

**Performance of Soil Applied Herbicides in Corn**  
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The objective of this study was to evaluate weed control from existing and recently developed preemergence and preplant incorporated corn herbicides. This study was conducted on a Wheatville loam with 3.9 percent organic matter, pH of 7.8, and with P and K soil test values of 18 and 300 lb/A respectively.

“3963” corn was planted May 25 in 22-inch rows at a rate of 28,000 seeds per acre. Preplant incorporated herbicides were applied immediately prior to seeding and the entire trial received two passes with a Melroe cultivator/harrow to incorporate the herbicides and prepare a seedbed. Preemergence herbicides were applied on May 27. Herbicides were applied with a backpack CO<sub>2</sub> sprayer delivering 10 gpa at 30 psi using 8015 nozzles spaced 19 inches apart. Treatments were applied to the center four rows of six row plots 20 feet in length. Application information is contained in Table 1. The experimental design was a randomized complete block with four replications.

Table 1. Plant development stages and environmental conditions at each herbicide application date

Date	May 25	May 27
	<b>PPI</b>	<b>Pre</b>
Temperature (F°)	60	65
Relative humidity (%)	55	45
Wind (mph)	E 10	S 3
Sky	cloudy	Clear
Soil moisture	dry	dry
Rainfall after application (inch)		
1 week	0	0
2 week	.6	.6
3 week	0	0
4 week	1.28	1.28

**Results**

Soil conditions were dry for a month after planting except for an activation rainfall two weeks after planting. Dry conditions delayed weed emergence until late June. All herbicides provided very good control of prostrate and redroot pigweed except dimethenamid applied as a preemergent herbicide. Weed control from dimethenamid applied preemergence decreased significantly between the two evaluation dates, however, control was more consistent when dimethenamid was incorporated into soil. Isoxaflutole alone provided very good foxtail and pigweed control, but poor control of wild buckwheat. Combinations of isoxaflutole and dimethenamid improved weed control compared to dimethenamid applied preemergence. Combinations of isoxaflutole and acetochlor, at a reduced rate (0.094 and 1.0 lbs/a respectively), provided control equal to acetochlor at 2.0 lb/a.

Table 1. Weed control with soil applied herbicides in corn.

Treatment	Rate (lb/a)	Foxtail spp.		Wild Buckwheat		Pigweed spp.	
		7/11	7/28	7/11	7/28	7/11	7/28
		-----% control-----					
<b>PPI</b>							
Acetochlor &EPTC <sup>1</sup>	1.05 + 4.05	99	97	96	88	98	99
Acetochlor	2.0	92	87	90	77	92	96
Dimethenamid	1.4	95	85	80	67	90	91
Acetochlor + isoxaflutole	1.0 + 0.094	95	92	85	76	99	95
<b>PRE</b>							
Acetochlor	2.0	95	90	82	71	98	94
Isoxaflutole	0.094	93	96	84	57	99	97
Acetochlor + isoxaflutole	1.0 + 0.094	98	96	85	74	100	95
Dimethenamid	1.4	94	76	62	25	72	51
Dimethenamid + isoxaflutole	1.17 + 0.094	95	87	84	59	96	95
LSD 0.05		5	11	11	19	10	17
CV		4	8	9	19	7	13

<sup>1</sup>Premix=Doubleplay