

Herbicide performance in corn at Lamberton, MN in 2001. Getting, Jodie K., Jeffrey L. Gunsolus, and Thomas R. Hoverstad. The objective of this study was to evaluate corn herbicide combinations for annual grass and annual broadleaf weed control in corn. This study was conducted on a Normania loam soil containing 4.4% organic matter, pH 6.2 and soil test P and K levels of 60 and 422 lb/A, respectively. A randomized complete block design with four replications and a plot size of 10 by 30 ft was used. The site was planted to oats in 2000 and was fall chiseled. The area was fertilized with 180 lb/A of nitrogen as urea. On May 11, 2001, Northrup King 'N42-B7' imidazolinone tolerant/glufosinate resistant field corn was planted in 30-inch rows at a seeding rate of 33,000 seeds/A. All treatments were applied with a tractor-mounted sprayer delivering 20 gpa at a pressure of 40 psi. The sprayer was equipped with 8002 flat-fan nozzles spaced 15 inches apart on the boom. Application dates, environmental conditions, plant sizes and rainfall data are listed below:

Date	May 12	June 11	June 15
Treatment	PRE	POST I	POST II
Temperature (F)			
air	50	70	55
soil (4 inch)	50	68	60
Relative humidity (%)	71	73	94
Wind (mph)	calm	calm	NW 12
Sky	clear	p. cloudy	p. cloudy
Soil moisture	moist	dry	moist
Corn			
leaf no.	-	3-collar	4-collar
height (inch)	-	4	6
Yellow foxtail			
leaf no.	-	1 to 4	2 to 4
height (inch)	-	1 to 3	2 to 4
no./ft ²	-	65	48
Common lambsquarters			
leaf no.	-	1 to 2	2 to 4
height (inch)	-	0.25 to 1.0	1 to 3
no./ft ²	-	7	7
Redroot pigweed			
leaf no.	-	1 to 2	1 to 2
height (inch)	-	0.25 to 1.0	0.25 to 1.0
no./ft ²	-	<1	<1
Rainfall after application (inch)			
1 week	0.00	0.81	0.06
2 week	1.15	0.01	0.00
3 week	0.31	0.46	0.50

None of the herbicide treatments caused visible crop injury. On June 11, prior to the POST treatments, RPA 201772 had 83% yellow foxtail control. All other treatments provided 90% or greater yellow foxtail control. Acetochlor, BAS 656, and CGA 77102 applied PRE gave 94 to 97%, 85 to 89%, and 78 to 92% common lambsquarters control, respectively. FOE 5043 provided 75% control. In September, total POST herbicide treatments gave 76 to 86% yellow foxtail control. CGA 77102 applied PRE followed by either [primisulfuron & dicamba], [primisulfuron & dicamba] + nicosulfuron, or [primisulfuron & dicamba] + atrazine POST gave 88, 83, and 84% control, respectively. [FOE 5043 & metribuzin] followed by [flumetsulam & clopyralid] resulted in 86% control. All other treatments gave 89% or greater control. All treatments provided excellent control of common lambsquarters. (Southwest Research and Outreach Center, University of Minnesota, Lamberton).

Table. Herbicide performance in corn at Lamberton, MN in 2001 (Getting, Gunsolus and Hoverstad).

Treatment ^a	Rate (lb/A or %)	SETLU				CHEAL				Yield (bu/A) ^b
		6/11	6/28	7/9	9/11	6/11	6/28	7/9	9/11	
<u>Preemergence</u>										
Acetochlor+[Flms&Clpy]	2.2+[0.047&0.125]	91	90	91	92	96	98	97	98	141
<u>Preemergence/POST II (4-collar corn)</u>										
Acet/[Flms&Clpy]+Atra+COC+AMS	2.2/[0.034&0.094]+0.75+1%+2.5	97	97	97	95	96	98	100	100	137
Acet/[Flms&Clpy]+Dica+NIS+AMS	2.2/[0.034&0.094]+0.125+0.25%+2.5	98	97	97	95	97	98	99	100	136
Acet/[Flms&Clpy]+Carf+NIS+AMS	2.2/[0.034&0.094]+0.008+0.25%+2.5	97	93	95	92	96	97	100	100	134
Acet/Carf+Atra+COC	2.2/0.008+1.0+1%	97	97	97	95	95	98	100	100	137
Acet/Carf+Atra+Dica+NIS	2.2/0.008+0.5+0.125+0.25%	96	95	93	93	96	98	99	99	126
Dimt-P/[Dica&SAN 1269H] +NIS+AMS	1.0/[0.128&0.051] +0.25%+1.0	92	96	95	93	85	98	100	99	129
Dimt-P/[Dica&San 1269H&Nico] +[Dica&SAN 1269H]+NIS+AMS	0.75/[0.1&0.04&0.023] +[0.029&0.011]+0.25%+1.0	95	93	94	90	89	98	100	99	130
S-meto/ZA 1296+Atra+COC+28%N	1.91/0.094+0.25+1%+2.5%	93	93	93	90	92	98	100	100	130
S-meto/[Prim&Dica]+COC+28%N	1.91/[0.023&0.125]+1%+2.5%	95	93	92	88	86	97	100	100	124
S-meto/[Prim&Dica]+Nico +COC+28%N	0.96/[0.1875&0.1]+0.015 +1%+2.5%	90	92	90	83	78	97	100	100	135
S-meto/[Prim&Dica]+Atra +COC+28%N	0.96/[0.1875&0.1]+0.5 +1%+2.5%	90	91	90	84	85	98	100	100	134
[Foe 5043&Metr]/[Flms&Clpy] +COC+28%N	[0.75&0.187]/[0.034&0.094] 1%+2.5%	92	89	90	86	91	97	98	99	124
Acet/[Nico&Rims&Flms&Clpy] +Atra+COC+28%N	1.2/[0.012&0.012&0.034&0.094] +0.75+1%+2.5%	95	96	95	91	94	98	100	100	126
RPA 201772/Gluf+Atra+AMS	0.07/0.31+1.0+3.0	83	94	95	93	94	98	100	99	129
Foe 5043/Gluf+Atra+AMS	0.375/0.31+1.0+3.0	91	97	95	95	75	98	100	100	125
Acet ¹ /MON 12075+NIS	1/0.169+0.25%	92	91	91	89	95	97	100	100	126
<u>POST I (3-collar corn)</u>										
[Imep&Impr]+[Dica&Atra] +NIS+AMS	[0.042&0.014]+[0.28&0.54] +0.25%+2.5	-	91	88	86	-	98	100	100	127
<u>POST II (4-collar corn)</u>										
[Nico&Rims]+ZA 1296 +Atra+COC+28%N	[0.023&0.012]+0.063 +0.25+1%+2.5%	-	91	85	78	-	98	100	100	121
[Nico&Rims]+[Flms&Clpy] +Atra+COC+28%N	[0.023&0.012]+[0.034&0.094] +0.5+1%+2.5%	-	90	85	79	-	98	100	98	128
[Nico&Rims]+Carf+Atra +COC+28%N	[0.023&0.012]+0.008+0.5 +1%+2.5%	-	89	84	76	-	98	100	100	129
[Nico&Rims&Flms&Clpy] +[Dica&Atra]+COC+28%N	[0.012&0.012&0.034&0.094] +[0.14&0.27]+1%+2.5%	-	84	79	76	-	98	100	100	135
<u>Checks</u>										
Weedy check		0	0	0	0	0	0	0	0	11
Weed-free		100	100	100	100	100	100	100	100	136
	LSD (0.10)	2.6	3.4	3.0	5.1	6.9	0.8	1.0	ns	11.0

^a Acet or acetochlor = Surpass 6.4E; Acet¹ = Harness 7E; Atra or atrazine = Aatrex 90DF; Carf or carfentrazone = Aim 40DF; Dica or dicamba = Clarity 4L; [Dica&Atra] or [dicamba & atrazine] = Marksman 3.2F; [Dica&SAN 1269H] or [dicamba & SAN 1269H] = Distinct 70WG; [Dica&San 1269H&Nico] or [dicamba & SAN 1269H & nicosulfuron] = Celebrity Plus 75.5DF; Dimt-P or dimethenamid-P = Outlook 6L; Foe 5043 = Define 60DF; [Flms&Clpy] or [flumetsulam & clopyralid] = Hornet 85.6WG; [FOE 5043&Metr] or [FOE 5043 & metribuzin] = Axiom 68DF; Gluf or glufosinate = Liberty 1.67L; [Imep&Impr] or [imazethapyr & imazapyr] = Lightning 70DF; Nico or nicosulfuron = Accent 75DF; [Nico&Rims] or [nicosulfuron & rimsulfuron] = Steadfast 75DF; [Nico&Rims&Flms&Clpy] or [nicosulfuron & rimsulfuron & flumetsulam & clopyralid] = Accent Gold 83.8DF; [Prim&Dica] or [primsulfuron & dicamba] = Northstar 47.4WG; RPA 201772 = Balance Pro 4L; S-meto or s-metolachlor = Dual II Magnum 7.64EC; ZA 1296 = Callisto 4L; COC = crop oil concentrate, Class Additive 17%; NIS = nonionic surfactant, Class Preference; 28%N = an aqueous solution of urea and ammonium nitrate; AMS = spray grade ammonium sulfate.

^b Yield adjusted to 15.5% moisture.