

Glufosinate resistant corn yield trial at Lamberton, MN in 2000. Getting, Jodie K. The objective of this study was to evaluate herbicide combinations for annual grass and broadleaf weed control and corn yield in glufosinate resistant 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 64 and 396 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 1999 and was fall moldboard plowed. The area was fertilized with 180 lb/A of nitrogen as urea. On April 28, 2000, 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	April 28	June 2	June 20
Treatment	PRE	POST I	POST II
Temperature (F)			
air	63	63	75
soil (4 inch)	56	58	72
Relative humidity (%)	52	59	72
Wind (mph)	N 12	NW 12	calm
Sky	clear	cloudy	cloudy
Soil moisture	moist	dry	dry
Corn			
leaf no.	-	5-collar	8-collar
height (inch)	-	6	21
Yellow foxtail			
leaf no.	-	3 to 5	1 to 2
height (inch)	-	2 to 4	1 to 2
no./ft ²	-	47	3
Common Lambsquarters			
leaf no.	-	3 to 5	1 to 2
height (inch)	-	1 to 3	1 to 2
no./ft ²	-	6	<1
Rainfall after application (inch)			
1 week	0.03	0.49	0.86
2 week	1.41	0.77	1.39
3 week	2.86	0.47	1.35

[Nico&Rims&Flms&Clpy] provided 71% late-season yellow foxtail control. All other treatments provided 85% or greater control. All of the treatments provided 97% or greater common lambsquarters control. There were no differences in grain yield of any of the herbicide treatments compared to the hand-weeded check. Severe winds on August 8th caused extensive root lodging and harvest difficulty. The severe lodging contributed to corn yield variability. (Southwest Research and Outreach Center, University of Minnesota, Lamberton).

Table. Glufosinate resistant corn yield trial at Lamberton, MN in 2000 (Getting).

Treatment ^a	Rate	SETLU			CHEAL			Yield (bu/A) ^b
		5/31	6/14	8/8	5/31	6/14	8/8	
<u>Preemergence</u>	(lb/A or %)	-----(% control)-----						
[s-metolachlor&Atra]	[1.44&1.86]	98	95	90	98	98	98	173
<u>Preemergence/POST I</u>								
RPA 201772/Gluf+Atra+AMS	0.055/0.31+0.75+3.0	93	98	97	97	98	99	166
Acet/Gluf+Atra+AMS	1.2/0.31+0.75+3.0	98	98	97	83	98	99	164
Acet/[Nico&Rims&Flms&Clpy] +Dica+COC+28%N	1.2/[0.012&0.01&0.034&0.094] +0.125+1.0%+2.5%	97	96	93	63	95	99	172
Acet/[Imep&Impr]+Dica +NIS+28%N	1.2/[0.042&0.014]+0.1875 +0.25%+2.5%	98	98	97	79	96	98	167
[SAN 582H&Atra]/ [Rims&Nico&atrazine] +COC+28%N	[0.44&0.50]/ [0.012&0.012&0.75] +1.0%+2.5%	93	93	90	69	97	99	165
[s-metolachlor&Atra]/ [Prim&Dica]+COC+28%N	[1.44&1.86]/ [0.023&0.125]+1.0%+2.5%	97	98	97	98	98	98	150
SAN 582H/BAS 662+NIS+28%N	1.5/0.18+0.25%+1.25%	98	96	91	79	93	98	163
[Acet&Atra]/ [Flms&Clpy]+COC+28%N	[2.4&1.6]/ [0.034&0.094]+1.0%+2.5%	98	98	98	98	98	98	164
[FOE 5043&metribuzin]/ Atra+Dica	[0.775&0.195]/ 0.5+0.375	97	97	95	97	98	98	151
<u>POST I</u>								
[Gluf&Atra]+AMS	[0.31&1.02]+3.0	0	95	90	0	98	98	169
[Nico&Rims&Flms&Clpy] +Dica+COC+28%N	[0.012&0.01&0.034&0.094] +0.125+1.0%+2.5%	0	86	71	0	89	97	168
[Imep&Impr] +Dica+NIS+28%N	[0.042&0.014] +0.1875+0.25%+2.5%	0	88	85	0	93	97	151
<u>POST I/POST II</u>								
Gluf+Atra+AMS/Gluf+AMS	0.26+0.78+3.0/0.26+3.0	0	94	95	0	98	98	171
<u>Checks</u>								
Weedy Check	-	0	0	0	0	0	0	110
Hand-weeded check (Gluf POST)		98	100	100	88	100	100	166
	LSD (0.10)	2	2	5	12	3	2	22.7

^a Acet = Surpass 6.4E; [Acet&Atra] = Surpass 100; Atra = Aatrexx 90DF; BAS 662 = Distinct 70WG; Dica = Clarity 4L; [Flms&Clpy] = Hornet 85.6WG; [FOE 5043&metribuzin] = Axiom 68DF; Gluf = Liberty 1.67L; [Gluf&Atra] = Liberty ATZ 4.3SC; [Imep&Impr] = Lightning 70DF; [s-metolachlor&Atra] = Bicep II Magnum 5.5SL; [Nico&Rims&Flms&Clpy] = Accent Gold 83.8DF; [Prim&Dica] = Northstar 47.4WG; RPA 201772 = Balance Pro 4L; [Rims&Nico&Atra] = Basis Gold 89.5WG; SAN 582H = Frontier 6SL; [SAN 582H&Atra] = Leadoff 5SL; 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.