

2019 Pest Management Update Meetings

WiscWeeds Research Update



Cropping Systems Weed Science
UNIVERSITY OF WISCONSIN-MADISON

(Not for Publication)

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The purpose of this book is to share on-going research trials with crop production clientele of Wisconsin. These research trials are available for public in the future by simply contacting Dr. Rodrigo Werle with reasonable advance notice. Information herein does not constitute a recommendation or endorsement of any particular product or practice. Information herein also does not replace any information presented on pesticide labels. More complete product use guidelines are given through the University of Wisconsin Extension publication:

A3646, Pest Management in Wisconsin Field Crops

Despite careful proof reading, there may be some errors in this report.

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We sincerely thank the following organizations who have generously supported the research presented herein:

Wisconsin Soybean Marketing Board



United Soybean Board



Wisconsin Corn Promotion Board



We also sincerely thank the industry sponsorship in providing products and assistance with rate selection for the following research trials as well as the staff at Lancaster Agricultural Research Station, Rock County Farm, and O'Brien Hybrids.

Preliminary Results – Not for Publication

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Residual Evaluation for Giant Ragweed and Waterhemp Control - Corn

Preliminary Weed Control Ratings		Giant Ragweed (Janesville, WI)	Waterhemp (Brooklyn, WI)
SOA Group	Corn growth stage (days after treatment)	V6 (25 DAT)	V7 (25 DAT)
	Herbicide and application rate (ac ⁻¹)	Relative Rank	
2	Python (1 oz)	5	5
2	Resolve SG (1.25 oz)	5	5
4	Stinger (6 fl oz)	5	5
4	Diflexx (10 fl oz)	5	5
5	Aatrex (28.8 fl oz)	5	3
5	Aatrex (57.6 fl oz)	5	3
5	Princep 4FL (64 fl oz)*	5	3
15	Harness (28.8 fl oz)	5	1
15	Dual II Magnum (32.1 fl oz)	5	3
15	Outlook (17.5 fl oz)	5	2
15	Zidua (3.25 fl oz)	5	4
27	Balance Flexx (4.5 fl oz)	5	3
27	Armezon (0.75 fl oz)	5	5
27	Callisto (3 fl oz)	5	4
27	Laudis (3 fl oz)	5	5
15 & 27	Armezon PRO (20 fl oz)	5	2
15 & 27	Harness Max (64 fl oz)	5	1
15 & 27	Acuron Flexi (64 fl oz)	5	1
2 & 27	Capreno (3 fl oz)	5	5
2 & 27	Corvus (5.6 fl oz)	5	3
2 & 27	Realm Q (4 oz)	5	4
4 & 27	Diflexx Duo (28 fl oz)	5	5
5 & 15	Bicep Lite II Magnum (56 fl oz)	5	1
5 & 15	Harness Xtra (64 fl oz)	5	1
2 & 4	Hornet WDG (4 oz)	5	5
14 & 15	Verdict (15 fl oz)*	5	1
9 & 15 & 27	Halex GT (64 fl oz)	5	1
4 & 15 & 27	Resicore (80 fl oz)	5	1
2 & 4 & 15	Surestart II (40 fl oz)	5	1
5 & 15 & 27	Acuron (80 fl oz)	5	1

Rank: (1) ≥ 90% control (2) 80-89 % (3) 70-79% (4) 60-69% (5) < 60%

*Princep 4 FL and Verdict were off label applications. Always read, follow and understand the pesticide label. The label is the law.

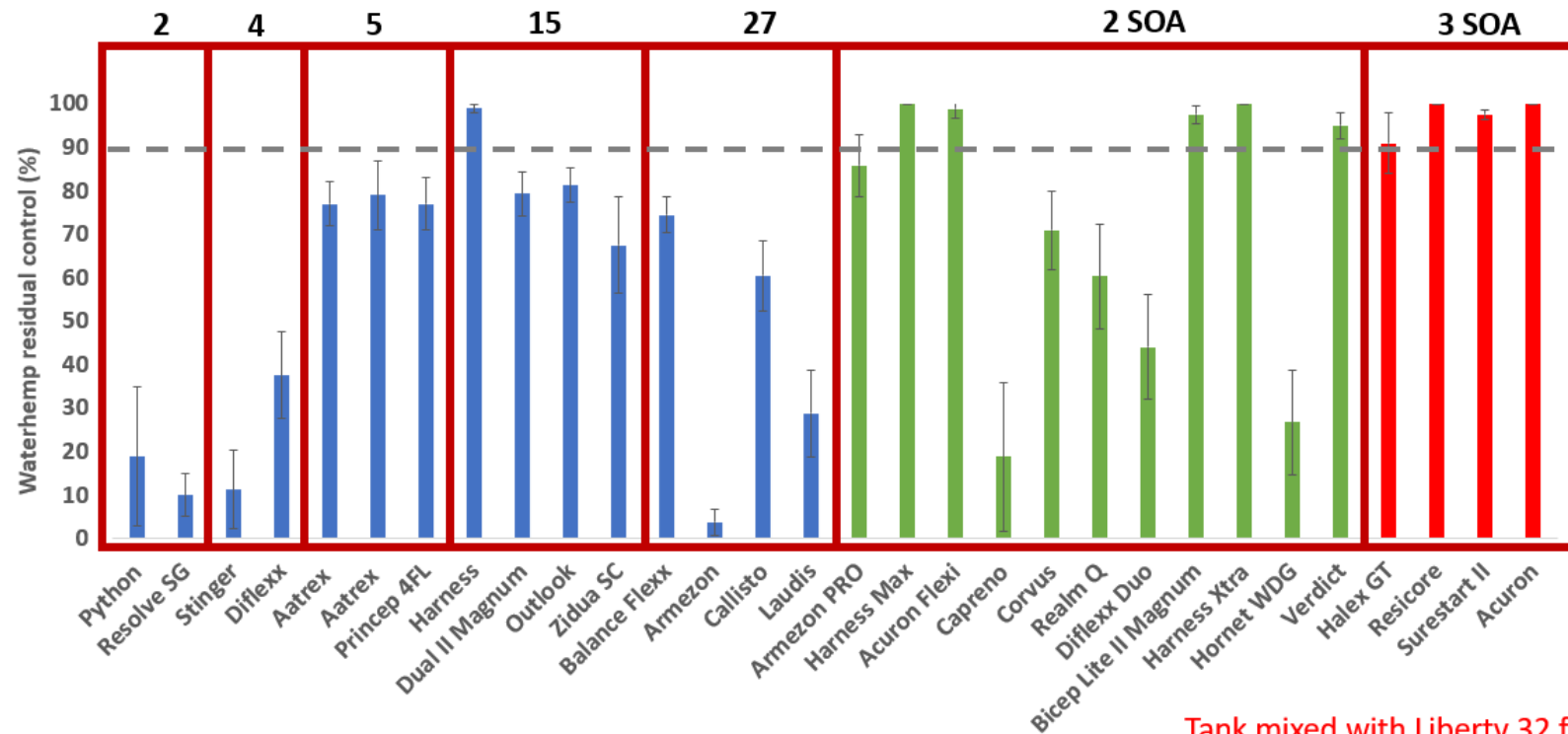
Preliminary Results – Not for Publication 1 Year Data

Residual Evaluation for Giant Ragweed and Waterhemp Control - Corn

SOA Group	Herbicide and application rate (ac ⁻¹)	Active ingredient [ai concentration lb gal ⁻¹]	Equivalent Tank Mix (ac ⁻¹)
2	Python (1 oz)	flumetsulan [80%]	NA
2	Resolve SG (1.25 oz)	rimsulfuron [25%]	NA
4	Stinger (6 fl oz)	clopyralid [3.0]	NA
4	Diflexx (10 fl oz)	dicamba [4.0]	NA
5	Aatrex (28.8 fl oz)	atrazine [4.0]	NA
5	Aatrex (57.6 fl oz)	atrazine [4.0]	NA
5	Princep 4FL (64 fl oz)	simazine [4.0]	NA
15	Harness (28.8 fl oz)	acetochlor [7.0]	NA
15	Dual II Magnum (32.1 fl oz)	S-metolachlor [7.64]	NA
15	Outlook (17.5 fl oz)	dimethenamid-P [6.0]	NA
15	Zidua (3.25 fl oz)	pyroxasulfone [85%]	NA
27	Balance Flexx (4.5 fl oz)	isoxaflutole [2.0]	NA
27	Armezon (0.75 fl oz)	topramezone [2.8]	NA
27	Callisto (3 fl oz)	mesotrione [4.0]	NA
27	Laudis (3 fl oz)	tembotrione [3.5]	NA
15 & 27	Armezon PRO (20 fl oz)	dimethenamid-P + topramezone	17.5 fl oz Outlook + 0.71 fl oz Armezon
15 & 27	Harness Max (64 fl oz)	acetochlor + mesotrione	32.2 fl oz Harness + 5.28 fl oz Callisto
15 & 27	Acuron Flexi (64 fl oz)	S-metolachlor + mesotrione + bicyclopyrone	24.0 fl oz Dual II Magnum + 5.12 fl oz Callisto + 0.64 oz bicyclopyrone
2 & 27	Capreno (3 fl oz)	thiencarbazone-Methyl + tembotrione	0.21 oz thiencarbazone-Methyl + 2.47 fl oz Laudis
2 & 27	Corvus (5.6 fl oz)	thiencarbazone-Methyl + isoxaflutole	0.40 oz thiencarbazone-Methyl + 5.26 fl oz Balance Flexx
2 & 27	Realm Q (4 oz)	rimsulfuron + mesotrione	1.2 oz Resolve SG + 2.5 oz Mesotrione 50WG
4 & 27	Diflexx Duo (28 fl oz)	dicamba + tembotrione	8.82 fl oz Diflexx + 2.16 fl oz Laudis
5 & 15	Bicep Lite II Magnum (56 fl oz)	atrazine + S-metolachlor	37.4 fl oz Aatrex + 24.4 fl oz Dual II Magnum
5 & 15	Harness Xtra (64 fl oz)	atrazine + acetochlor	27.2 fl oz Aatrex + 39.3 fl oz Harness
2 & 4	Hornet WDG (4 oz)	flumetsulam + clopyralid	1.0 oz Python + 6.75 oz Stinger
14 & 15	Verdict (15 fl oz)	saffluenacil + dimethenamid-P	3 fl oz Sharpen + 12.5 fl oz Outlook
9 & 15 & 27	Halex GT (64 fl oz)	glyphosate + S-metolachlor + mesotrione	29.7 fl oz Roundup PowerMax + 17.5 fl oz Dual II Magnum + 3.34 fl oz Callisto
4 & 15 & 27	Resicore (80 fl oz)	clopyralid + acetochlor + mesotrione	5.06 fl oz Stinger + 32.0 fl oz Harness + 6.0 fl oz Callisto
2 & 4 & 15	Surestart II (40 fl oz)	flumetsulam + clopyralid + acetochlor	0.75 oz Python + 3.87 fl oz Stinger + 21.4 fl oz Harness
5 & 15 & 27	Acuron (80 fl oz)	atrazine + S-metolachlor + mesotrione + bicyclopyrone	20 fl oz Aatrex + 22.4 fl oz Dual II Magnum + 4.8 fl oz Callisto + 0.80 oz bicyclopyrone

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Waterhemp Residual Control 25 DAT (corn, V7 stage) Brooklyn, WI 2019

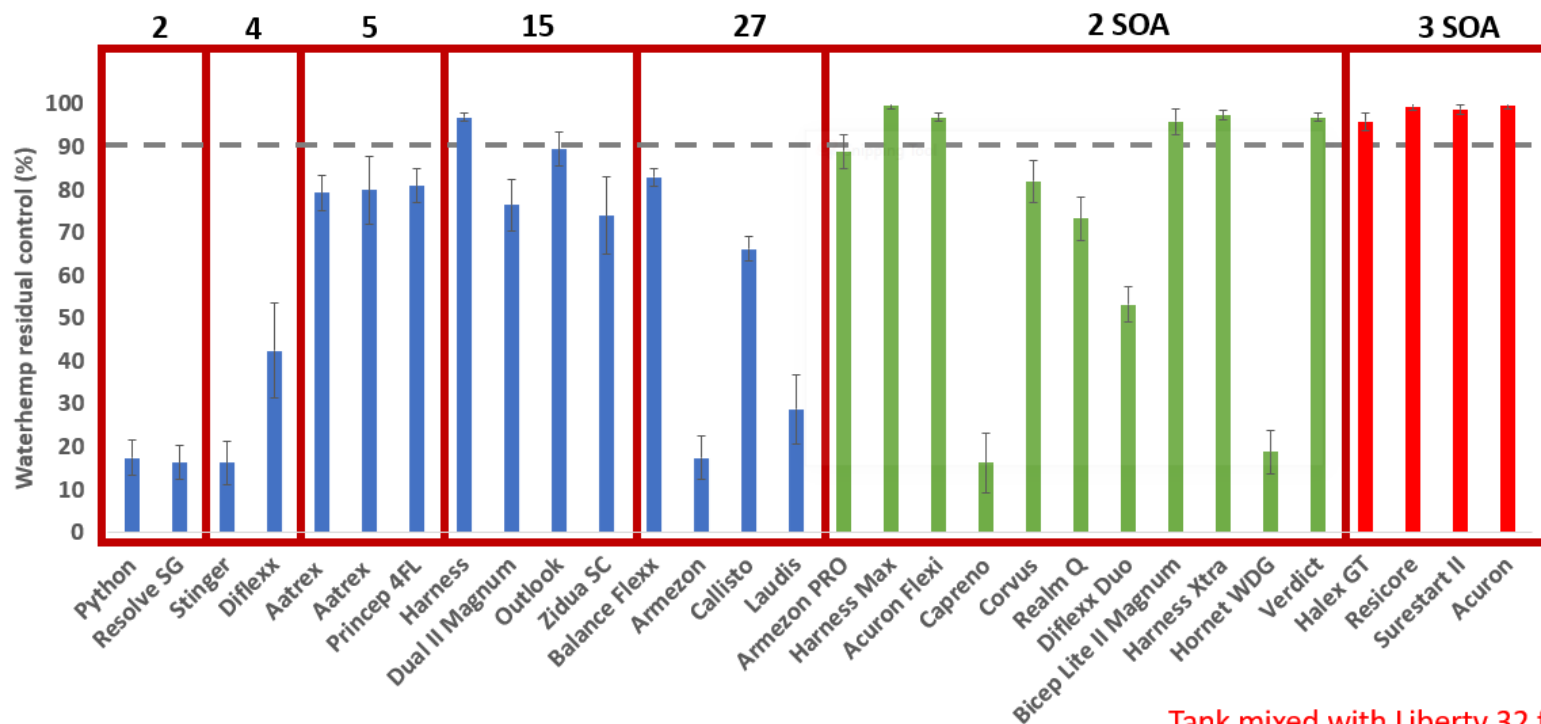


Tank mixed with Liberty 32 fl oz/A

1 Year Data

Preliminary Results – Not for Publication

Waterhemp Residual Control 50 DAT (corn, VT stage) Brooklyn, WI 2019

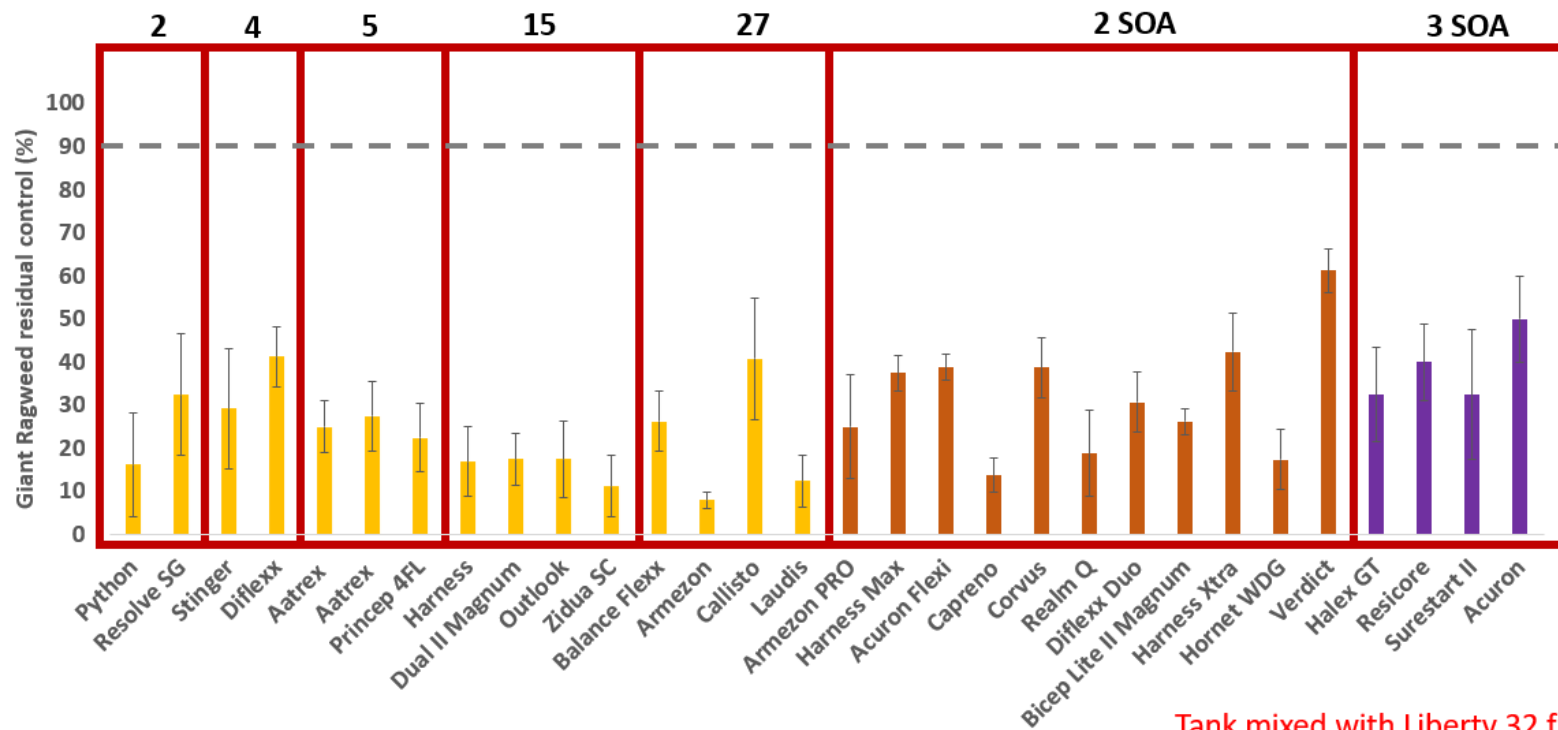


Tank mixed with Liberty 32 fl oz/A

1 Year Data

Preliminary Results – Not for Publication

Giant Ragweed Residual Control 25 DAT (corn, V6 stage) Janesville, WI 2019

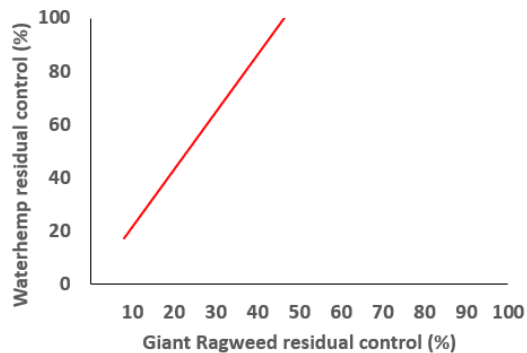
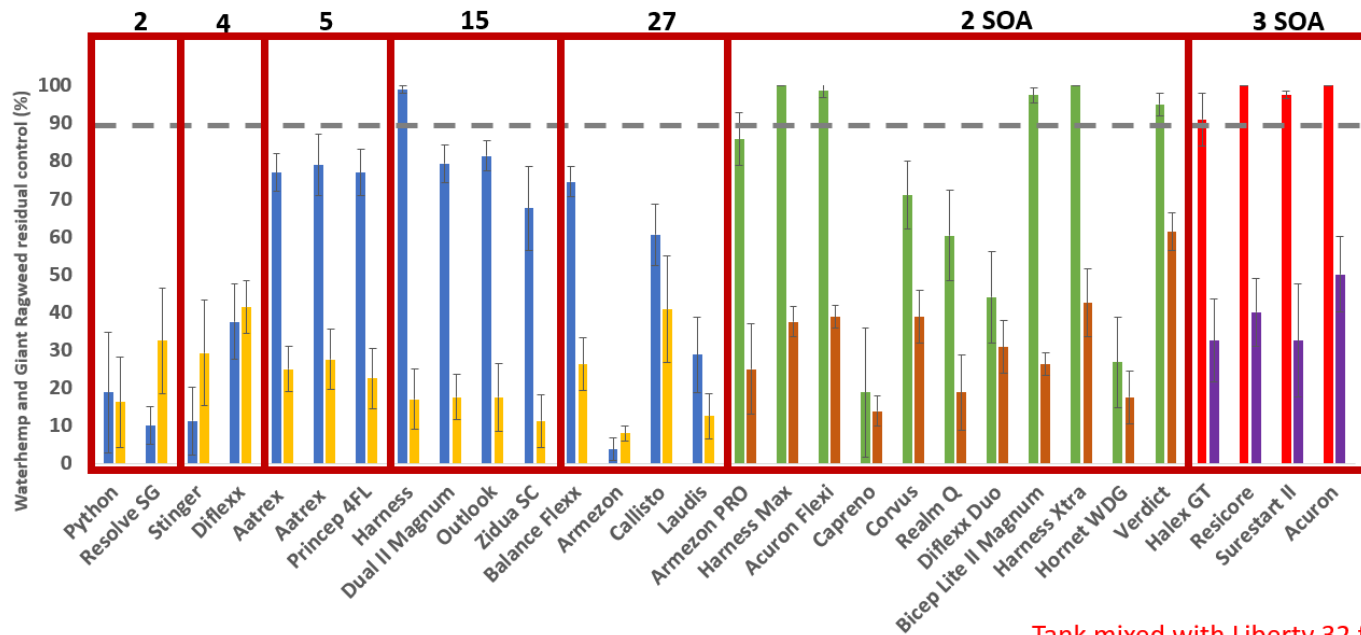


Tank mixed with Liberty 32 fl oz/A

1 Year Data

Preliminary Results – Not for Publication

Giant Ragweed and Waterhemp Residual Control 25 DAT (corn, V6-V7 stage)



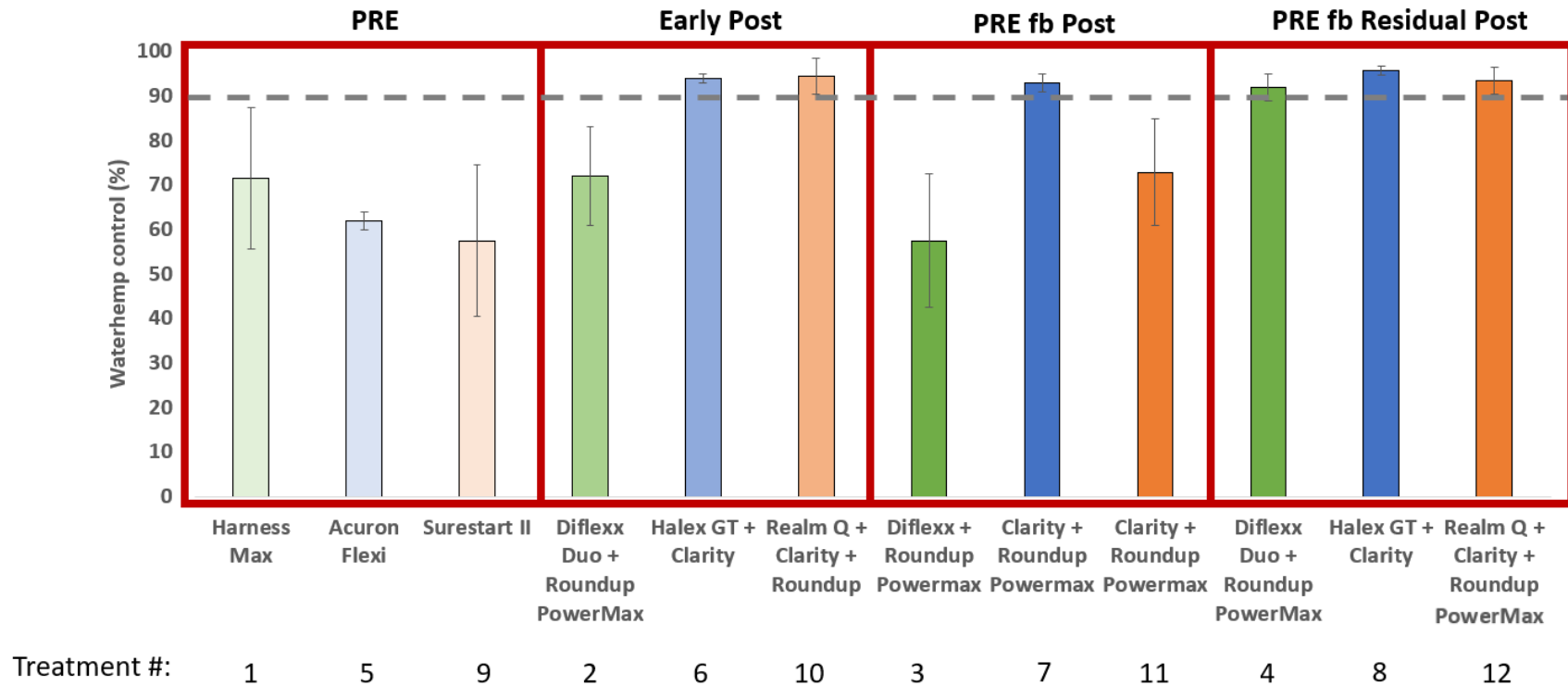
1 Year Data

Preliminary Results – Not for Publication

Systems Approach for Weed Management - Corn

Treatments:	PRE (application rate ac ⁻¹)	Early Post (V2) (application rate ac ⁻¹)	Post (V4) (application rate ac ⁻¹)
1	Harness Max (75 fl oz) [acetochlor + mesotrione] 15 & 27	-	-
2	-	Diflexx Duo (28 fl oz) + Roundup Powermax (30 fl oz) [dicamba + glyphosate + tembotrione] 4 & 9 & 27	-
3	Harness Max (64 fl oz) [acetochlor + mesotrione] 15 & 27	-	Diflexx (8 fl oz) + Roundup Powermax (30 fl oz) [dicamba + glyphosate] 4 & 9
4	Harness Max (64 fl oz) [acetochlor + mesotrione] 15 & 27	-	Diflexx Duo (28 fl oz) + Roundup Powermax (30 fl oz) [dicamba + glyphosate + tembotrione] 4 & 9 & 27
5	Acuron Flexi (72 fl oz) [bicyclopyrone + S-metolachlor + mesotrione] 15 & 27	-	-
6	-	Halex GT (76.9 fl oz) + Clarity (8 fl oz) [dicamba + glyphosate + S-metolachlor + mesotrione] 4 & 9 & 15 & 27	-
7	Acuron Flexi (48 fl oz) [bicyclopyrone + S-metolachlor + mesotrione] 15 & 27	-	Clarity (8 fl oz) + Roundup Powermax (30 fl oz) [dicamba + glyphosate] 4 & 9
8	Acuron Flexi (35.2 fl oz) [bicyclopyrone + S-metolachlor + mesotrione] 15 & 27	-	Halex GT (69.2 fl oz) + Clarity (8 fl oz) [dicamba + glyphosate + S-metolachlor + mesotrione] 4 & 9 & 15 & 27
9	Surestart II (80 fl oz) [flumetsulam + clopyralid + acetochlor] 2 & 4 & 15	-	-
10	-	Realm Q (4 oz) + Clarity (8 fl oz) + Roundup Powermax (30 fl oz) [rimsulfuron + dicamba + glyphosate + mesotrione] 2 & 4 & 9 & 27	-
11	Surestart II (80 fl oz) [flumetsulam + clopyralid + acetochlor] 2 & 4 & 15	-	Clarity (8 fl oz) + Roundup Powermax (30 fl oz) [dicamba + glyphosate] 4 & 9
12	Surestart II (80 fl oz) [flumetsulam + clopyralid + acetochlor] 2 & 4 & 15	-	Realm Q (4 oz) + Clarity (8 fl oz) + Roundup Powermax (30 fl oz) [rimsulfuron + dicamba + glyphosate + mesotrione] 2 & 4 & 9 & 27

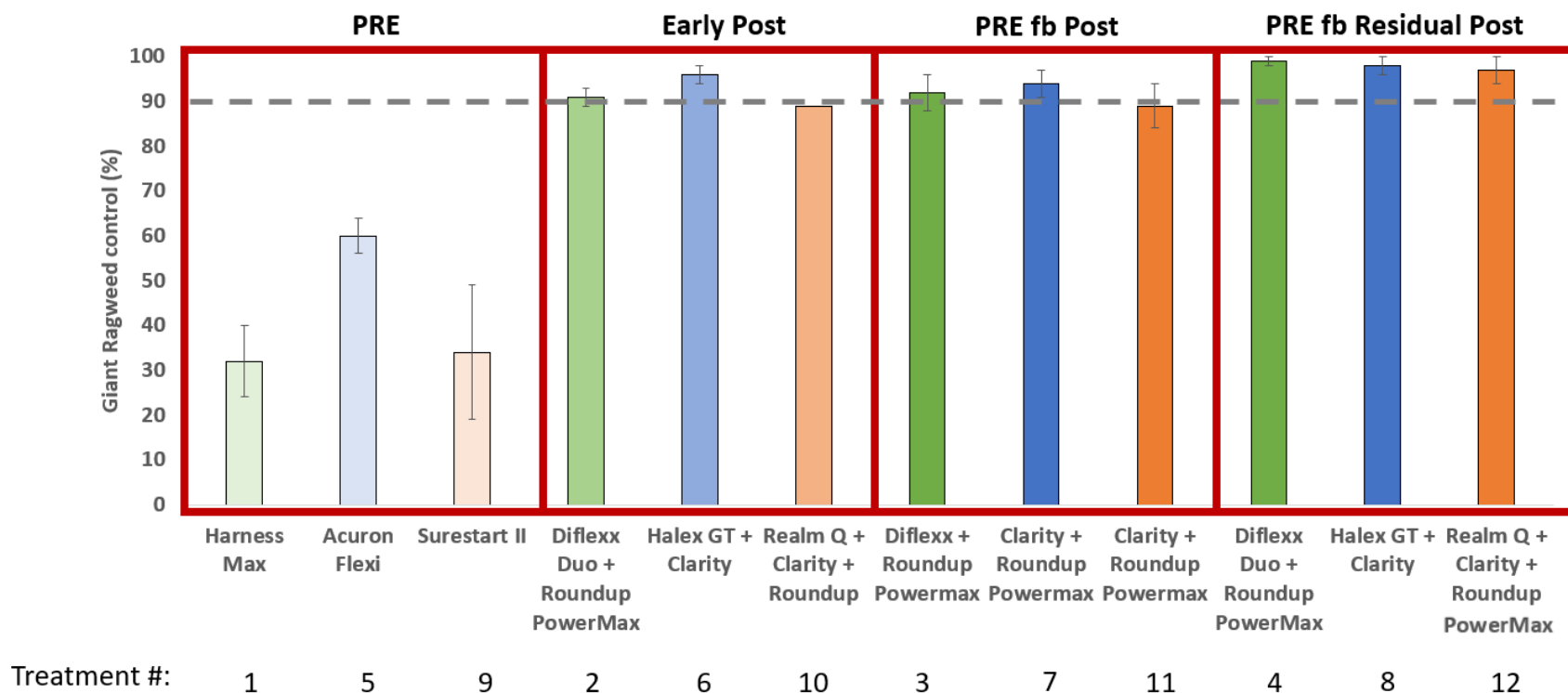
Waterhemp Control 42 DAT (corn, R1 stage) Lancaster, WI 2019



1 Year Data

Preliminary Results – Not for Publication

Giant Ragweed Control 42 DAT (corn, R1 stage) Janesville, WI 2018



1 Year Data

Preliminary Results – Not for Publication

Preemergence Evaluation for Waterhemp Residual Control - Soybean

Combined Preliminary Weed Control Ratings		Waterhemp	
SOA Group	Soybean growth stage (days after treatment)	V2-V3* (25 DAT)	R1* (50 DAT)
	Herbicide and application rate (ac ⁻¹)	Relative Rank	
2	Pursuit (4 fl oz)	5	5
2	Classic (3 oz)	5	5
2	FirstRate (0.6 oz)	5	5
5	Tricor DF (10.7 oz)	1	2
14	Spartan (8 fl oz)	1	2
14	Valor SX (3 oz)	1	1
14	Sharpen (1 fl oz)	3	3
15	Warrant (24 fl oz)	4	4
15	Warrant (48 fl oz)	2	3
15	Dual II Magnum (13.4 fl oz)	2	1
15	Dual II Magnum (26.7 fl oz)	1	1
15	Outlook (9 fl oz)	1	2
15	Outlook (18 fl oz)	1	1
15	Zidua (1.5 oz)	1	2
15	Zidua (3 oz)	1	1
2 & 14	Authority Assist (10 fl oz)	1	1
2 & 14	Sonic (6.45 oz)	1	1
2 & 14	Surveil (3.5 oz)	1	1
2 & 14	Valor XLT (3 oz)	1	2
14 & 15	Broadaxe XC (25 fl oz)	1	1
14 & 15	Authority MTZ (16 oz)	1	2
14 & 15	Authority Supreme (8 fl oz)	1	1
14 & 15	Verdict (5 fl oz)	1	2
14 & 15	Prefix (32 fl oz)	1	1
14 & 15	Fierce (3 oz)	1	1
5 & 15	Boundary (28.8 fl oz)	1	2
2 & 5	Canopy DF (2.25 oz)	3	5
2 & 14	Enlite (2.8 oz)	1	1
2 & 14	Afforia (2.5 oz)	1	1
2 & 5 & 14	Trivence (6 oz)	1	2
2 & 14 & 15	Zidua PRO (6 fl oz)	1	1
2 & 14 & 15	Fierce XLT (3.75 oz)	1	1
5 & 14 & 15	Fierce MTZ (16 fl oz)	1	1

Rank: (1) ≥ 90% control (2) 80-89 % (3) 70-79% (4) 60-69% (5) < 60%

*V2-V3 Data compiled from Lancaster (2018), Lancaster (2019), and Brooklyn (2019).

R1 Data compiled from Lancaster (2018) and Lancaster (2019).

Preemergence Evaluation for Giant Ragweed Residual Control - Soybean

Combined Preliminary Weed Control Ratings		Giant Ragweed	
SOA Group	Soybean growth stage (days after treatment)	V1 (25 DAT)	V6 (50 DAT)
	Herbicide and application rate (ac ⁻¹)	Relative Rank	
2	Pursuit (4 fl oz)	4	5
2	Classic (3 oz)	3	4
2	FirstRate (0.6 oz)	4	5
5	Tricor DF (10.7 oz)	5	5
14	Spartan (8 fl oz)	5	5
14	Valor SX (3 oz)	2	4
14	Sharpen (1 fl oz)	5	5
15	Warrant (48 fl oz)	5	5
15	Dual II Magnum (26.7 fl oz)	3	4
15	Outlook (18 fl oz)	5	4
15	Zidua (3 oz)	3	3
2 & 14	Authority Assist (10 fl oz)	3	4
2 & 14	Sonic (6.45 oz)	1	3
2 & 14	Surveil (3.5 oz)	2	3
2 & 14	Valor XLT (3 oz)	1	3
14 & 15	Broadaxe XC (25 fl oz)	3	3
14 & 15	Authority MTZ (16 oz)	2	3
14 & 15	Authority Supreme (8 fl oz)	4	5
14 & 15	Verdict (5 fl oz)	2	4
14 & 15	Prefix (32 fl oz)	2	4
14 & 15	Fierce (3 oz)	2	4
5 & 15	Boundary (28.8 fl oz)	3	3
2 & 5	Canopy DF (2.25 oz)	3	5
2 & 14	Enlite (2.8 oz)	2	3
2 & 14	Afforia (2.5 oz)	2	3
2 & 5 & 14	Trivence (6 oz)	1	2
2 & 14 & 15	Zidua PRO (6 fl oz)	2	3
2 & 14 & 15	Fierce XLT (3.75 oz)	1	3
5 & 14 & 15	Fierce MTZ (16 fl oz)	3	4

Rank: (1) ≥ 90% control (2) 80-89 % (3) 70-79% (4) 60-69% (5) < 60%

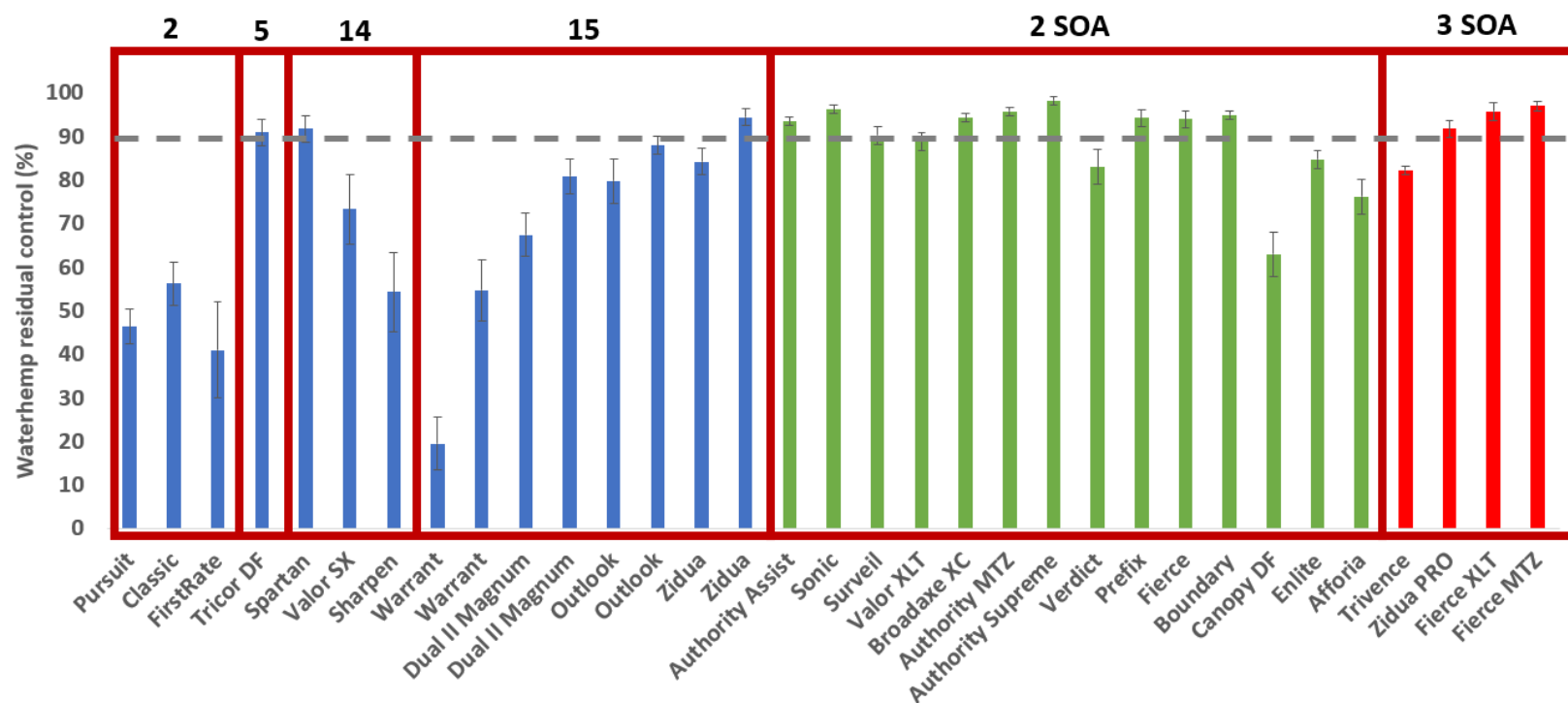
1 Year Data

Preliminary Results – Not for Publication

Preemergence Evaluation for Giant Ragweed and Waterhemp Residual Control - Soybean

SOA Group	Herbicide and application rate (ac ⁻¹)	Active ingredient [ai concentration lb gal ⁻¹]	Equivalent Tank Mix (ac ⁻¹)
2	Pursuit (4 fl oz)	imazethapyr [2.0]	NA
2	Classic (3 oz)	chlorimuron-ethyl [25%]	NA
2	FirstRate (0.6 oz)	cloransulam-methyl [84%]	NA
5	Tricor DF (10.7 oz)	metribuzin [75%]	NA
14	Spartan (8 fl oz)	sulfentrazone [4.0]	NA
14	Valor SX (3 oz)	flumioxazin [51%]	NA
14	Sharpen (1 fl oz)	saflufenacil [2.85]	NA
15	Warrant (24 fl oz)	acetochlor [3.0]	NA
15	Warrant (48 fl oz)	acetochlor [3.0]	NA
15	Dual II Magnum (13.4 fl oz)	S-metolachlor [7.64]	NA
15	Dual II Magnum (26.7 fl oz)	S-metolachlor [7.64]	NA
15	Outlook (9 fl oz)	dimethenamid-P [6.0]	NA
15	Outlook (18 fl oz)	dimethenamid-P [6.0]	NA
15	Zidua (1.5 oz)	pyroxasulfone [85%]	NA
15	Zidua (3 oz)	pyroxasulfone [85%]	NA
2 & 14	Authority Assist (10 fl oz)	imazethapyr + sulfentrazone	3.3 fl oz Pursuit + 8.3 fl oz Spartan
2 & 14	Sonic (6.45 oz)	cloransulam-methyl + sulfentrazone	0.6 oz FirstRate + 8.0 fl oz Spartan
2 & 14	Surveil (3.5 oz)	cloransulam-methyl + flumioxazin	0.5 oz FirstRate + 2.5 oz Valor SX
2 & 14	Valor XLT (3 oz)	chlorimuron-ethyl + flumioxazin	1.24 oz Classic + 1.8 oz Valor SX
14 & 15	Broadaxe XC (25 fl oz)	sulfentrazone + S-metolachlor	4.4 fl oz Spartan + 20.6 fl oz Dual II Magnum
5 & 14	Authority MTZ (16 oz)	metribuzin + sulfentrazone	3.63 oz Tricor DF + 3.63 fl oz Spartan
14 & 15	Authority Supreme (8 fl oz)	sulfentrazone + pyroxasulfone	4.15 fl oz Spartan + 2.45 oz Zidua
14 & 15	Verdict (5 fl oz)	saflufenacil + dimethenamid-P	1.0 fl oz Sharpen + 4.15 fl oz Outlook
14 & 15	Prefix (32 fl oz)	fomesafen + S-metolachlor	16.2 fl oz Flexstar + 18.2 fl oz Dual II Magnum
14 & 15	Fierce (3 oz)	flumioxazin + pyroxasulfone	2.08 oz Valor SX + 1.60 oz Zidua
5 & 15	Boundary (28.8 fl oz)	metribuzin + S-metolachlor	6.0 oz Tricor DF + 19.8 fl oz Dual II Magnum
2 & 5	Canopy DF (2.25 oz)	chlorimuron-ethyl + metribuzin	1.0 oz Classic + 1.95 oz Tricor DF
2 & 14	Enlite (2.8 oz)	chlorimuron-ethyl + thifensulfuron-methyl + flumioxazin	0.32 oz Classic + 0.05 oz Harmony + 2.0 oz Valor SX
2 & 14	Afforia (2.5 oz)	thifensulfuron-methyl + tribenuron-methyl + flumioxazin	0.25 oz Harmony + 0.25 oz Express + 2.0 oz Valor SX
2 & 5 & 14	Trivence (6 oz)	chlorimuron-ethyl + metribuzin + flumioxazin	0.94 oz Classic + 3.56 oz Tricor DF + 1.5 oz Valor SX
2 & 14 & 15	Zidua PRO (6 fl oz)	imazethapyr + saflufenacil + pyroxasulfone	4.0 fl oz Pursuit + 1.0 oz Sharpen + 2.0 oz Zidua
2 & 14 & 15	Fierce XLT (3.75 oz)	chlorimuron-ethyl + flumioxazin + pyroxasulfone	0.94 oz Classic + 1.78 oz Valor SX + 1.37 oz Zidua
5 & 14 & 15	Fierce MTZ (16 fl oz)	metribuzin + flumioxazin + pyroxasulfone	6.0 fl oz metribuzin + 2.0 oz Valor SX + 1.5 oz Zidua

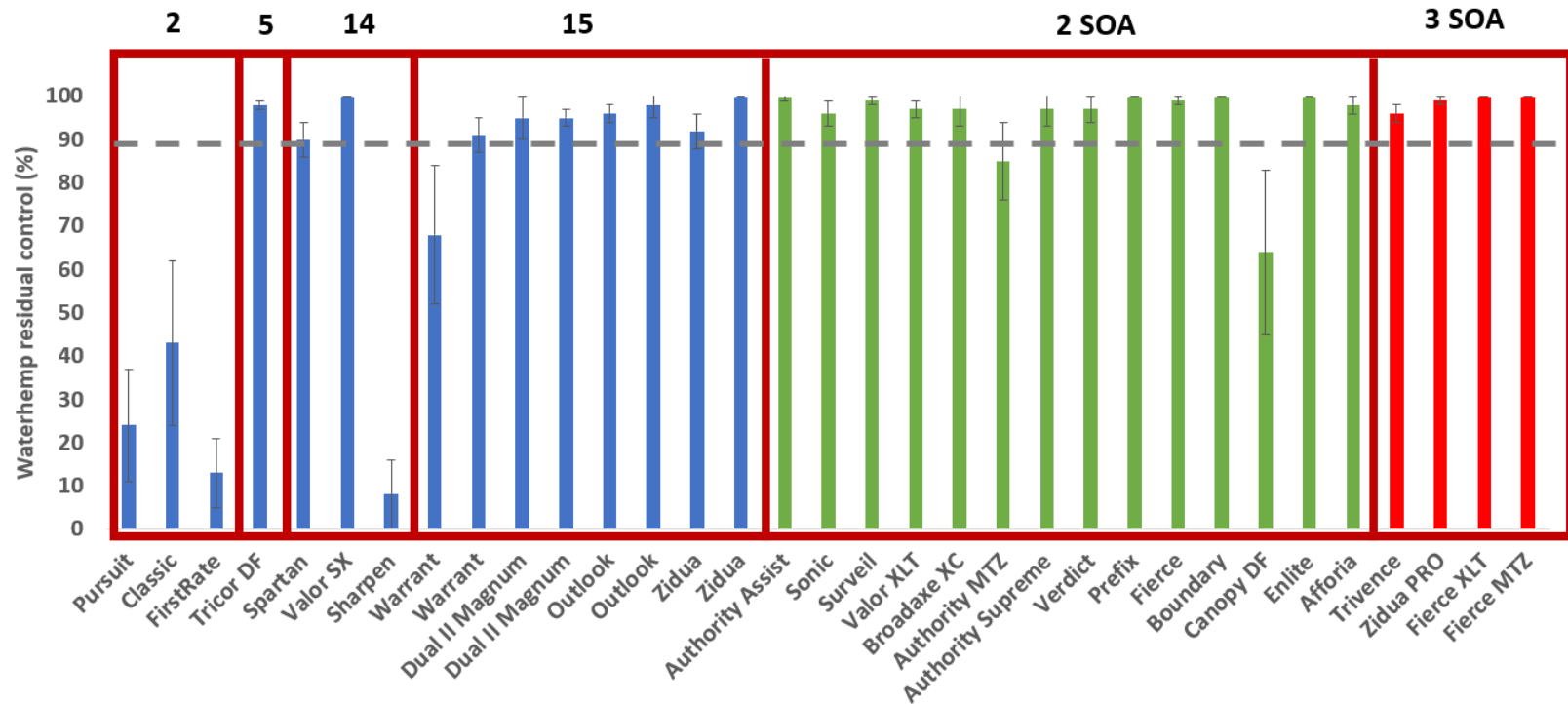
Waterhemp Residual Control 25 DAT (soybean, V3 stage) Brooklyn, WI 2019



1 Year Data

Preliminary Results – Not for Publication

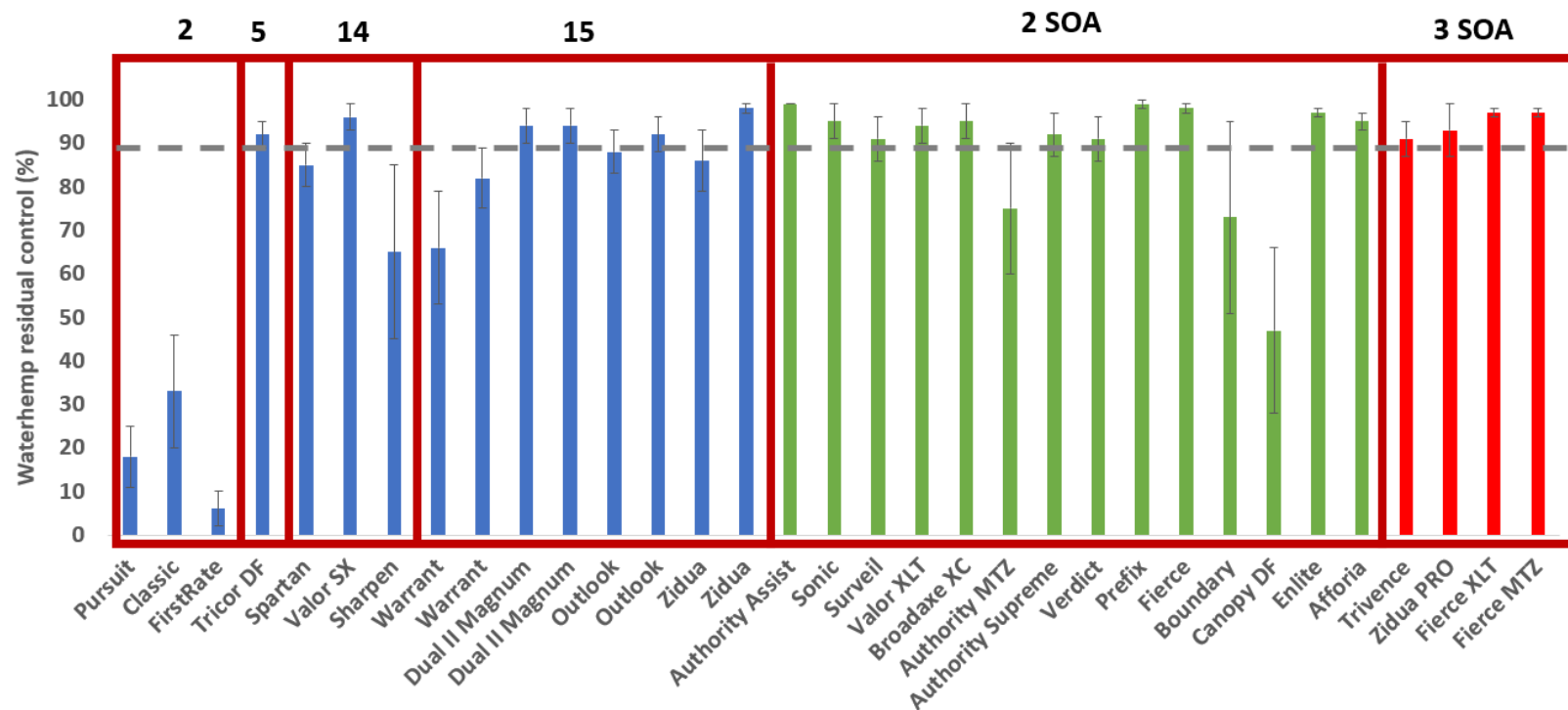
Waterhemp Residual Control 25 DAT (soybean, V3 stage) Lancaster, WI 2018



1 Year Data

Preliminary Results – Not for Publication

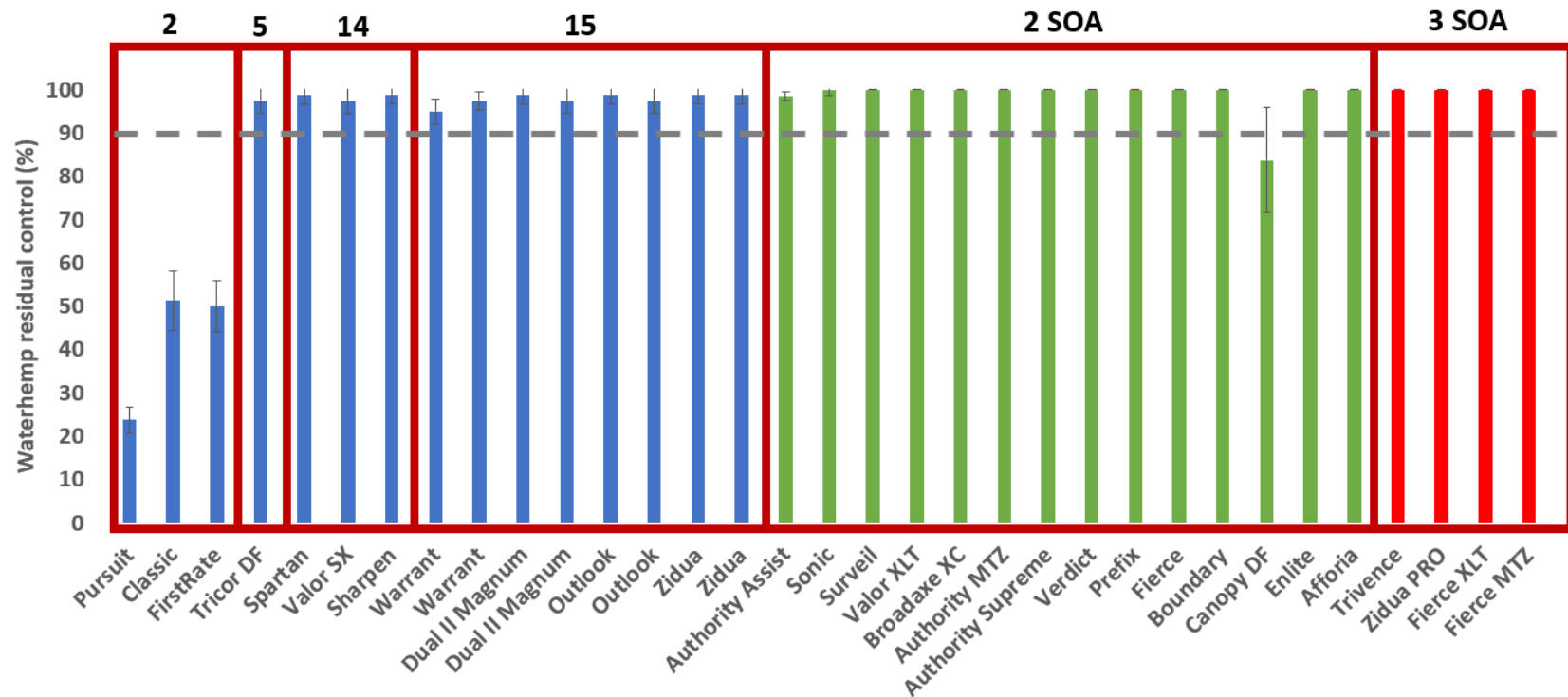
Waterhemp Residual Control 50 DAT (soybean, R2 stage) Lancaster, WI 2018



1 Year Data

Preliminary Results – Not for Publication

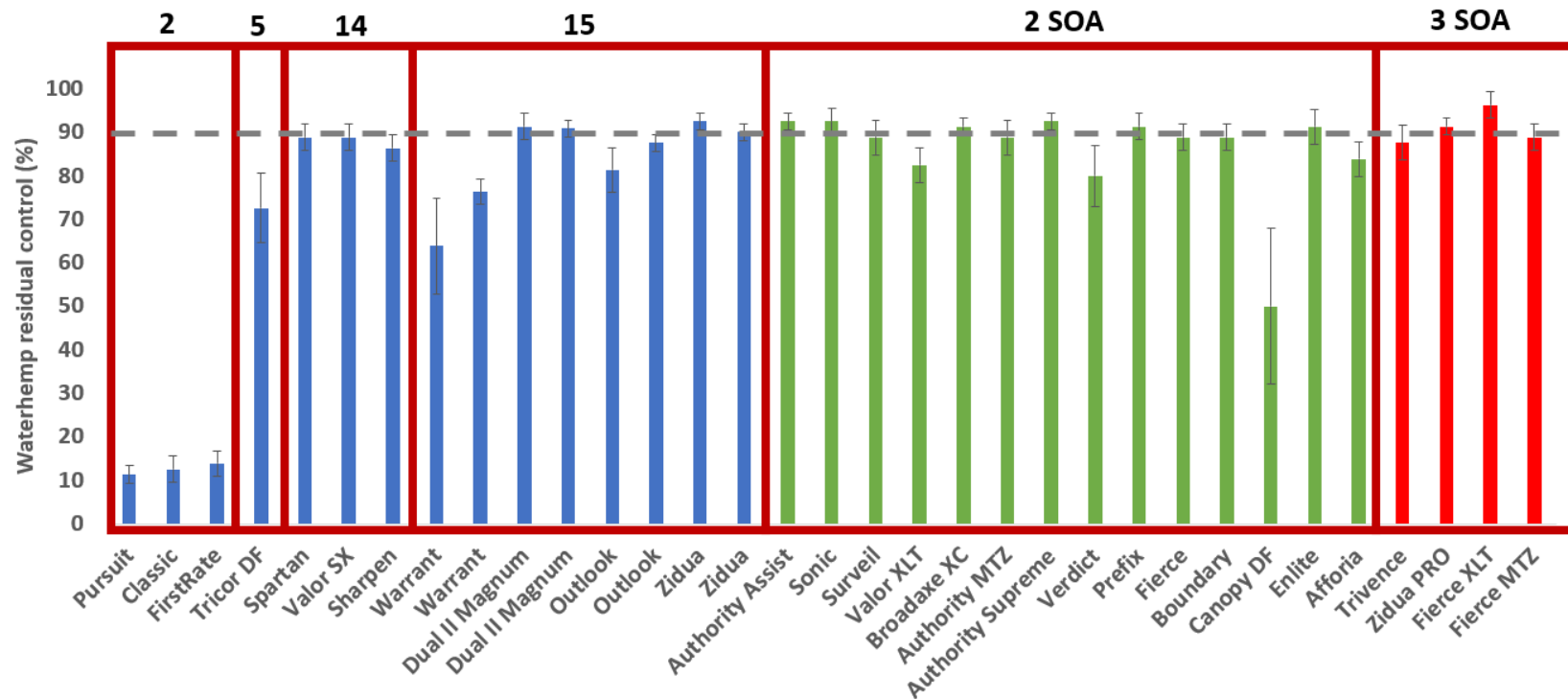
Waterhemp Residual Control 25 DAT (soybean, V2 stage) Lancaster, WI 2019



1 Year Data

Preliminary Results – Not for Publication

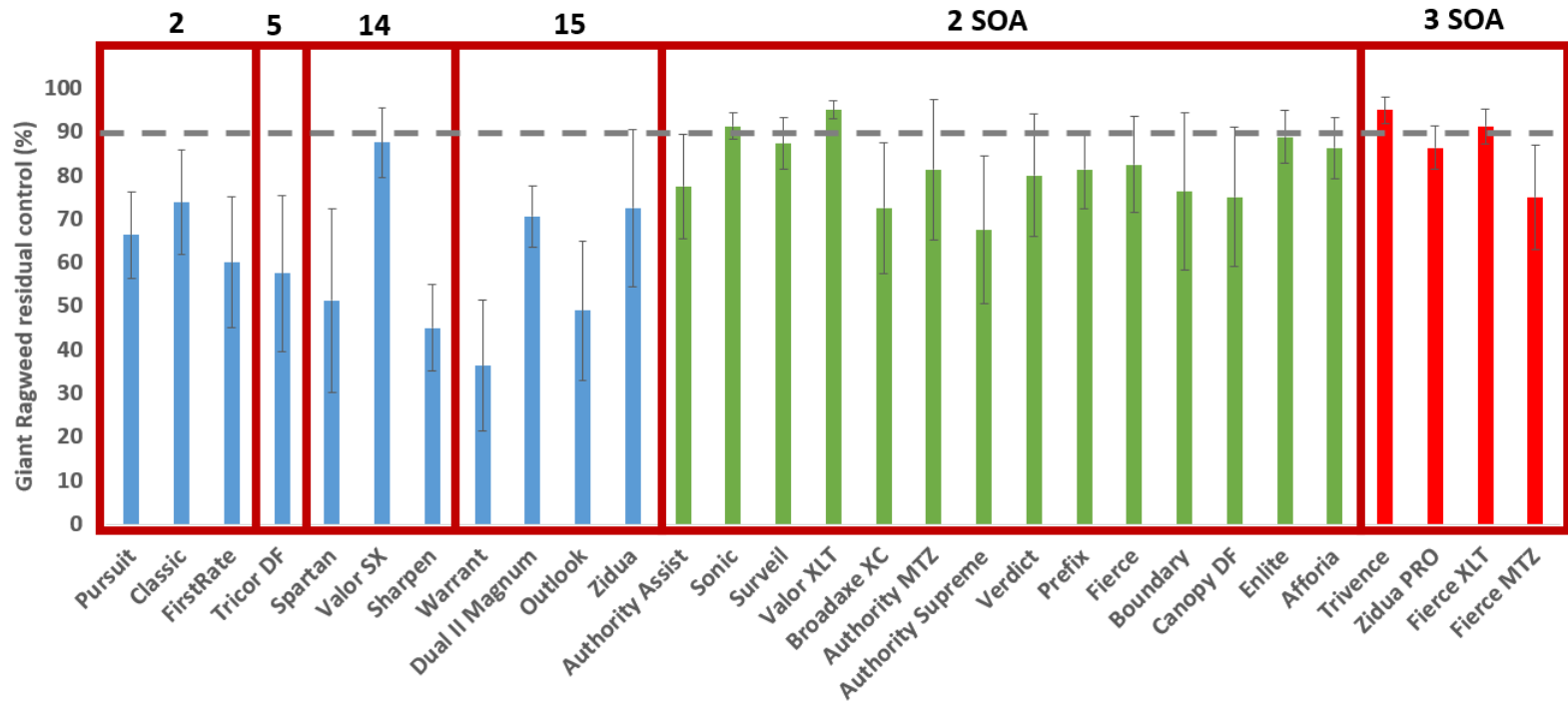
Waterhemp Residual Control 50 DAT (soybean, R1 stage) Lancaster, WI 2019



1 Year Data

Preliminary Results – Not for Publication

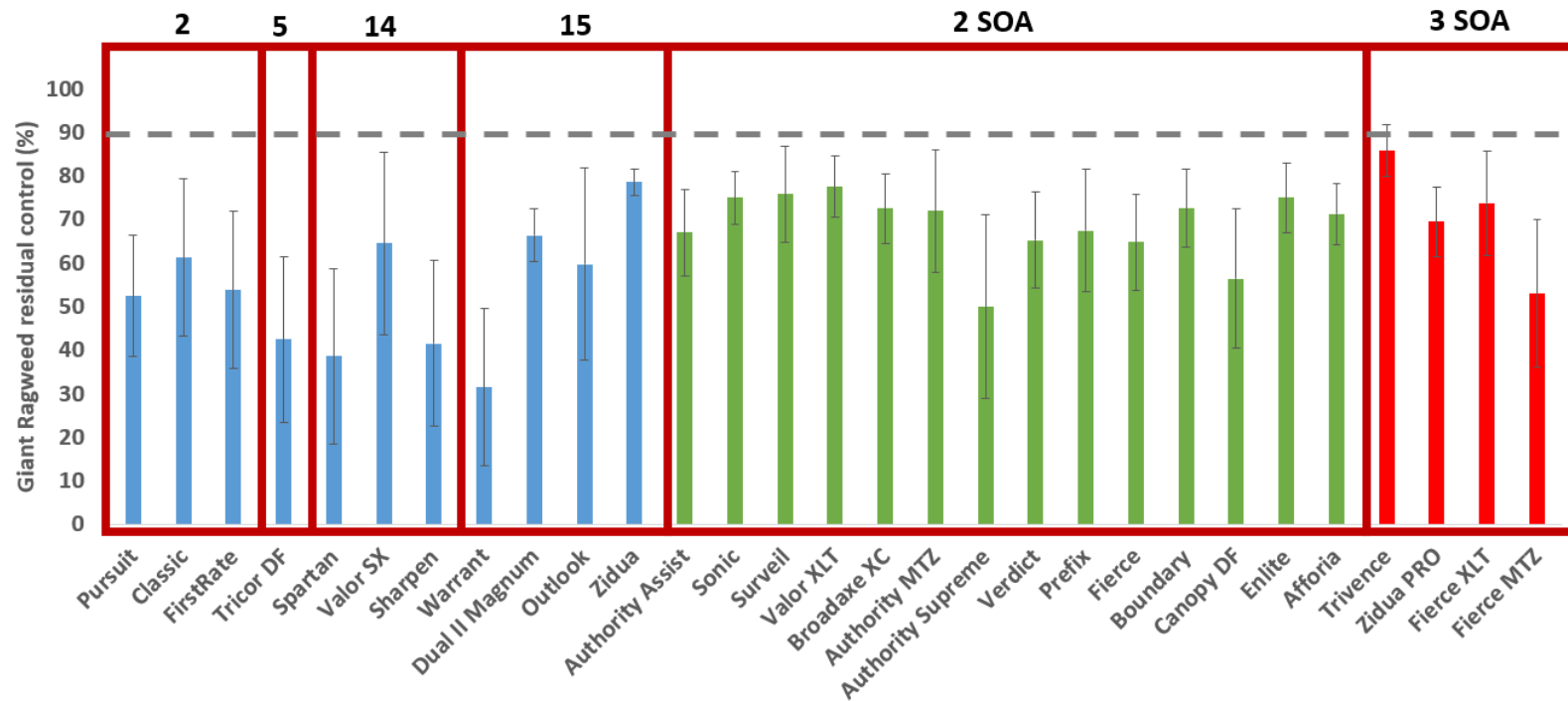
Giant Ragweed Residual Control 25 DAT (soybean, V1 stage) Janesville, WI 2019



1 Year Data

Preliminary Results – Not for Publication

Giant Ragweed Residual Control 50 DAT (soybean, V6 stage) Janesville, WI 2019



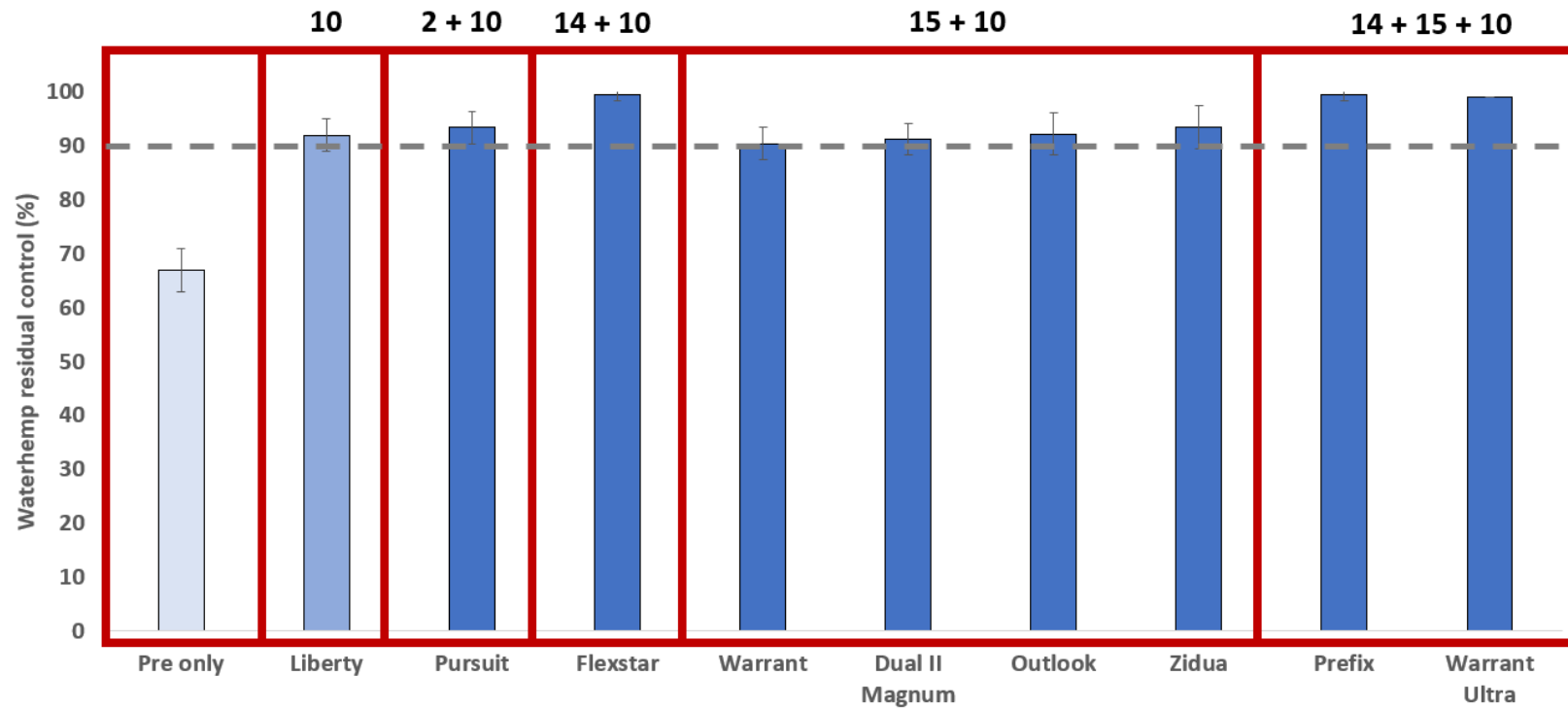
1 Year Data

Preliminary Results – Not for Publication

Systems Approach for Weed Management – Soybean

Treatments:	PRE (application rate ac ⁻¹)	Post (application rate ac ⁻¹)
1	Authority MTZ (12 oz) [metribuzin + sulfentrazone] 5 & 14	-
2		Liberty (32 fl oz) [glufosinate] 10
3		Pursuit (4 fl oz) + Liberty (32 fl oz) [imazethapyr + glufosinate] 2 & 10
4		Flexstar (16 fl oz) + Liberty (32 fl oz) [fomesafen + glufosinate] 14 & 10
5		Warrant (48 fl oz) + Liberty (32 fl oz) [acetochlor + glufosinate] 15 & 10
6		Dual II Magnum (20 fl oz) + Liberty (32 fl oz) [S-metolachlor + glufosinate] 15 & 10
7		Outlook (10 fl oz) + Liberty (32 fl oz) [dimethenamid-P + glufosinate] 15 & 10
8		Zidua (1.5 oz) + Liberty (32 fl oz) [pyroxasulfone + glufosinate] 15 & 10
9		Prefix (32 fl oz) + Liberty (32 fl oz) [fomesafen + S-metolachlor + glufosinate] 14 & 15 & 10
10		Warrant Ultra (50 fl oz) + Liberty (32 fl oz) [fomesafen + acetochlor + glufosinate] 14 & 15 & 10

Waterhemp Residual Control 14 DAT (soybean, V4 stage) Brooklyn, WI 2019



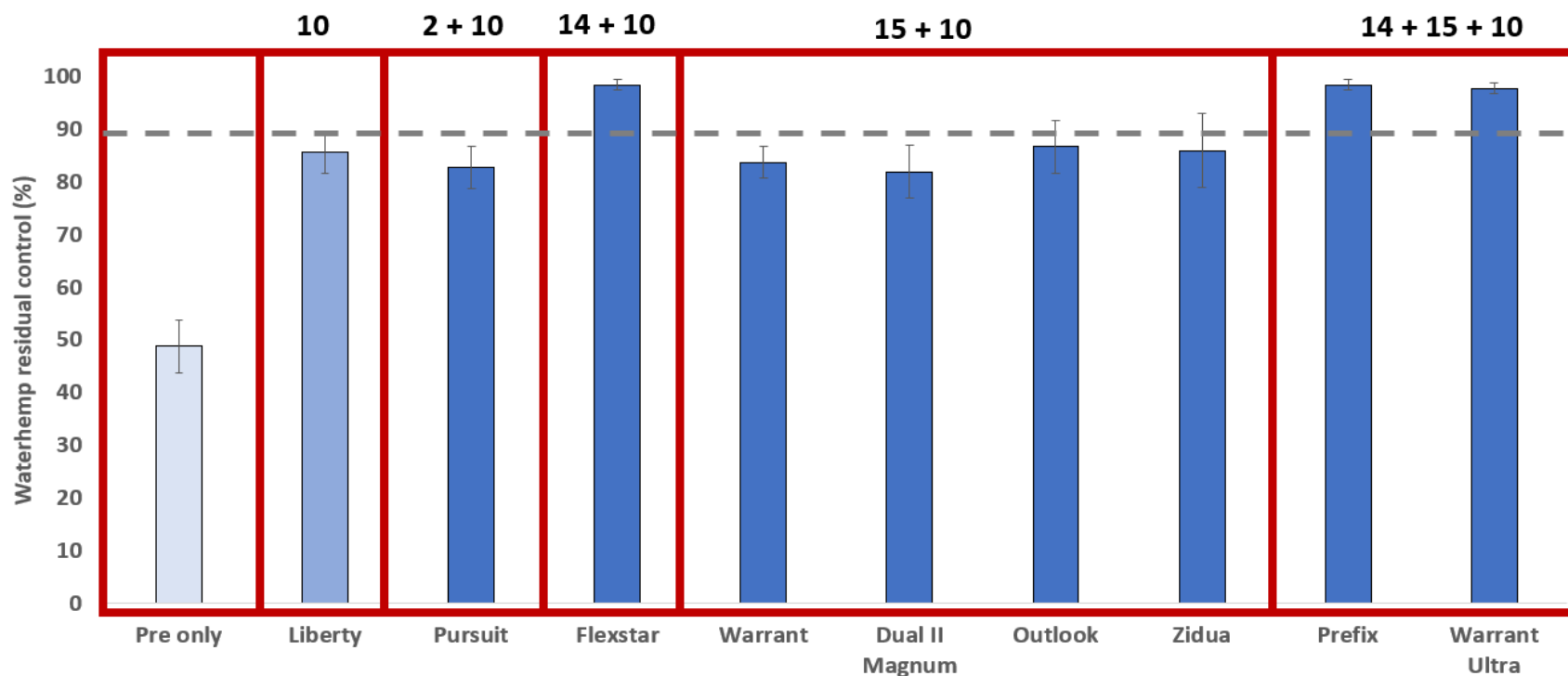
PRE: Authority MTZ 12 fl oz/A

POST: Tank mixed with Liberty 32 fl oz/A

1 Year Data

Preliminary Results – Not for Publication

Waterhemp Residual Control 35 DAT (soybean, R1 stage) Brooklyn, WI 2019



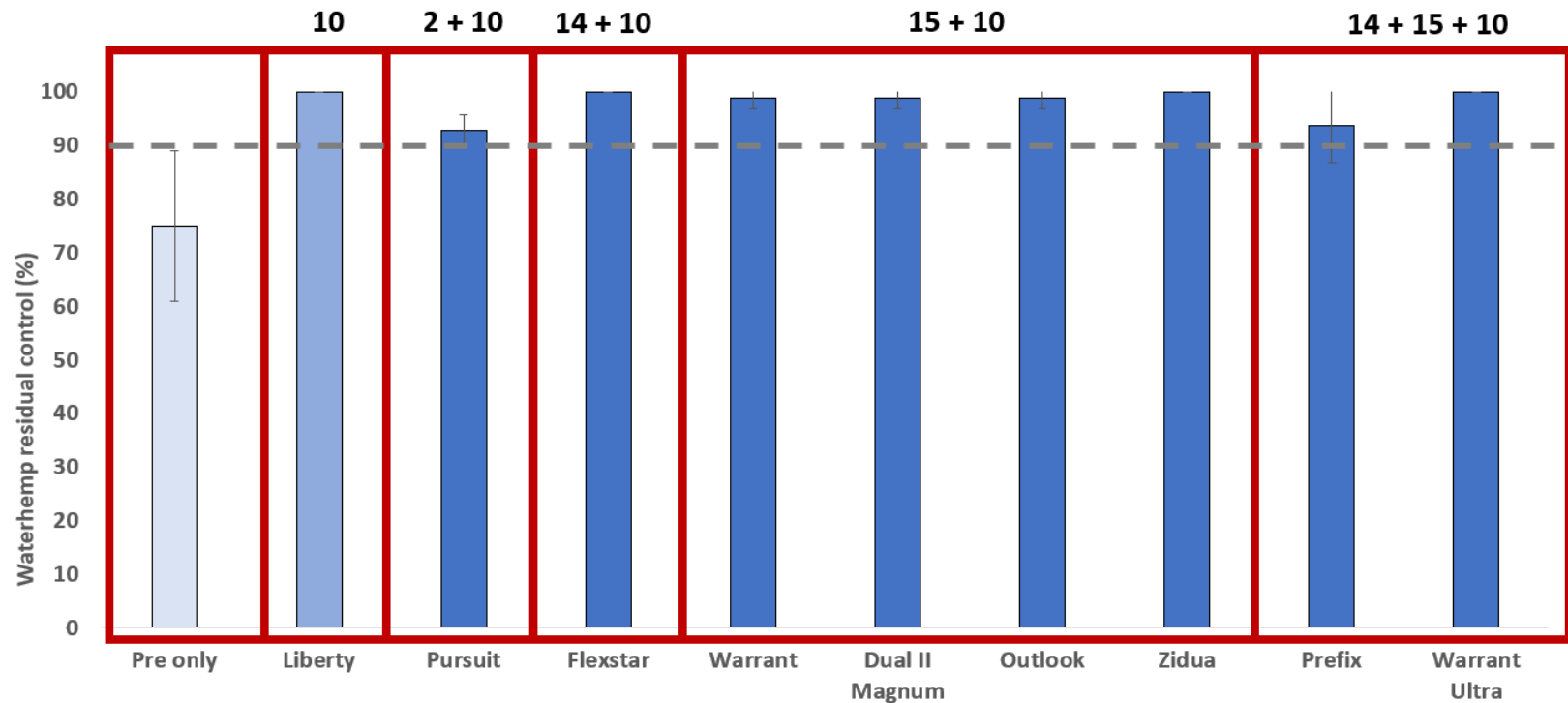
PRE: Authority MTZ 12 fl oz/A

POST: Tank mixed with Liberty 32 fl oz/A

1 Year Data

Preliminary Results – Not for Publication

Waterhemp Residual Control 14 DAT (soybean, V4 stage) Lancaster, WI 2019



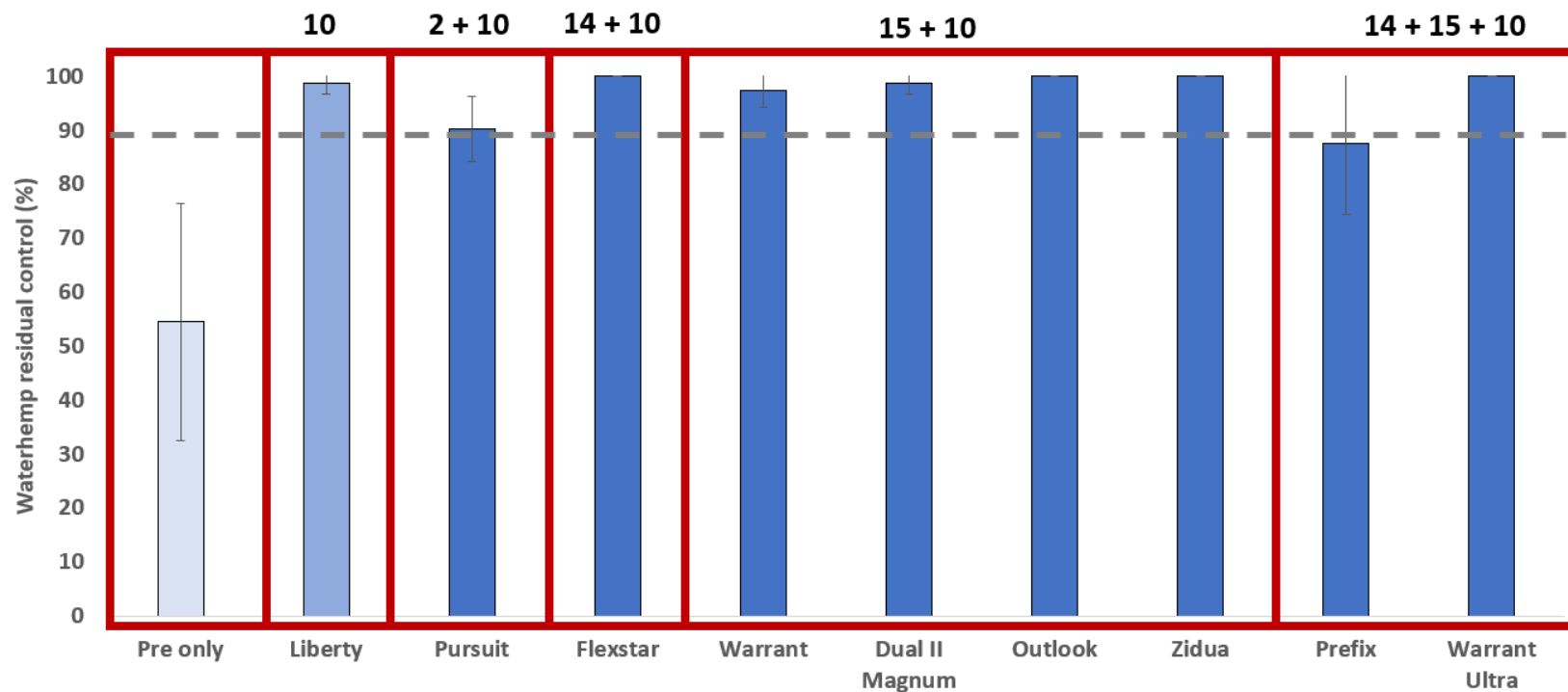
PRE: Authority MTZ 12 fl oz/A

POST: Tank mixed with Liberty 32 fl oz/A

1 Year Data

Preliminary Results – Not for Publication

Waterhemp Residual Control 25 DAT (soybean, R1 stage) Lancaster, WI 2019



PRE: Authority MTZ 12 fl oz/A

POST: Tank mixed with Liberty 32 fl oz/A

1 Year Data

Preliminary Results – Not for Publication

Burndown Management of Waterhemp – Bareground

Preliminary Weed Control Ratings		Waterhemp	
MOA Group	Days After Treatment Location	14 DAT Brooklyn	14 DAT Lancaster
	Herbicide and application rate (ac⁻¹)	Relative Rank	
2	Pursuit (4 fl oz)	5	5
2	Classic (0.75 oz)	5	5
4	FirstRate (0.3 oz)	5	5
2	Python (1 oz)	5	5
4	Xtendimax (22 fl oz)	4	2
4	Enlist One (24 fl oz)	3	1
4	Stinger (6 fl oz)	5	5
5	Aatrex (32 fl oz)	5	4
6	Buctril (24 fl oz)	5	5
6	Basagran 5L (25.6 fl oz)	5	5
9	Roundup Powermax (32 fl oz)	5	2
10	Liberty (32 fl oz)	4	1
14	Cobra (12.5 fl oz)	1	1
14	Flexstar (16 fl oz)	1	1
14	Cadet (0.9 fl oz)	4	3
14	Resource (8 fl oz)	4	1
27	Callisto (3 fl oz)	3	1
27	Laudis (3 fl oz)	2	1
27	Armezon (0.75 fl oz)	3	1
27	Balance Flexx (5 fl oz)	5	1

Rank: (1) ≥ 90% control (2) 80-89 % (3) 70-79% (4) 60-69% (5) < 60%

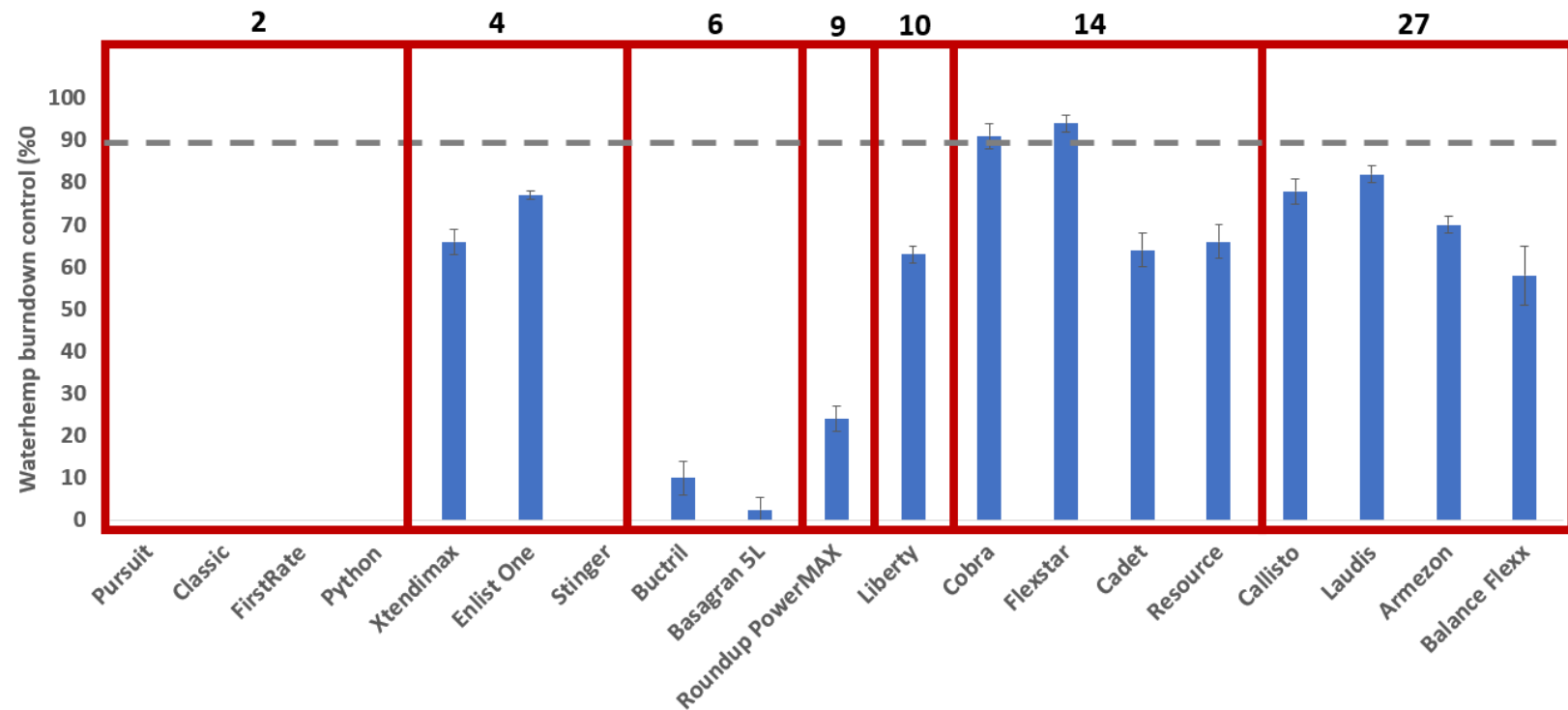
1 Year Data

Preliminary Results – Not for Publication

Burndown Management of Waterhemp – Bareground

MOA Group	Herbicide and application rate (ac⁻¹)	Active ingredient [ai concentration lb gal⁻¹]
2	Pursuit (4 fl oz)	imazethapyr [2.0]
2	Classic (0.75 oz)	chlorimuron-ethyl [25%]
4	FirstRate (0.3 oz)	cloransulam-methyl [84%]
2	Python (1 oz)	flumetsulam [80%]
4	Xtendimax (22 fl oz)	dicamba [2.9]
4	Enlist One (24 fl oz)	2, 4-D [3.8]
4	Stinger (6 fl oz)	clopyralid 3.0]
5	Aatrex (32 fl oz)	atrazine [4.0]
6	Buctril (24 fl oz)	bromoxynil [2.0]
6	Basagran 5L (25.6 fl oz)	bentazon [5.0]
9	Roundup Powermax (32 fl oz)	glyphosate [5.5]
10	Liberty (32 fl oz)	glufosinate [2.34]
14	Cobra (12.5 fl oz)	lactofen [2.0]
14	Flexstar (16 fl oz)	fomesafen [1.88]
14	Cadet (0.9 fl oz)	fluthiacet-methyl [0.91]
14	Resource (8 fl oz)	flumiclorac [0.86]
27	Callisto (3 fl oz)	mesotrione [4.0]
27	Laudis (3 fl oz)	tembotrione [3.5]
27	Armezon (0.75 fl oz)	topramezone [2.8]
27	Balance Flexx (5 fl oz)	isoxaflutole [2.0]

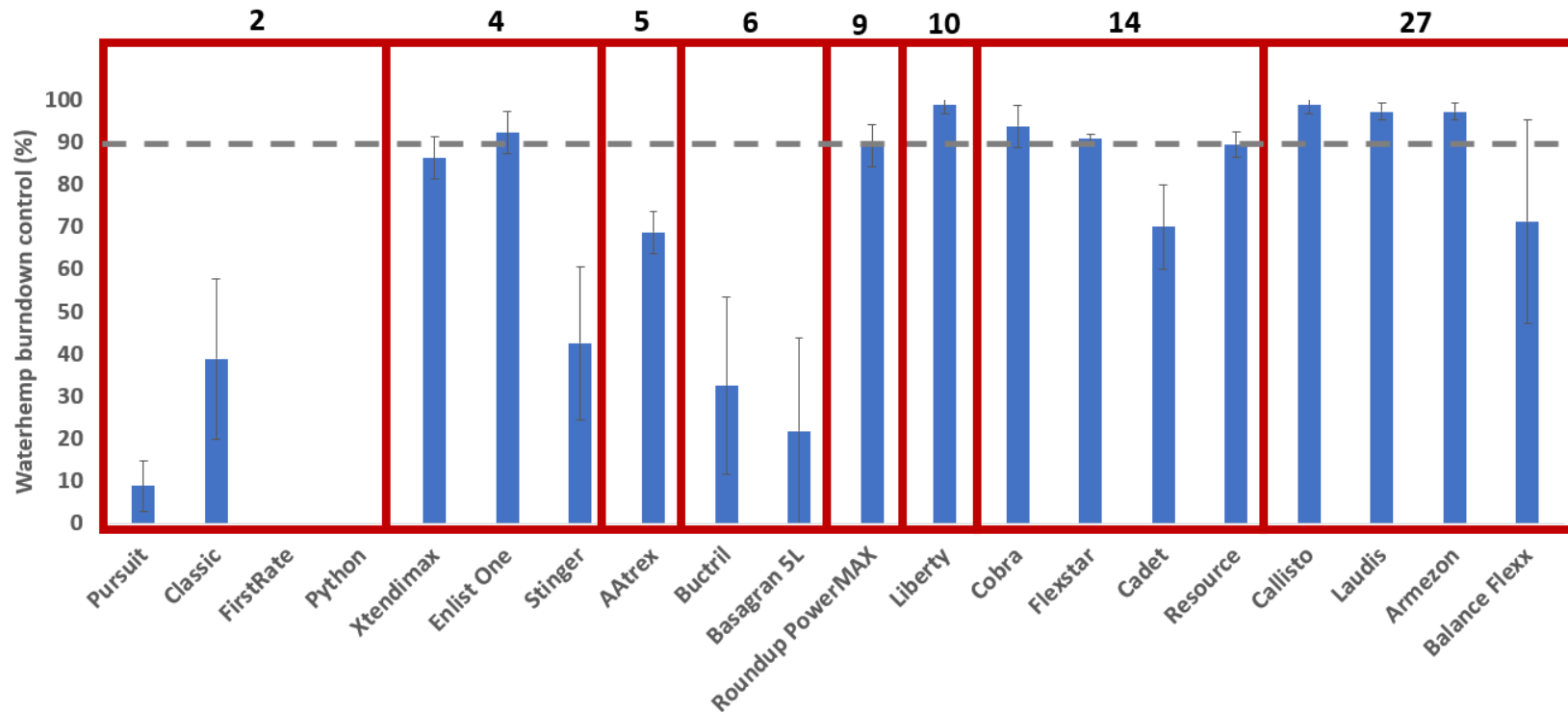
Waterhemp Burndown Control 14 DAT Brooklyn, WI 2019



1 Year Data

Preliminary Results – Not for Publication

Waterhemp Burndown Control 14 DAT Lancaster, WI 2019



1 Year Data

Preliminary Results – Not for Publication

Trial Site Description:

Site (Year) Crop – Trial	Previous Crop	Soil Type	% OM	pH	Date Planted	Planting Depth (in)	Planting Population
Brooklyn (19) Corn – V2	Soybean	Sebewa	4.3	6.4	5/31	2.0	35,000
Brooklyn (19) Soy – PRE	Soybean	Kegonsa	2.0	7.1	5/31	1.0	140,000
Brooklyn (19) Soy – POST	Soybean	Kegonsa	2.0	7.1	5/31	1.0	140,000
Brooklyn (19) Bareground 2-3" Waterhemp	Soybean	Kegonsa	2.0	7.1	-	-	-
Janesville (19) Corn – V2	Soybean	Plano	3.3	6.7	5/14	2.0	34,000
Janesville (18) Corn – POST	Corn	Plano	3.2	6.5	5/25	2.0	35,000
Janesville (19) Corn – POST	Soybean	Plano	3.3	6.7	5/14	2.0	34,000
Lancaster (19) Corn – POST	Soybean	Fayette	2.4	7.3	5/23	2.0	32,500
Lancaster (18) Soy – PRE	Corn	Fayette	2.4	7.3	5/24	1.5	145,000
Lancaster (19) Soy – PRE	Corn	Fayette	2.3	7.0	5/23	1.5	140,000
Lancaster (19) Soy – POST	Corn	Orion	2.6	7.5	5/23	1.5	140,000
Lancaster (19) Bareground 2-3" Waterhemp	Soybean	Fayette	2.4	7.3	-	-	-

Herbicide Application Information:

Site (Year)– Crop - Trial	Herbicide Application Date	Air Temperature (F)	Wind Speed (mph)	Nozzle Tips	Nozzle Spacing (in)	Boom Height (in)	Boom Width (ft)
Brooklyn (19) Corn – V2	6/13	82	6-9 SW	FLAFXR 11002	20	20	10
Brooklyn (19) Soy – PRE	6/3	71	2-8 E	FLAFXR 11002	20	20	6.67
Brooklyn (19) Soy – POST	6/27	81	2-4 NE	AIXR 110015	20	20	10
Brooklyn (19) Bareground 2-3" Waterhemp	6/27	82	2-4 NE	TTI 110015	20	20	6.67
Janesville (19) Corn – V2	5/30	74	3-4 W	FLAFXR 11002	20	20	10
Janesville (18) Corn – POST	6/12	73	1-3 NE	TTI 110015	20	20	10
	6/15	72	4-7 SE				
Janesville (19) Corn – POST	6/3	65	6-11 SE	TTI 110015	20	20	10
	6/13	70	6-9 NW				
Lancaster (19) Corn – POST	6/11	70	3-4 S W	XR 11002	20	20	10
	6/25	75	4-5 SW				
Lancaster (18) Soy – PRE	5/25	78	1-3 NW	XR 11002	20	20	6.67
Lancaster (19) Soy – PRE	5/26	79	1-3 W	XR 11002	20	20	6.67
Lancaster (19) Soy – POST	7/5	86	2-4 NE	XR 11002	20	20	10
Lancaster (19) Bareground 2-3" Waterhemp	7/5	87	2-3 NW	XR 11002	20	20	6.67

Understanding Relative Rankings

Preliminary Weed Control Ratings		Giant Ragweed (Janesville, WI)	Waterhemp (Brooklyn, WI)
SOA Group	Corn growth stage (days after treatment)	V6 (25 DAT)	V7 (25 DAT)
	Herbicide and application rate (ac ⁻¹)	Relative Rank	
2	Python (1 oz)	5	5
2	Resolve SG (1.25 oz)	5	5
4	Stinger (6 fl oz)	5	5
4	Diflexx (10 fl oz)	5	5
5	Aatrex (28.8 fl oz)	5	3
5	Aatrex (57.6 fl oz)	5	3
5	Princep 4FL (64 fl oz)*	5	3
15	Harness (28.8 fl oz)	5	1
15	Dual II Magnum (32.1 fl oz)	5	3
15	Outlook (17.5 fl oz)	5	2
15	Zidua (3.25 fl oz)	5	4
27	Balance Flexx (4.5 fl oz)	5	3
27	Armezon (0.75 fl oz)	5	5
27	Callisto (2 fl oz)	5	4
27	Laudis (3 fl oz)	5	5
15 & 27	Armezon PRO (20 fl oz)	5	2
15 & 27	Harness Max (64 fl oz)	5	1
15 & 27	Acuron Flexi (64 fl oz)	5	1
2 & 27	Capreno (3 fl oz)	5	5
2 & 27	Corvus (5.6 fl oz)	5	3
2 & 27	Realm Q (4 oz)	5	4
4 & 27	Diflexx Duo (28 fl oz)	5	5
5 & 15	Bicep Lite II Magnum (56 fl oz)	5	1
5 & 15	Harness Xtra (64 fl oz)	5	1
2 & 4	Hornet WDG (4 oz)	5	5
14 & 15	Verdict (15 fl oz)*	5	1
9 & 15 & 27	Halex GT (64 fl oz)	5	1
4 & 15 & 27	Resicore (80 fl oz)	5	1
2 & 4 & 15	Surestart II (40 fl oz)	5	1
5 & 15 & 27	Acuron (80 fl oz)	5	1

27	Laudis (3 fl oz)	5	5
15 & 27	Armezon PRO (20 fl oz)	5	2
15 & 27	Harness Max (64 fl oz)	5	1
15 & 27	Acuron Flexi (64 fl oz)	5	1
2 & 27	Capreno (3 fl oz)	5	5
2 & 27	Corvus (5.6 fl oz)	5	3
2 & 27	Realm Q (4 oz)	5	4
4 & 27	Diflexx Duo (28 fl oz)	5	5
5 & 15	Bicep Lite II Magnum (56 fl oz)	5	1
5 & 15	Harness Xtra (64 fl oz)	5	1

Relative Weed Control Rankings:

(1) ≥ 90% weed control compared to non-treated control

(2) 80-89% weed control

(3) 70-79% weed control

(4) 60-69% weed control

(5) < 60% weed control

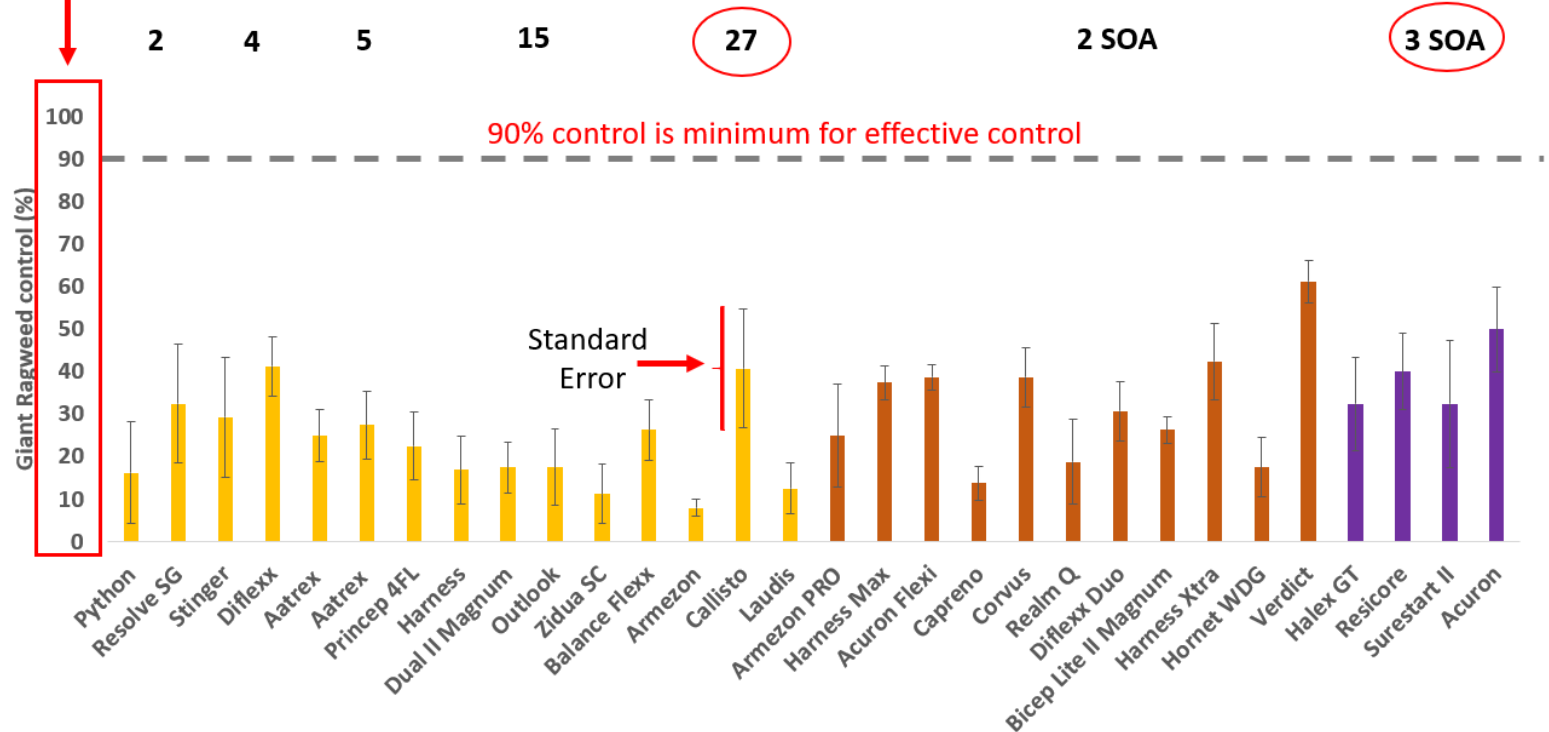
Preliminary Results – Not for Publication

Chart Interpretation Key

% Weed Control Compared to
Non-treated Control

Site of Action (SOA) Group

Product Contains
Multiple SOA



Preliminary Results – Not for Publication

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