Herbicide performance in corn at Lamberton, MN in 2002. 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 4.2% organic matter, pH 6.5 and soil test P and K levels of 60 and 316 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 2001 and was fall chiseled. The area was fertilized with 180 lb/A of nitrogen as urea. On May 2, 2002, 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. Tefluthrin (Force 3G) was applied at 4 oz/1000 row feet in a T-band for the control of northern corn rootworm larvae. 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 3	June 5	June 7
Treatment	PRE	POST I	POST II
Temperature (F)			
air	48	68	70
soil (4 inch)	42	76	68
Relative humidity (%)	30	49	68
Wind (mph)	SE 10	calm	S 5-8
Sky	clear	sunny	p. cloudy
Soil moisture	dry	moist	dry
Corn			
leaf no.	-	3-collar	3-collar
height (inch)	-	4	5
Yellow foxtail			
leaf no.	-	1 to 4	2 to 4
height (inch)	-	1 to 3	2 to 4
no./ft^2	-	37	48
Common lambsquarters			
leaf no.	-	3 to 5	3 to 5
height (inch)	-	1 to 3	2 to 4
no./ft^2	-	3	5
Redroot pigweed			
leaf no.	-	3 to 5	3 to 5
height (inch)	-	1 to 3	2 to 4
no./ft^2	-	<1	<1
Rainfall after application (inch)			
1 week	1.25	0.57	0.73
2 week	0.36	0.24	0.28
3 week	0.00	1.18	0.97

Cool soil temperatures after planting delayed corn emergence for three weeks. As a result, final plant stand in the trial averaged 19,560 plants/A (data not shown). Individual plant stands were taken prior to POST application in each plot to determine potential soil applied herbicide injury. It was concluded that reduction in plant stand was not related to soil applied herbicides. On June 4, prior to the POST treatments, flufenacet had 65 to 73% yellow foxtail control, 75 to 84% common lambsquarters control, and 73 to 93% redroot pigweed control. [Flufenacet & metribuzin] resulted in 70% yellow foxtail control, 68% common lambsquarters control, and 73% redroot pigweed control. [S-metolachlor & CGA-154281] at 0.71 and 0.96 lb/A resulted in 79 to 85% yellow foxtail control, 76 to 80% common lambsquarters control, and 76 to 97% redroot pigweed control. All other soil applied treatments provided 88% or greater yellow foxtail control, 86% or greater common lambsquarters control and 96% or greater redroot pigweed control. At 7 days after POST II, carfentrazone applied POST resulted in 10 to 15% visible crop injury (data not shown). None of the other herbicide treatments caused visible crop injury. In September, isoxaflutole + flufenacet + atrazine applied PRE gave 79% yellow foxtail control. [Imazethapyr & imazapyr] + [dicamba & atrazine] applied POST I along with [nicosulfuron & rimsulfuron] + carfentrazone + atrazine and [nicosulfuron & rimsulfuron & flumetsulam & clopyralid] + dicamba + atrazine applied POST II gave 81% control. [Nicosulfuron & rimsulfuron & flumetsulam & clopyralid] + mesotrione + atrazine applied POST II gave 84% control. All other treatments had greater than 86% control. All of the herbicide treatments resulted in 90% or greater common lambsquarters control and greater than 96% redroot pigweed control. (Southwest Research and Outreach Center, University of Minnesota, Lamberton).

Table. Herbicide performance in corn at Lamberton, MN in 2002 (Getting, Gunsolus and Hoverstad).

Treatment[a]	Rate	SETLU			CHEAL			AMARE		
		6/4	6/21	9/10	6/4	6/21	9/10	6/4	6/21	9/10
	(lb/A or %)	----------(% control)----------								
Preemergence										
Acetochlor+[Flms&Clpy]	2.2+[0.047&0.125]	98	94	90	98	97	97	98	97	96
Isoxaflutole+flufenacet+Atra	0.07+0.375+1.0	88	81	79	95	93	92	97	97	96
Preemergence/POST II (4-collar corn)										
Acet/[Flms&Clpy]+Atra+COC+AMS	2.2/[0.034&0.094]+0.75+1%+2.5	95	97	95	96	98	98	98	98	98
Acet/[Flms&Clpy]+Dica+NIS+AMS	2.2/[0.034&0.094]+0.125+0.25%+2.5	95	96	93	98	98	98	98	98	98
Dimt-P/[Flms&Clpy]+Carf+NIS+AMS	0.94/[0.034&0.094]+0.008+0.25%+2.5	94	93	89	95	98	98	97	98	98
Dimt-P/Carf+Atra+COC	0.94/0.008+1.0+1%	90	95	94	88	98	98	96	98	98
Dimt-P/[Dica&SAN 1269H] +NIS+AMS	0.94/[0.128&0.051] +0.25%+1.0	92	90	88	90	97	96	97	98	98
[Flufenacet&Metr]/AE F130360 +MSO+28%N	[0.50.128]/0.03 +0.94%+2.0%	70	89	86	68	92	90	73	97	96
[S-meto&CGA-154281]/ Meso+Atra+COC+28%N	1.91/ 0.094+0.25+1%+2.5%	91	91	89	86	98	97	97	98	98
[S-meto&CGA-154281]/ [Prim&Dica]+COC+28%N	1.91/ [0.023&0.125]+1%+2.5%	93	91	88	86	97	95	96	97	98
[S-meto&CGA-154281]/ [Nico&Rims]+Meso+Atra+COC+28%N	0.96/ [0.016&0.008]+0.094+0.25+1%+2.5%	85	94	93	80	98	97	76	98	97
[S-meto&CGA-154281]/ Meso+Gluf+AMS	0.96/ 0.094+0.18+3.0	81	90	86	76	98	97	97	98	98
Flufenacet/AE F130360 +[Dica&SAN 1269H]+MSO+28%N	0.375/0.03 +[0.128&0.051]+0.94%+2.0%	65	90	86	75	97	97	73	98	97
[S-meto&CGA-154281]/ [Nico&Rims&Flms&Clpy] +Atra+COC+28%N	0.71/ [0.014&0.014&0.042&0.113] +0.75+1%+2.5%	79	93	89	80	98	97	90	98	98
Flufenacet/Gluf+Atra+AMS	0.375/0.31+0.5+3.0	73	95	90	84	98	97	93	98	98
Acet[1]/MON 12075+NIS	2/0.169+0.25%	97	95	93	98	97	98	98	98	98
POST I (3-collar corn)										
[Imep&Impr]+[Dica&Atra] +NIS+AMS	[0.042&0.014]+[0.28&0.54] +0.25%+2.5	0	85	81	0	97	98	0	98	98
POST II (4-collar corn)										
[Nico&Rims]+Meso+Atra +COC+AMS	[0.023&0.012]+0.063+0.25 +1%+2.0	0	94	88	0	98	98	0	98	98
[Nico&Rims]+[Flms&Clpy] +Atra+COC+AMS	[0.023&0.012]+[0.034&0.094] +0.5+1%+2.0	0	92	86	0	97	94	0	98	97
[Nico&Rims]+Carf+Atra +COC+AMS	[0.023&0.012]+0.008+0.5 +1%+2.0	0	92	81	0	98	95	0	98	98
[Nico&Rims&Flms&Clpy]+Dica +Atra+COC+AMS	[0.014&0.014&0.042&0.113]+0.125 +0.5+1%+2.0	0	88	81	0	98	98	0	98	98
[Nico&Rims&Flms&Clpy]+Meso +Atra+COC+AMS	[0.014&0.014&0.042&0.113]+0.031 +0.25+1%+2.0	0	90	84	0	98	97	0	98	97
Checks										
Weedy check		0	0	0	0	0	0	0	0	0
Weed-free		100	100	100	100	100	100	100	100	100
	LSD (0.10)	7.1	3.6	3.8	8.5	2.0	3.3	13.8	0.8	1.3

[a] Acet or acetochlor = Surpass 6.4E; Acet[1] = Harness 7E; AE F130360 = Option 35 DF; Atra or atrazine = Aatrex 90DF; Carf or carfentrazone = Aim 2EW; Dica or dicamba = Clarity 4L; [Dica&Atra] or [dicamba & atrazine] = Marksman 3.2F; [Dica&SAN 1269H] or [dicamba & SAN 1269H] = Distinct 70WG; Dimt-P or dimethenamid-P = Outlook 6L; flufenacet = Define 60DF; [Flms&Clpy] or [flumetsulam & clopyralid] = Hornet 68.5WDG; [flufenacet&Metr] or [flufenacet & metribuzin] = Axiom 68DF; Gluf or glufosinate = Liberty 1.67L; [Imep&Impr] or [imazethapyr & imazapyr] = Lightning 70DF; MON 12075 = Yukon 68DF; [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; isoxaflutole = Balance Pro 4L; [s-meto&CGA-154281] or [s-metolachlor&CGA-154281] = Dual II Magnum 7.64EC; Meso or mesotrione = Callisto 4L; COC = crop oil concentrate; MSO = methylated seed oil; NIS = nonionic surfactant; 28%N = an aqueous solution of urea and ammonium nitrate; AMS = spray grade ammonium sulfate.