
N-PAK	5 % v/v A				
ENLIST DUO	1.95 lb ae/a B				
N-PAK	5 % v/v B				
15 ZIDUA PRO	6 oz/a A		98 a	100 a	1 -
TRICOR	6 oz/a A				0 b
DURANGO DMA	32 fl oz/a A				0 -
N-PAK	5 % v/v A				
INTERLINE	29 fl oz/a B				
N-PAK	5 % v/v B				
16 ZIDUA PRO	6 oz/a A		100 a	100 a	0 -
TRICOR	6 oz/a A				0 b
DURANGO DMA	32 fl oz/a A				0 -
N-PAK	5 % v/v A				
INTERLINE	29 fl oz/a B				
2,4-D CHOLINE SALT	0.95 lb ae/a B				
N-PAK	5 % v/v B				

Means followed by same letter or symbol do not significantly differ (P=.05, LSD)
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
 Untreated treatment(s) 1 excluded from analysis.
 Could not calculate LSD (% mean diff) for columns 18 because error mean square = 0.

Purdue Weed Science

Marestail and Waterhemp control with Enlist System

Trial ID: 18S-MGS-Soy-02 Location: Meigs Trial Year: 2018
 Protocol ID: 18S-MGS-Soy-02 Investigator: Dr. Bill Johnson
 Project ID: NA18P2E002 E3 Pudue Study Director: Taylor Campbell
 Sponsor Contact: Corteva-Kevin Johnson

Pest Type	W Weed	W Weed	W Weed	W Weed	W Weed
Pest Code	ERICA	PANDI	AMATA	ERICA	PANDI
Pest Name	Canada horsewe>	Fall panicum	Common waterhe>	Canada horsewe>	Fall panicum
Part Rated	PLOT P	PLOT P	PLOT P	PLOT P	PLOT P
Rating Date	7/18/2018	7/18/2018	7/25/2018	7/25/2018	7/25/2018
Rating Type	CONTRO	CONTRO	COUNT	COUNT	COUNT
Rating Unit	%	%	1/2 m2	1/2 m2	1/2 m2
Number of Subsamples	1	1	2	2	2
Assessed By	T. Campbell	T. Campbell	T. Campbell	T. Campbell	T. Campbell
Days After First/Last Applic.	61 20	61 20	68 27	68 27	68 27
Days After Emergence	57 DE-1	57 DE-1	64 DE-1	64 DE-1	64 DE-1
ARM Action Codes	P	P			
Number of Decimals	0	0	0	0	0
Trt Treatment	Rate	Appl			
No. Name	Rate Unit	Code	11	12	13
17 ZIDUA PRO	6 oz/a A		70 b	100 a	0 -
TRICOR	6 oz/a A				4 a
DURANGO DMA	32 fl oz/a A				
N-PAK	5 % v/v A				
DURANGO DMA	32 fl oz/a B				
N-PAK	5 % v/v B				
18 ZIDUA PRO	6 oz/a A		69 b	100 a	0 -
TRICOR	6 oz/a A				4 a
DURANGO DMA	32 fl oz/a A				
N-PAK	5 % v/v A				
DURANGO DMA	32 fl oz/a B				
FLEXSTAR	20 fl oz/a B				
N-PAK	5 % v/v B				
19 INTERLINE	29 fl oz/a A		100 a	100 a	0 -
2,4-D CHOLINE SALT	0.95 lb ae/a A				0 b
SONIC	4.5 oz/a A				
TRICOR	6 oz/a A				
N-PAK	5 % v/v A				
DURANGO DMA	32 fl oz/a B				
N-PAK	5 % v/v B				
20 INTERLINE	29 fl oz/a A		100 a	100 a	0 -
2,4-D CHOLINE SALT	0.95 lb ae/a A				0 b
SONIC	4.5 oz/a A				
N-PAK	5 % v/v A				
ENLIST DUO	1.95 lb ae/a B				
N-PAK	5 % v/v B				
21 INTERLINE	29 fl oz/a A		100 a	100 a	0 -
2,4-D CHOLINE SALT	0.95 lb ae/a A				0 b
SONIC	4.5 oz/a A				
N-PAK	5 % v/v A				
DURANGO DMA	32 fl oz/a B				
N-PAK	5 % v/v B				
LSD P=.05			8.8	0.3	0.4
Standard Deviation			6.2	0.2	0.3
CV			6.48	0.21	360.05
Levene's F			3.68		168.77
Levene's Prob(F)			0.001*		1.553
Skewness			-3.4772*	-7.1257*	0.336
Kurtosis			12.642*	52.873*	0.10
Replicate F			1.722	1.000	0.718
Replicate Prob(F)			0.1728	0.3995	0.5453
Treatment F			8.931	2.455	1.635
Treatment Prob(F)			0.0001	0.0047	0.0784
					13.4434*
					8.9443*
					80.0*
					1.874
					1.000
					0.3995
					8.210
					1.000
					0.4750

Means followed by same letter or symbol do not significantly differ (P=.05, LSD)
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
 Untreated treatment(s) 1 excluded from analysis.
 Could not calculate LSD (% mean diff) for columns 18 because error mean square = 0.

Purdue Weed Science

Marestail and Waterhemp control with Enlist System

Trial ID: 18S-MGS-Soy-02 Location: Meigs Trial Year: 2018
 Protocol ID: 18S-MGS-Soy-02 Investigator: Dr. Bill Johnson
 Project ID: NA18P2E002 E3 Purdue Study Director: Taylor Campbell
 Sponsor Contact: Corteva-Kevin Johnson

Pest Type	W Weed	W Weed	W Weed
Pest Code	AMATA	ERICA	PANDI
Pest Name	Common waterhe>	Canada horsewe>	Fall panicum
Part Rated	PLOT P	PLOT P	PLOT P
Rating Date	7/25/2018	7/25/2018	7/25/2018
Rating Type	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%
Number of Subsamples	1	1	1
Assessed By	T. Campbell	T. Campbell	T. Campbell
Days After First/Last Applic.	68 27	68 27	68 27
Days After Emergence	64 DE-1	64 DE-1	64 DE-1
ARM Action Codes	P	P	P
Number of Decimals	0	0	0
Trt Treatment	Rate	Appl	
No. Name	Rate Unit	Code	
1 UNTREATED			16
2 ENLIST DUO	1.95 lb ae/a A		17
SONIC	4.5 oz/a A		18
N-PAK	5 % v/v A		
ENLIST DUO	1.95 lb ae/a B		
N-PAK	5 % v/v B		
3 ENLIST DUO	1.95 lb ae/a A		
SONIC	4.5 oz/a A		
N-PAK	5 % v/v A		
2,4-D CHOLINE SALT	0.95 lb ae/a B		
INTERLINE	29 fl oz/a B		
N-PAK	5 % v/v B		
4 ENLIST DUO	1.95 lb ae/a A		
SONIC	4.5 oz/a A		
N-PAK	5 % v/v A		
INTERLINE	29 fl oz/a B		
N-PAK	5 % v/v B		
5 ENLIST DUO	1.95 lb ae/a A		
SONIC	4.5 oz/a A		
N-PAK	5 % v/v A		
DURANGO DMA	32 fl oz/a B		
N-PAK	5 % v/v B		
6 ENLIST DUO	1.95 lb ae/a A		
SONIC	4.5 oz/a A		
N-PAK	5 % v/v A		
DURANGO DMA	32 fl oz/a B		
FLEXSTAR	20 fl oz/a B		
N-PAK	5 % v/v B		
MSO	1 % v/v B		
7 ENLIST DUO	1.95 lb ae/a A		
SONIC	4.5 oz/a A		
TRICOR	6 oz/a A		
N-PAK	5 % v/v A		
DURANGO DMA	32 fl oz/a B		
N-PAK	5 % v/v B		
8 GRAMOXONE SL	4 pt/a A		
2,4-D CHOLINE SALT	0.95 lb ae/a A		
SONIC	4.5 oz/a A		
TRICOR	6 oz/a A		
N-PAK	5 % v/v A		
DURANGO DMA	32 fl oz/a B		
N-PAK	5 % v/v B		
9 GRAMOXONE SL	4 pt/a A		
2,4-D CHOLINE SALT	0.95 lb ae/a A		
SONIC	4.5 oz/a A		
N-PAK	5 % v/v A		
ENLIST DUO	1.95 lb ae/a B		
N-PAK	5 % v/v B		

Means followed by same letter or symbol do not significantly differ (P=.05, LSD)
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
 Untreated treatment(s) 1 excluded from analysis.
 Could not calculate LSD (% mean diff) for columns 18 because error mean square = 0.

Purdue Weed Science

Marestail and Waterhemp control with Enlist System

Trial ID: 18S-MGS-Soy-02 Location: Meigs Trial Year: 2018
 Protocol ID: 18S-MGS-Soy-02 Investigator: Dr. Bill Johnson
 Project ID: NA18P2E002 E3 Pudue Study Director: Taylor Campbell
 Sponsor Contact: Corteva-Kevin Johnson

Pest Type	W Weed	W Weed	W Weed			
Pest Code	AMATA	ERICA	PANDI			
Pest Name	Common waterhe>	Canada horsewe>	Fall panicum			
Part Rated	PLOT P	PLOT P	PLOT P			
Rating Date	7/25/2018	7/25/2018	7/25/2018			
Rating Type	CONTRO	CONTRO	CONTRO			
Rating Unit	%	%	%			
Number of Subsamples	1	1	1			
Assessed By	T. Campbell	T. Campbell	T. Campbell			
Days After First/Last Applic.	68 27	68 27	68 27			
Days After Emergence	64 DE-1	64 DE-1	64 DE-1			
ARM Action Codes	P	P	P			
Number of Decimals	0	0	0			
Trt No.	Treatment Name	Rate	Appl Code	16	17	18
10	GRAMOXONE SL	4 pt/a	A	100 -	100 a	100 -
	2,4-D CHOLINE SALT	0.95 lb ae/a	A			
	SONIC	4.5 oz/a	A			
	N-PAK	5 % v/v	A			
	INTERLINE	29 fl oz/a	B			
	N-PAK	5 % v/v	B			
11	GRAMOXONE SL	4 pt/a	A	100 -	100 a	100 -
	2,4-D CHOLINE SALT	0.95 lb ae/a	A			
	SONIC	4.5 oz/a	A			
	N-PAK	5 % v/v	A			
	INTERLINE	29 fl oz/a	B			
	2,4-D CHOLINE SALT	0.95 lb ae/a	B			
	N-PAK	5 % v/v	B			
12	GRAMOXONE SL	4 pt/a	A	100 -	100 a	100 -
	2,4-D CHOLINE SALT	0.95 lb ae/a	A			
	SONIC	4.5 oz/a	A			
	N-PAK	5 % v/v	A			
	DURANGO DMA	32 fl oz/a	B			
	N-PAK	5 % v/v	B			
13	GRAMOXONE SL	4 pt/a	A	100 -	100 a	100 -
	2,4-D CHOLINE SALT	0.95 lb ae/a	A			
	SONIC	4.5 oz/a	A			
	N-PAK	5 % v/v	A			
	DURANGO DMA	32 fl oz/a	B			
	FLEXSTAR	20 fl oz/a	B			
	N-PAK	5 % v/v	B			
	MSO	1 % v/v	B			
14	ZIDUA PRO	6 oz/a	A	100 -	95 a	100 -
	TRICOR	6 oz/a	A			
	DURANGO DMA	32 fl oz/a	A			
	N-PAK	5 % v/v	A			
	ENLIST DUO	1.95 lb ae/a	B			
	N-PAK	5 % v/v	B			
15	ZIDUA PRO	6 oz/a	A	98 -	100 a	100 -
	TRICOR	6 oz/a	A			
	DURANGO DMA	32 fl oz/a	A			
	N-PAK	5 % v/v	A			
	INTERLINE	29 fl oz/a	B			
	N-PAK	5 % v/v	B			
16	ZIDUA PRO	6 oz/a	A	99 -	100 a	100 -
	TRICOR	6 oz/a	A			
	DURANGO DMA	32 fl oz/a	A			
	N-PAK	5 % v/v	A			
	INTERLINE	29 fl oz/a	B			
	2,4-D CHOLINE SALT	0.95 lb ae/a	B			
	N-PAK	5 % v/v	B			

Means followed by same letter or symbol do not significantly differ (P=.05, LSD)
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
 Untreated treatment(s) 1 excluded from analysis.
 Could not calculate LSD (% mean diff) for columns 18 because error mean square = 0.

Purdue Weed Science

Marestail and Waterhemp control with Enlist System

Trial ID: 18S-MGS-Soy-02 Location: Meigs Trial Year: 2018
 Protocol ID: 18S-MGS-Soy-02 Investigator: Dr. Bill Johnson
 Project ID: NA18P2E002 E3 Purdue Study Director: Taylor Campbell
 Sponsor Contact: Corteva-Kevin Johnson

Pest Type	W Weed	W Weed	W Weed
Pest Code	AMATA	ERICA	PANDI
Pest Name	Common waterhe>	Canada horsewe>	Fall panicum
Part Rated	PLOT P	PLOT P	PLOT P
Rating Date	7/25/2018	7/25/2018	7/25/2018
Rating Type	CONTRO	CONTRO	CONTRO
Rating Unit	%	%	%
Number of Subsamples	1	1	1
Assessed By	T. Campbell	T. Campbell	T. Campbell
Days After First/Last Applic.	68 27	68 27	68 27
Days After Emergence	64 DE-1	64 DE-1	64 DE-1
ARM Action Codes	P	P	P
Number of Decimals	0	0	0
Trt Treatment	Rate	Appl	
No. Name	Rate Unit	Code	
			16 17 18
17 ZIDUA PRO	6 oz/a	A	100 - 79 b 100 -
TRICOR	6 oz/a	A	
DURANGO DMA	32 fl oz/a	A	
N-PAK	5 % v/v	A	
DURANGO DMA	32 fl oz/a	B	
N-PAK	5 % v/v	B	
18 ZIDUA PRO	6 oz/a	A	100 - 70 b 100 -
TRICOR	6 oz/a	A	
DURANGO DMA	32 fl oz/a	A	
N-PAK	5 % v/v	A	
DURANGO DMA	32 fl oz/a	B	
FLEXSTAR	20 fl oz/a	B	
N-PAK	5 % v/v	B	
19 INTERLINE	29 fl oz/a	A	100 - 100 a 100 -
2,4-D CHOLINE SALT	0.95 lb ae/a	A	
SONIC	4.5 oz/a	A	
TRICOR	6 oz/a	A	
N-PAK	5 % v/v	A	
DURANGO DMA	32 fl oz/a	B	
N-PAK	5 % v/v	B	
20 INTERLINE	29 fl oz/a	A	100 - 100 a 100 -
2,4-D CHOLINE SALT	0.95 lb ae/a	A	
SONIC	4.5 oz/a	A	
N-PAK	5 % v/v	A	
ENLIST DUO	1.95 lb ae/a	B	
N-PAK	5 % v/v	B	
21 INTERLINE	29 fl oz/a	A	98 - 100 a 100 -
2,4-D CHOLINE SALT	0.95 lb ae/a	A	
SONIC	4.5 oz/a	A	
N-PAK	5 % v/v	A	
DURANGO DMA	32 fl oz/a	B	
N-PAK	5 % v/v	B	
LSD P=.05	1.6	11.0	.
Standard Deviation	1.1	7.7	0.0
CV	1.12	8.03	0.0
Levene's F	0.865	3.308	0.00
Levene's Prob(F)	0.625	0.001*	0.00*
Skewness	-4.8871*	-3.5697*	.
Kurtosis	28.7837*	13.7124*	.
Replicate F	0.441	1.213	0.000
Replicate Prob(F)	0.7248	0.3132	1.0000
Treatment F	1.144	4.203	0.000
Treatment Prob(F)	0.3357	0.0001	1.0000

Means followed by same letter or symbol do not significantly differ (P=.05, LSD)
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
 Untreated treatment(s) 1 excluded from analysis.
 Could not calculate LSD (% mean diff) for columns 18 because error mean square = 0.

Purdue Weed Science

Marestail and Waterhemp control with Enlist System

Trial ID: 18S-MGS-Soy-02 Location: Meigs Trial Year: 2018
Protocol ID: 18S-MGS-Soy-02 Investigator: Dr. Bill Johnson
Project ID: NA18P2E002 E3 Purdue Study Director: Taylor Campbell
Sponsor Contact: Corteva-Kevin Johnson

Pest Type

W, Weed, G-BYRW7, G-WedStg = Weed or volunteer crop

Pest Code

AMATA, Amaranthus tamariscinus, Common waterhemp = US

ERICA, Erigeron canadensis, Canada horseweed = US

PANDI, Panicum dichotomiflorum, Fall panicum = US

Part Rated

PLOT = plot

P = Pest is Part Rated

Rating Type

COUNT = count

CONTRO = control / burndown or knockdown

Rating Unit

% = percent

ARM Action Codes

P = Rating scale of 0 to 100 (e.g. % control or injury)