

Project Goal: Evaluate herbicide programs to provide recommendations for XtendFlex soybean weed management in areas or situations where dicamba is not used.

Site Description:

Location: Brooklyn, WI	Crop: Soybean
Field #: OB-5	Variety: AG20XF1
Soil type: Kegonsa silt loam	Planting Date: 5/23
% OM: 1.6	Emergence Date: 6/6
pH: 6.7	Population: 140,000 seeds/acre
Fertilization: -	Depth: 1.25 in
Previous crop: Seed corn	Row spacing: 30 in
Tillage: Conventional	Plot Size: 10 x 30 ft
Weed species: gly-R waterhemp (AMATA); velvetleaf (ABUTH); fall panicum (PANDI)	

Herbicide Application Information:

Date:	5/24	6/29
Treatment:	PRE (A)	POST (B)
Air Temp (°F):	58	77
2" Soil Temp (°F):	60	75
Soil moisture [surface]:	moist	dry
RH %:	62	63
Cloud cover %	90	0
Wind speed (mph)/direction	2-6/SE	0-6/ENE
Rainfall (in) 1 wk after APP:	2.14"	1.32"
GPA:	15	15
PSI:	35	35
Nozzle:	TTI 110015	TT 110015
Nozzle spacing (in):	20	20
Boom Height (in):	20	25

Crop and weed information at application:

	Date:	5/17	6/29*
Soybean	Height:	-	3-6"
	Stage:	-	V4
waterhemp	Height:	-	1-12" Avg=4"
	Density:	-	0-6/ft ²
velvetleaf	Height:	-	1-6"
	Density:	-	0-1/ft ²
fall panicum	Height:	-	1-8"
	Density:	-	1-2/ft ²

*Weed density recorded from plots with a previous herbicide treatment.

Density and height varied depending on the effectiveness of the PRE-emergence herbicide

Trt #	Treatment	Formulation	SOA Group	Rate	App Timing	App Code
1	Untreated Check					
2	Warrant	3 lb/gal	15	48 fl oz/a	PRE	A
	Mauler	4 lb/gal	5	8 fl oz/a	PRE	A
	Roundup PowerMAX3	4.8 lbae/gal	9	30 fl oz/a	POST	B
	Warrant Ultra	3.45 lb/gal	14, 15	48 fl oz/a	POST	B
	AMS (liquid)			2.5% v/v	POST	B
3	Warrant	3 lb/gal	15	48 fl oz/a	PRE	A
	Mauler	4 lb/gal	5	8 fl oz/a	PRE	A
	Roundup PowerMAX3	4.8 lbae/gal	9	30 fl oz/a	POST	B
	Liberty	2.34 lb/gal	10	32 fl oz/a	POST	B
	Warrant	3 lb/gal	15	48 fl oz/a	POST	B
	AMS (liquid)			2.5% v/v	POST	B
4	Warrant	3 lb/gal	15	48 fl oz/a	PRE	A
	Mauler	4 lb/gal	5	8 fl oz/a	PRE	A
	Liberty	2.34 lb/gal	10	32 fl oz/a	POST	B
	Warrant	3 lb/gal	15	48 fl oz/a	POST	B
	AMS (liquid)			2.5% v/v	POST	B
5	Warrant	3 lb/gal	15	48 fl oz/a	PRE	A
	Mauler	4 lb/gal	5	8 fl oz/a	PRE	A
	Liberty	2.34 lb/gal	10	32 fl oz/a	POST	B
	Warrant Ultra	3.45 lb/gal	14, 15	48 fl oz/a	POST	B
	AMS (liquid)			2.5% v/v	POST	B
6	Warrant Ultra	3.45 lb/gal	14, 15	48 fl oz/a	PRE	A
	Roundup PowerMAX3	4.8 lbae/gal	9	30 fl oz/a	POST	B
	Warrant	3 lb/gal	15	48 fl oz/a	POST	B
	AMS (liquid)			2.5% v/v	POST	B
7	Warrant Ultra	3.45 lb/gal	14, 15	48 fl oz/a	PRE	A
	Roundup PowerMAX3	4.8 lbae/gal	9	30 fl oz/a	POST	B
	Liberty	2.34 lb/gal	10	32 fl oz/a	POST	B
	Warrant	3 lb/gal	15	48 fl oz/a	POST	B
	AMS (liquid)			2.5% v/v	POST	B
8	Fierce EZ	3.04 lb/gal	14, 15	6 fl oz/a	PRE	A
	Roundup PowerMAX3	4.8 lbae/gal	9	30 fl oz/a	POST	B
	Liberty	2.34 lb/gal	10	32 fl oz/a	POST	B
	Warrant	3 lb/gal	15	48 fl oz/a	POST	B
	AMS (liquid)			2.5% v/v	POST	B
9	Fierce EZ	3.04 lb/gal	14, 15	6 fl oz/a	PRE	A
	Roundup PowerMAX3	4.8 lbae/gal	9	30 fl oz/a	POST	B
	Warrant Ultra	3.45 lb/gal	14, 15	48 fl oz/a	POST	B
	AMS (liquid)			2.5% v/v	POST	B

Adjuvants: AMS (liquid) = AMSOL

Trt #	Treatment	Formulation	SOA Group	Rate	App Timing	App Code
10	Valor EZ	4 lb/gal	14	2 fl oz/a	PRE	A
	Mauler	4 lb/gal	5	8 fl oz/a	PRE	A
	Roundup PowerMAX3	4.8 lbae/gal	9	30 fl oz/a	POST	B
	Liberty	2.34 lb/gal	10	32 fl oz/a	POST	B
	Warrant	3 lb/gal	15	48 fl oz/a	POST	B
	AMS (liquid)			2.5% v/v	POST	B
11	Valor EZ	4 lb/gal	14	2 fl oz/a	PRE	A
	Mauler	4 lb/gal	5	8 fl oz/a	PRE	A
	Roundup PowerMAX3	4.8 lbae/gal	9	30 fl oz/a	POST	B
	Warrant Ultra	3.45 lb/gal	14, 15	48 fl oz/a	POST	B
	AMS (liquid)			2.5% v/v	POST	B

Adjuvants: AMS (liquid) = AMSOL

Trial Summary:

The trial was established at the O’Brien Hybrids farm located north of Brooklyn, WI to evaluate multiple 2-pass herbicide programs for weed control recommendations in XtendFlex soybean for areas or situations where dicamba is not used. There was minor (<3%) soybean injury from the PRE herbicides. Soybean injury was observed 14 days after the POST application (Table 9). Injury symptoms included leaf necrosis (burn) and leaf crinkling. Tank mixes with Warrant Ultra had the greatest % injury (~12%) while tank mixes without had ~7% injury.

The trial was conducted in a field with a population of glyphosate-resistant waterhemp. PRE applications of Fierce EZ (trts 8, 9) and Warrant Ultra (trts 6, 7) had greater residual waterhemp 36 days after application. (Table 9). POST waterhemp control varied considerably. Treatments without Liberty (glufosinate) averaged ~71% control while those with Liberty averaged 93%. Treatments that had greater levels of PRE residual control also tended to have greater levels of POST control, a trend that has been observed in multiple waterhemp trials over the past several years of research.

Yield differed among herbicide programs (Table 9). While a clear trend wasn’t immediately evident, treatments without Liberty yielded on average 65 bu acre⁻¹, while those with Liberty averaged 68 bu acre⁻¹.

Plot photos from throughout the growing season are available [XtendFlex Soybean Herbicide Program Recommendations without Dicamba](#) published on wiscweeds.info.

Table 9. Crop injury, weed control ratings, and soybean yield for trial #22-BRO-SB06 at Brooklyn, WI.^a

Trt #	Herbicide (rate acre ⁻¹)	Injury (%)		Waterhemp (%)				Velvetleaf (%)			Fall Panicum (%)			Yield ^b bu acre ⁻¹
		6/29	7/13	6/29	7/13	7/26	9/29	6/29	7/13	9/29	6/29	7/13	9/29	
1	Untreated Check	0	0	0	0	0	0	0	0	0	0	0	0	34 c
Two-Pass – PRE (5/24) fb POST (6/29)				POST				POST			POST			
2	Warrant (48 oz) + Mauler (8 oz) fb Roundup PM3 (30 oz) + Warrant Ultra (48 oz)*	2.3	9.8	55	50	67	58	82	100	100	74	100	100	65 ab
3	Warrant (48 oz) + Mauler (8 oz) fb Roundup PM3 (30 oz) + Liberty (32 oz) + Warrant (48 oz)*	2.0	6.8	60	90	92	93	77	100	100	75	100	100	71 a
4	Warrant (48 oz) + Mauler (8 oz) fb Liberty (32 oz) + Warrant (48 oz)*	2.5	7.3	59	85	89	87	83	100	99	64	100	100	68 ab
5	Warrant (48 oz) + Mauler (8 oz) fb Liberty (32 oz) + Warrant Ultra (48 oz)*	2.3	14.0	60	90	92	93	87	100	92	73	100	96	71 a
6	Warrant Ultra (48 oz) fb Roundup PM3 (30 oz) + Warrant (48 oz)*	2.3	6.3	79	80	83	79	82	100	100	81	100	100	65 ab
7	Warrant Ultra (48 oz) fb Roundup PM3 (30 oz) + Liberty (32 oz) + Warrant (48 oz)*	2.3	7.0	88	97	97	96	82	100	99	83	100	100	68 ab
8	Fierce EZ (6 oz) fb Roundup PM3 (30 oz) + Liberty (32 oz) + Warrant (48 oz)*	2.8	6.0	85	98	97	97	94	100	100	93	100	100	65 ab
9	Fierce EZ (6 oz) fb Roundup PM3 (30 oz) + Warrant Ultra (48 oz)*	2.3	12.8	88	81	83	83	94	100	100	94	100	100	67 ab
10	Valor EZ (2 oz) + Mauler (8 oz) fb Roundup PM3 (30 oz) + Liberty (32 oz) + Warrant (48 oz)*	2.3	6.8	67	95	95	93	87	100	100	81	100	100	67 ab
11	Valor EZ (2 oz) + Mauler (8 oz) fb Roundup PM3 (30 oz) + Warrant Ultra (48 oz)*	2.0	10.0	64	58	73	65	95	100	100	76	100	100	61 b
LSD ($\alpha=0.10$)		ns	1.6	10	10	4	8	9	ns	3	8	ns	2	9
p value		0.491	<.001	<.001	<.001	<.001	<.001	0.014	1.00	0.018	<.001	1.00	0.097	<.001

^aVisual control from 70-100% is illustrated on a color scale with green representing greater weed control values.

^bYield values with the same letter are not significantly different.

*All POST applications included liquid AMS at 2.5% v/v.