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# Two-pass Weed Management Programs in Corn

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# Two-pass Weed Management Programs in Corn

**Abstract**

The purpose of this study was to evaluate various herbicides for corn injury and weed control when applied preemergence and postemergence.

**Keywords**

RFR A1199, Agronomy

**Disciplines**

Agriculture | Agronomy and Crop Sciences

## Two-pass Weed Management Programs in Corn

### RFR-A1199

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### Introduction

The purpose of this study was to evaluate various herbicides for corn injury and weed control when applied preemergence and postemergence.

### Materials and Methods

The study was established using a randomized complete block design with three replications. Herbicides were applied in 20 gallons of water/acre. The crop rotation was corn following soybean. The pre-plant seedbed was prepared with a tandem disk and field cultivator. Corn was planted at 32,000 seeds/acre in 30-in. rows on May 19. Preemergence (PRE) treatments were applied following planting. Postemergence (POST) treatments were applied on June 11. Corn growth was V3 to V4 on June 11 and 5 to 7 in. tall. Weeds were generally 0.25 to 2 in. tall. Weed species in the study included: woolly cupgrass, velvetleaf, common waterhemp, and common lambsquarters with average populations of <1 to 2 plants/ft<sup>2</sup>. Visual estimates of corn injury and percentage weed control were made during the growing season. These observations were compared with an untreated control and made on a 0–100 rating scale (0 percent = no control or injury; 100 percent = complete control or crop kill).

### Results and Discussion

Summarized in Tables 1 through 3 are the results of the study. No corn injury was evident from the preemergence (PRE) treatments on June 10, 22 days after application (Table 1). PRE treatments, with exceptions, provided 93–98 percent woolly cupgrass, 85–99 percent velvetleaf, and 90–99 percent common waterhemp and common lambsquarters control on June 10. Exceptions included 83 percent velvetleaf control with PRE applied TripleFLEX and 32 percent velvetleaf and 63 percent common lambsquarters control with PRE applied Dual II Magnum.

Corn injury from the POST treatments ranged from 0–5 percent on June 17, six days after application (Table 2). No corn injury was observed from any treatment on June 27, 16 days after application (data not shown). On June 27, nearly all of the treatments provided 90 percent or higher weed control.

Treatments continued to provide above 80 percent or higher weed control on July 12, 31 days after POST application timing (Table 3). Exceptions to this included 63 percent velvetleaf control by PRE applied Lumax followed by POST applied Touchdown Total, 78 percent velvetleaf control by PRE applied Harness Xtra followed by POST applied Roundup PowerMAX, and 68 percent velvetleaf control by PRE applied TripleFLEX followed by POST applied Roundup PowerMAX.

### Acknowledgements

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**Table 1. Two-pass weed management programs in corn in early June.**

<b>Treatment</b>	<b>Rate</b>	<b>Appln timing</b>	<b>Injury Jun 10</b>	<b>Erica<sup>c</sup> Jun 10</b>	<b>Abuth Jun 10</b>	<b>Amata Jun 10</b>	<b>Cheal Jun 10</b>
	product/acre		- (%) -	----- (% weed control) -----			
Untreated	-		0	0	0	0	0
Corvus + Atrazine + (Laudis + Roundup PowerMAX + AMS <sup>a</sup> )	3 fl oz + 1 qt + (3 fl oz + 22 fl oz + 8.5 lb/100 gal)	PRE + (POST)	0	95	98	99	99
Corvus + Atrazine + (Ignite 280 + AMS)	3 fl oz + 1 qt + (22 fl oz + 3 lb)	PRE + (POST)	0	98	96	99	99
Corvus + Atrazine + (Roundup PowerMAX + AMS)	3 fl oz + 1 qt + (22 fl oz + 3 lb)	PRE + (POST)	0	96	99	99	99
Balance Flexx + Atrazine + (Laudis + Roundup PowerMAX + AMS)	3 fl oz + 2 pt + (3 fl oz + 22 fl oz + 8.5 lb/100 gal)	PRE + (POST)	0	96	99	99	99
Balance Flexx + Atrazine + (Laudis + Ignite 280 + AMS)	3 fl oz + 2 pt + (3 fl oz + 22 fl oz + 3 lb)	PRE + (POST)	0	95	96	99	99
Balance Flexx + Atrazine + (Roundup PowerMAX + AMS)	4.5 fl oz + 2 pt + (22 fl oz + 3 lb)	PRE + (POST)	0	95	99	98	99
Lumax + (Touchdown Total + AMS)	1.5 qt + (24 fl oz + 8.5 lb/100 gal)	PRE + (POST)	0	95	92	99	99
Lumax + (Halex GT + NIS + AMS)	1 qt + (3.6 pt + 0.25 % v/v + 8.5 lb/100 gal)	PRE + (POST)	0	93	88	98	99
Harness Xtra + (Roundup PowerMAX + AMS)	1.5 qt + (22 fl oz + 8.5 lb/100 gal)	PRE + (POST)	0	95	87	99	99
Verdict + (Status + Roundup PowerMAX + AMS)	16 fl oz + (2.5 oz wt + 22 fl oz + 8.5 lb/100 gal)	PRE + (POST)	0	96	99	99	99
TripleFLEX + (Roundup PowerMAX + AMS)	2 pt + (22 fl oz + 8.5 lb/100 gal)	PRE + (POST)	0	95	83	99	96
Dual II Magnum + (Halex GT + Atrazine + NIS <sup>b</sup> + AMS)	1 pt + (3.6 pt + 1 pt + 0.25 % v/v + 8.5 lb/100 gal)	PRE + (POST)	0	93	32	90	63
Bicep II Magnum + (Halex GT + NIS + AMS)	1.3 qt + (3.6 pt + 0.25 % v/v + 8.5 lb/100 gal)	PRE + (POST)	0	93	85	99	99
Lexar + (Halex GT + NIS + AMS)	1.5 qt + (3.6 pt + 0.25 % v/v + 8.5 lb/100 gal)	PRE + (POST)	0	96	93	99	99
LSD (P=0.05)			0	5	9	1	2

<sup>a</sup>AMS = ammonium sulfate fertilizer from United Suppliers.<sup>b</sup>NIS = non-ionic surfactant (Preference) from Winfield Solutions LLC.<sup>c</sup>Erica = woolly cupgrass, Abuth = velvetleaf, Amata = common waterhemp, Cheal = common lambsquarters.

**Table 2. Two-pass weed management programs in corn in mid- to late-June.**

<b>Treatment</b>	<b>Rate</b>	<b>Appln timing</b>	<b>Injury Jun 17</b>	<b>Erica<sup>c</sup> Jun 27</b>	<b>Abuth Jun 27</b>	<b>Amata Jun 27</b>	<b>Cheal Jun 27</b>
	product/acre		- (%) -	----- (% weed control) -----			
Untreated	-		0	0	0	0	0
Corvus + Atrazine + (Laudis + Roundup PowerMAX + AMS <sup>a</sup> )	3 fl oz + 1 qt + (3 fl oz + 22 fl oz + 8.5 lb/100 gal)	PRE + (POST)	2	96	96	99	99
Corvus + Atrazine + (Ignite 280 + AMS)	3 fl oz + 1 qt + (22 fl oz + 3 lb)	PRE + (POST)	0	95	98	98	99
Corvus + Atrazine + (Roundup PowerMAX + AMS)	3 fl oz + 1 qt + (22 fl oz + 3 lb)	PRE + (POST)	0	96	96	99	99
Balance Flexx + Atrazine + (Laudis + Roundup PowerMAX + AMS)	3 fl oz + 2 pt + (3 fl oz + 22 fl oz + 8.5 lb/100 gal)	PRE + (POST)	2	95	99	99	99
Balance Flexx + Atrazine + (Laudis + Ignite 280 + AMS)	3 fl oz + 2 pt + (3 fl oz + 22 fl oz + 3 lb)	PRE + (POST)	2	95	96	99	99
Balance Flexx + Atrazine + (Roundup PowerMAX + AMS)	4.5 fl oz + 2 pt + (22 fl oz + 3 lb)	PRE + (POST)	0	93	96	98	99
Lumax + (Touchdown Total + AMS)	1.5 qt + (24 fl oz + 8.5 lb/100 gal)	PRE + (POST)	0	95	72	96	91
Lumax + (Halex GT + NIS + AMS)	1 qt + (3.6 pt + 0.25 % v/v + 8.5 lb/100 gal)	PRE + (POST)	5	96	98	99	98
Harness Xtra + (Roundup PowerMAX + AMS)	1.5 qt + (22 fl oz + 8.5 lb/100 gal)	PRE + (POST)	0	90	80	95	90
Verdict + (Status + Roundup PowerMAX + AMS)	16 fl oz + (2.5 oz wt + 22 fl oz + 8.5 lb/100 gal)	PRE + (POST)	5	96	98	99	99
TripleFLEX + (Roundup PowerMAX + AMS)	2 pt + (22 fl oz + 8.5 lb/100 gal)	PRE + (POST)	0	95	78	98	93
Dual II Magnum + (Halex GT + Atrazine + NIS <sup>b</sup> + AMS)	1 pt + (3.6 pt + 1 pt + 0.25 % v/v + 8.5 lb/100 gal)	PRE + (POST)	2	99	99	99	99
Bicep II Magnum + (Halex GT + NIS + AMS)	1.3 qt + (3.6 pt + 0.25 % v/v + 8.5 lb/100 gal)	PRE + (POST)	5	99	99	99	99
Lexar + (Halex GT + NIS + AMS)	1.5 qt + (3.6 pt + 0.25 % v/v + 8.5 lb/100 gal)	PRE + (POST)	5	99	98	99	99
LSD (P=0.05)			2	4	15	3	6

<sup>a</sup>AMS = ammonium sulfate fertilizer from United Suppliers.<sup>b</sup>NIS = non-ionic surfactant (Preference) from Winfield Solutions LLC.<sup>c</sup>Erica = woolly cupgrass, Abuth = velvetleaf, Amata = common waterhemp, Cheal = common lambsquarters.

**Table 3. Two-pass weed management programs in corn in July.**

<b>Treatment</b>	<b>Rate</b>	<b>Appln timing</b>	<b>Erica<sup>c</sup> Jul 12</b>	<b>Abuth Jul 12</b>	<b>Amata Jul 12</b>	<b>Cheal Jul 12</b>
	product/acre		----- (% weed control) -----			
Untreated	-		0	0	0	0
Corvus + Atrazine + (Laudis + Roundup PowerMAX + AMS <sup>a</sup> )	3 fl oz + 1 qt + (3 fl oz + 22 fl oz + 8.5 lb/100 gal)	PRE + (POST)	96	98	98	99
Corvus + Atrazine + (Ignite 280 + AMS)	3 fl oz + 1 qt + (22 fl oz + 3 lb)	PRE + (POST)	95	95	87	98
Corvus + Atrazine + (Roundup PowerMAX + AMS)	3 fl oz + 1 qt + (22 fl oz + 3 lb)	PRE + (POST)	93	96	93	98
Balance Flexx + Atrazine + (Laudis + Roundup PowerMAX + AMS)	3 fl oz + 2 pt + (3 fl oz + 22 fl oz + 8.5 lb/100 gal)	PRE + (POST)	95	99	99	98
Balance Flexx + Atrazine + (Laudis + Ignite 280 + AMS)	3 fl oz + 2 pt + (3 fl oz + 22 fl oz + 3 lb)	PRE + (POST)	93	98	96	99
Balance Flexx + Atrazine + (Roundup PowerMAX + AMS)	4.5 fl oz + 2 pt + (22 fl oz + 3 lb)	PRE + (POST)	88	93	87	99
Lumax + (Touchdown Total + AMS)	1.5 qt + (24 fl oz + 8.5 lb/100 gal)	PRE + (POST)	93	63	90	83
Lumax + (Halex GT + NIS + AMS)	1 qt + (3.6 pt + 0.25 % v/v + 8.5 lb/100 gal)	PRE + (POST)	98	98	99	98
Harness Xtra + (Roundup PowerMAX + AMS)	1.5 qt + (22 fl oz + 8.5 lb/100 gal)	PRE + (POST)	90	78	92	85
Verdict + (Status + Roundup PowerMAX + AMS)	16 fl oz + (2.5 oz wt + 22 fl oz + 8.5 lb/100 gal)	PRE + (POST)	95	93	92	88
TripleFLEX + (Roundup PowerMAX + AMS)	2 pt + (22 fl oz + 8.5 lb/100 gal)	PRE + (POST)	95	68	90	82
Dual II Magnum + (Halex GT + Atrazine + NIS <sup>b</sup> + AMS)	1 pt + (3.6 pt + 1 pt + 0.25 % v/v + 8.5 lb/100 gal)	PRE + (POST)	99	98	99	99
Bicep II Magnum + (Halex GT + NIS + AMS)	1.3 qt + (3.6 pt + 0.25 % v/v + 8.5 lb/100 gal)	PRE + (POST)	99	98	99	99
Lexar + (Halex GT + NIS + AMS)	1.5 qt + (3.6 pt + 0.25 % v/v + 8.5 lb/100 gal)	PRE + (POST)	98	99	99	99
LSD (P=0.05)			5	18	6	12

<sup>a</sup>AMS = ammonium sulfate fertilizer from United Suppliers<sup>b</sup>NIS = non-ionic surfactant (Preference) from Winfield Solutions LLC.<sup>c</sup>Erica = woolly cupgrass, Abuth = velvetleaf, Amata = common waterhemp, Cheal = common lambsquarters.