

Evaluation of Prefix as a component of a weed control program in soybean at Rochester, MN, in 2007.

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The objective of this trial was to evaluate Prefix herbicide programs for weed control in soybean in southeastern Minnesota. The research site was a Lawler loam series with a pH of 6.8 and soil test P and K levels of 12 ppm and 171 ppm, respectively. The field was spring disked and field cultivated prior to planting. The soybean variety, Dairyland DSR 199, was planted on May 17, 2007, at a depth of 1.5 inches in 30 inch rows at 150,000 seeds per acre. A randomized complete block design was used with four replications. Preemergence (PRE) and postemergence (POST I, POST II, and POST III) treatments were applied with a tractor-mounted sprayer delivering 20 gpa at 32 psi using Turbo Tee 11002 nozzles. Evaluations of the plots were taken on June 6, June 14, June 20, June 28, July 5, July 18, and September 11. Application dates, environmental conditions, and weed stages are listed below. The center two rows of each plot were machine harvested.

Date	May 18	June 15	June 26	July 6
Treatment	PRE	POST I	POST II	POST III
Temperature (F)				
Air	69	82	89	79
soil	65	79	84.9	79
Relative Humidity (%)	35	50	53	--
Wind (mph)	27	8	13	3
Soil moisture	inadequate	adequate	adequate	inadequate
Bean				
stage	--	V2	V5	R1
height (inch)	--	5.0	12.0	15.0
Giant Ragweed				
weed density (ft ²)	--	20.9	20.9	20.9
height (inch)	--	6.8	3.0	3.7
Common Lambsquarters				
weed density (ft ²)	--	6.1	6.1	6.1
height (inch)	--	1.6	3.0	3.0
Common Waterhemp				
weed density (ft ²)	--	12.6	12.6	12.6
height (inch)	--	2.4	7.0	3.6
Giant Foxtail				
weed density (ft ²)	--	17.9	17.9	17.9
height (inch)	--	2.3	4.0	3.1
Rainfall after each application (inch)				
week 1	2.41	2.97	0.06	0.66
week 2	1.25	0.52	0.87	0.50
week 3	0.44	0.21	0.33	0.45

CONCLUSIONS

Soil applied giant ragweed control ratings (June 14) were significantly better with the high rate of Prefix when compared to the low rate of Prefix, Sonic, and Valor. No statistical difference was observed between the high rate of Prefix and Gangster for giant ragweed control. Gangster provided statistically better giant ragweed control than the low rate of Prefix and Valor. No statistical difference was observed between Gangster and Sonic. The low rate of Prefix and Sonic provided similar control of giant ragweed and both provided statistically better control than Valor. Late season (September 11) giant ragweed ratings improved with both rates of Prefix followed by Touchdown Total and the sequential POST I and POST III application of Touchdown Total. Slightly reduced control of giant ragweed was achieved by both Gangster, and Sonic followed by Touchdown Total. Valor followed by Touchdown Total provided the lowest level of giant ragweed control when compared to the other PRE/POST comparisons, and the sequential POST I/POST III combinations of Touchdown Total. Valor followed by Touchdown Total did however; provide significantly better POST control of giant ragweed than the single POST I application of Touchdown Total.

Soil applied common lambsquarters control ratings (June 14 rating) were significantly higher with Valor, Gangster, and Sonic compared to the two rates of Prefix. The high rate of Prefix provided statistically better common lambsquarters control than the low rate of Prefix. Late season (September 11) common lambsquarters ratings were excellent and statistically similar for all sequential treatments PRE/POST I, PRE/POST II, and POST I/POST III. All PRE/POST I, PRE/POST II, and POST I/POST III treatments provided statistically better common lambsquarters control when compared to the POST I application of Touchdown Total.

Soil applied common waterhemp control ratings (June 14) were excellent and statistically similar for all preemergent treatments. Late season (September 11) common waterhemp ratings were excellent and statistically similar for all sequential treatments PRE/POST I, PRE/POST II, and POST I/POST III. All PRE/POST I, PRE/POST II, and POST I/POST III treatments provided statistically better common waterhemp control when compared to the POST I application of Touchdown Total.

Soil applied giant foxtail control ratings (June 14) were significantly better with the high and low rate of Prefix when compared to Sonic, Gangster, and Valor. Gangster provided statistically better giant foxtail control than Sonic and Valor. No statistical difference was observed between Valor and Sonic for giant foxtail control. Late season (September 11) giant foxtail ratings were excellent and statistically similar for all sequential treatments PRE/POST I, PRE/POST II, and POST I/POST III. All PRE/POST I, PRE/POST II, and POST I/POST III treatments provided statistically better giant foxtail control when compared to the POST I application of Touchdown Total.

Table 1. Performance of herbicide systems for giant ragweed control in soybean on June 6, June 14, June 20, July 5, July 18, and September 11 at Rochester, MN, in 2007.

Treatment	Rate (rate/A)	Giant Ragweed Control							Yield (bu/A)
		6/6	6/14	6/20	6/28	7/5	7/18	9/11	
Untreated Check		0	0	0	0	0	0	0	1
PRE / POST II									
Prefix / Touchdown Total + AMS	1.5 pt / 24 fl oz + 2% w/v	77	86	87	73	97	98	99	46
Prefix / Touchdown Total + AMS	2 pt / 24 fl oz + 2% w/v	84	94	91	82	97	98	99	41
PRE / POST I									
Valor / Touchdown Total + AMS	2 oz / 24 fl oz + 2% w/v	65	35	92	96	94	91	94	44
PRE / POST II									
Gangster-FR + Gangster-V / Touchdown Total + AMS	0.3 oz + 1.5 oz / 24 fl oz + 2% w/v	75	91	89	76	95	96	97	38
Sonic / Touchdown Total + AMS	3 oz / 24 fl oz + 2% w/	--	88	90	77	96	96	96	43
POST I									
Touchdown Total + AMS	24 fl oz + 2% w/v	0	0	90	96	94	83	73	36
POST I / POST III									
Touchdown Total + AMS / Touchdown Total + AMS	24 fl oz + 2% w/v / 24 fl oz + 2% w/v	0	0	90	96	94	99	99	47
LSD (P=0.10)		5	4	2	5	1	2	2	6

Table 2. Performance of herbicide systems for common lambsquarters control in soybean on June 6, June 14, June 20, July 5, July 18, and September 11 at Rochester, MN, in 2007.

Treatment	Rate	Common Lambsquarters Control							Yield
		6/6	6/14	6/20	6/28	7/5	7/18	9/11	
	(rate/A)	(%)							(bu/A)
Untreated Check		0	0	0	0	0	0	0	1
PRE / POST II									
Prefix / Touchdown Total + AMS	1.5 pt / 24 fl oz + 2% w/v	99	83	70	78	99	99	99	46
Prefix / Touchdown Total + AMS	2 pt / 24 fl oz + 2% w/v	99	86	73	83	99	99	99	41
PRE / POST I									
Valor / Touchdown Total + AMS	2 oz / 24 fl oz + 2% w/v	99	97	99	99	99	99	98	44
PRE / POST II									
Gangster-FR + Gangster-V / Touchdown Total + AMS	0.3 oz + 1.5 oz / 24 fl oz + 2% w/v	99	99	99	99	99	99	99	38
Sonic / Touchdown Total + AMS	3 oz / 24 fl oz + 2% w/	--	99	99	99	99	99	99	43
POST I									
Touchdown Total + AMS	24 fl oz + 2% w/v	0	0	99	97	92	79	74	36
POST I / POST III									
Touchdown Total + AMS / Touchdown Total + AMS	24 fl oz + 2% w/v / 24 fl oz + 2% w/v	0	0	99	97	93	99	99	47
		LSD (P=0.10)							6

Table 3. Performance of herbicide systems for common waterhemp control in soybean on June 6, June 14, June 20, July 5, July 18, and September 11 at Rochester, MN, in 2007.

Treatment	Rate	Common Waterhemp Control							Yield
		6/6	6/14	6/20	6/28	7/5	7/18	9/11	
	(rate/A)	(%)							(bu/A)
Untreated Check		0	0	0	0	0	0	0	1
Pre / Post II									
Prefix / Touchdown Total + AMS	1.5 pt / 24 fl oz + 2% w/v	99	99	99	98	99	99	99	46
Prefix / Touchdown Total + AMS	2 pt / 24 fl oz + 2% w/v	99	99	99	99	99	99	99	41
Pre / Post I									
Valor / Touchdown Total + AMS	2 oz / 24 fl oz + 2% w/v	99	99	99	99	99	96	99	44
Pre / Post II									
Gangster-FR + Gangster-V / Touchdown Total + AMS	0.3 oz + 1.5 oz / 24 fl oz + 2% w/v	99	99	97	99	99	99	99	38
Sonic / Touchdown Total + AMS	3 oz / 24 fl oz + 2% w/	--	98	96	99	99	98	99	43
Post I									
Touchdown Total + AMS	24 fl oz + 2% w/v	0	0	99	96	91	77	70	36
Post I / Post III									
Touchdown Total + AMS / Touchdown Total + AMS	24 fl oz + 2% w/v / 24 fl oz + 2% w/v	0	0	99	95	88	99	99	47
		LSD (P=0.10)							6

Table 4. Performance of herbicide systems for giant foxtail control in soybean on June 6, June 14, June 20, July 5, July 18, and September 11 at Rochester, MN, in 2007.

Treatment	Rate	Giant Foxtail Control							Yield
		6/6	6/14	6/20	6/28	7/5	7/18	9/11	
	(rate/A)	(%)							(bu/A)
Untreated Check		0	0	0	0	0	0	0	1
PRE / POST II									
Prefix / Touchdown Total + AMS	1.5 pt / 24 fl oz + 2% w/v	98	99	98	95	99	99	99	46
Prefix / Touchdown Total + AMS	2 pt / 24 fl oz + 2% w/v	98	99	96	95	99	99	99	41
PRE / POST I									
Valor / Touchdown Total + AMS	2 oz / 24 fl oz + 2% w/v	87	58	98	97	94	93	97	44
PRE / POST II									
Gangster-FR + Gangster-V / Touchdown Total + AMS	0.3 oz + 1.5 oz / 24 fl oz + 2% w/v	84	71	64	41	99	99	97	38
Sonic / Touchdown Total + AMS	3 oz / 24 fl oz + 2% w/v	--	55	53	23	99	98	97	43
POST I									
Touchdown Total + AMS	24 fl oz + 2% w/v	0	0	99	99	94	86	85	36
POST I / POST III									
Touchdown Total + AMS / Touchdown Total + AMS	24 fl oz + 2% w/v / 24 fl oz + 2% w/v	0	0	99	99	94	99	98	47
	LSD (P=0.10)	3	4	3	5	2	3	2	6

Table 5. Performance of herbicide systems for velvetleaf control in soybean on July 5 and July 18 at Rochester, MN, in 2007.

Treatment	Rate	Velvetleaf Control		Yield
		7/5	7/18	
	(rate/A)	(%)		(bu/A)
Untreated Check		0	0	1
PRE / POST II				
PREfix / Touchdown Total + AMS	1.5 pt / 24 fl oz + 2% w/v	98	99	46
Prefix / Touchdown Total + AMS	2 pt / 24 fl oz + 2% w/v	97	98	41
PRE / POST I				
Valor / Touchdown Total + AMS	2 oz / 24 fl oz + 2% w/v	99	99	44
PRE / POST II				
Gangster-FR + Gangster-V / Touchdown Total + AMS	0.3 oz + 1.5 oz / 24 fl oz + 2% w/v	99	99	38
Sonic / Touchdown Total + AMS	3 oz / 24 fl oz + 2% w/v	99	99	43
POST I				
Touchdown Total + AMS	24 fl oz + 2% w/v	99	99	36
POST I / POST III				
Touchdown Total + AMS / Touchdown Total + AMS	24 fl oz + 2% w/v / 24 fl oz + 2% w/v	99	99	47
	LSD (P=0.10)	2	1	6

