Evaluation of glufosinate and mesotrione weed management systems in corn at Rochester, MN in 2002. Schaufler, Kristal L., Fritz R. Breitenbach, and Lisa M. Behnken. The objective of this trial was to evaluate glufosinate and mesotrione weed control performance in field corn in southeastern Minnesota. The research site was a Lawler loam soil containing 2.4% organic matter with a pH of 6.2 and soil test P and K levels of 35 and 132 ppm, respectively. The previous crop was soybean. The area was fertilized in the fall of 2001 with 200 lb/A Pel-lime, 200 lb/A potash and 8 tons/A turkey manure. The soil was disked twice and chisel plowed once. Spring tillage consisted of two passes with a field cultivator before planting. The corn hybrid, NK32-L9, was planted on May 1, 2002, at a 2-inch depth in 30-inch rows at a population of 31,000 seeds/A. Treatments were arranged in a randomized complete block design with four replications. Postemergence (POST) treatments were applied with a tractor-mounted sprayer, delivering 20 gpa at 32 psi using TurboTee 11002 nozzles. Evaluations of the plot were taken on June 14 and 25, and July 11. Application dates, environmental conditions, crop and weed stages are listed below.

Date	*June 6*
Treatment	POST
Temperature (F)	
air	68
soil	51
Relative humidity (%)	63
Wind (mph)	16
Soil moisture	adequate
Corn	
stage	4 collar
height (inch)	8
Giant ragweed	
weed density/ft^2	4.6
height (inch)	8
Common lambsquarters	
weed density/ft^2	5.6
height (inch)	4.4
Common waterhemp	
weed density/ft^2	12.6
height (inch)	2.75
Giant foxtail	
weed density/ft^2	12.8
height (inch)	5.25
Rainfall after application (inch)	
week 1	1.24
week 2	0.64
week 3	2.68

Excellent control of giant ragweed was achieved with tank mixes of glufosinate + mesotrione (at 0.031, 0.047, and 0.063 lb/a) + atrazine, glufosinate + mesotrione at the 0.063 lb/a, and glufosinate + atrazine. Good giant ragweed control was also obtained with tank mixes of glufosinate + mesotrione at 0.031 and 0.047 lb/a, glufosinate + dicamba & San 1269H, and glufosinate by itself. Excellent common lambsquaters control was achieved by all treatments with the exception of glufosinate + dicamba & San 1269H, and glufosinate alone. The best common waterhemp control was achieved with tank mixes of glufosinate + mesotione + atrazine, and with tank mixes of glufosinate + mesotrione at 0.047and 0.063 lb/a. (Southeast District, University of Minnesota Extension Service, Rochester).

Table. Glufosinate and mesotrione performance in corn on June 25 at Rochester, MN 2002 (Schaufler, Breitenbach, and Behnken).

Treatment	Rate	AMBTA control	CHEAL control	AMATA control	SETFA control	Corn yield
	(lb/A)	(%)	(%)	(%)	(%)	(bu/A)
Glufosinate + AMS	0.365+3.0	90	83	68	84	170
Glufosinate + AMS	0.417+3.0	91	89	72	86	191
Glufosinate + mesotrione + AMS	0.365+0.031+3.0	92	98	71	86	185
Glufosinate + mesotrione + AMS	0.365+0.047+3.0	93	97	81	84	176
Glufosinate + mesotrione + AMS	0.365+0.063+3.0	98	98	81	86	189
Glufosinate + mesotrione + atrazine + AMS	0.365+0.031+0.5+3.0	99	99	81	88	187
Glufosinate + mesotrione + atrazine + AMS	0.365+0.047+0.5+3.0	99	99	87	89	207
Glufosinate + mesotrione + atrazine + AMS	0.365+0.063+0.5+3.0	99	99	90	86	195
Glufosinate + atrazine + AMS	0.365+0.75+3.0	97	99	68	88	179
Glufosinate + atrazine + AMS	0.417+0.75+3.0	97	98	66	91	186
Glufosinate + dicamba & San 1269H+ AMS	0.365+0.062&0.025+ 3.0	95	93	66	86	211
Untreated		0	0	0	0	0
	LSD (0.10)	3	6	9	5	31