

Comparison of the performance foramsulfuron and foramsulfuron & iodosulfuron alone and in combination with other herbicides for weed control in corn at Rochester, MN in 2003. Behnken, Lisa M, Fritz R. Breitenbach, Andrew R. Sheehan, and Angela L. Plank. The objective of this trial was to evaluate and compare the performance of foramsulfuron and foramsulfuron & iodosulfuron alone and in combination with other herbicides for weed control in corn in southeastern Minnesota. The research site was a Lawler loam soil containing 2.8% organic matter with a pH of 5.9 and soil test P and K levels of 57 ppm and 186 ppm, respectively. The previous crop was soybean. The area was fertilized in the spring with 625 lb/A Pel-lime and 135, 23, 120, and 24 lb/A of nitrogen, phosphorus, potassium, and sulfur, respectively. Spring tillage consisted of two passes with a field cultivator. The corn hybrid, DKC47-10, was planted on April 29, 2003, at depth of 1.5 inches in 30-inch rows at a population of 32,000 seeds/A. A randomized complete block design with four replications was used. Postemergence (POST) treatments were applied with a tractor-mounted sprayer, delivering 20 gpa at 32 psi using TurboTee 11002 nozzles. Evaluations of the plots were taken on June 11, 16, and 26, 2003. Application dates, environmental conditions, crop and weed stages are listed below.

Date	May 27
Treatment	POST
Temperature (F)	
air	80
Relative humidity (%)	28
Wind (mph)	9
Soil moisture	adequate
Corn	
stage	2-3 collar
height (inch)	4
Giant ragweed	
weed density/ft ²	27
height (inch)	3.3
Common lambsquarter	
weed density/ft ²	3
height (inch)	0.75
Common waterhemp	
weed density/ft ²	17
height (inch)	0.33
Giant foxtail	
weed density/ft ²	2
height (inch)	1
Rainfall after application (inch)	
week 1	0.07
week 2	2.47
week 3	0

Dry conditions at this research site, only 0.7 inches of rain from July 12 to September 15, resulted in reduced corn yields and premature death of the corn. Overall, foramsulfuron & iodosulfuron applied alone performed better and resulted in a higher yield than foramsulfuron applied alone, 38 bu/A compared to 8 bu/A. Foramsulfuron & iodosulfuron applied alone gave better control of giant ragweed and common lambsquarters (6/26 rating) than foramsulfuron alone. Both treatments provided excellent control of giant foxtail (97 to 98%) and poor control of common waterhemp (28 to 30%). Foramsulfuron & iodosulfuron tank mixed with halosulfuron & dicamba or atrazine provided significantly greater common waterhemp control compared to foramsulfuron tank mixed with the same herbicides, however yields were not different. Foramsulfuron & iodosulfuron plus mesotrione resulted in greater giant ragweed control than foramsulfuron plus mesotrione, 95% compared to 86%, however yields were not different. No other differences were detected between the other foramsulfuron and foramsulfuron & iodosulfuron tank mixes. Nicosulfuron & rimsulfuron + mesotrione performed similar to foramsulfuron and foramsulfuron & iodosulfuron applied alone for common lambsquarters and giant foxtail control and grain yield. Giant ragweed control was slightly better than foramsulfuron alone, 63% compared to 51%, respectively, but control was lower than foramsulfuron & iodosulfuron, 63% compared to 80%. Common waterhemp control was greater than foramsulfuron and foramsulfuron & iodosulfuron, 79% compared to 30% and 28%, respectively. All treatments provided excellent control of giant foxtail, 97 to 99% on 6/16 and 6/26. The best control of common waterhemp, 84 to 91%, was achieved with the combinations of foramsulfuron and foramsulfuron &

iodosulfuron applied with dicamba & San1269H, mesotrione, or acetachlor & atrazine&MON4660.
(Southeast District, University of Minnesota Extension Service, Rochester).

Table. Comparison of performance of foramsulfuron and foramsulfuron & iodosulfuron in combination with other herbicides for weed control in corn on June 11,16 and 26 at Rochester, MN, 2003 (Behnken, Breitenbach, Sheehan, and Plank).

Treatment	Rate	-----AMBTR----- control			-----CHEAL----- control			-----AMATA----- control			-----SETFA----- control			Corn yield
		6/11	6/16	6/26	6/11	6/16	6/26	6/11	6/16	6/26	6/11	6/16	6/26	
	(lb/A)	6/11 6/16 6/26 (%)			6/11 6/16 6/26 (%)			6/11 6/16 6/26 (%)			6/11 6/16 6/26 (%)			(bu/A)
<u>Postemergence</u>														
Foramsulfuron + MSO+28% UAN	0.0328+0.94%+ 2.5%	61	68	51	96	83	91	86	43	30	98	99	98	8
Fora & iodosulfuron + MSO + 28% UAN	0.0544&0.0036 + 0.94% + 2.5%	85	91	80	96	89	98	90	75	28	99	99	97	38
Fora + dicamba & diflufenzopyr + MSO + 28% UAN	0.0328 + 0.0625&0.025 + 0.94% + 2.5%	80	82	87	96	87	97	95	88	84	98	99	97	40
Fora & iodosulfuron + dica&diflufenzopyr + MSO + 28% UAN	0.0544&0.0036 + 0.0625&0.025 + 0.94% + 2.5%	90	96	89	94	95	98	97	95	87	98	99	98	51
Fora + halosulfuron & dicamba + MSO + 28% UAN	0.0328 + 0.02925&0.08775 + 0.94% + 2.5%	84	85	94	97	86	98	93	70	53	97	99	97	64
Fora & iodosulfuron+ halosulfuron & dica +MSO+ 28% UAN	0.0544&0.0036 + 0.02925&0.08775 + 0.94% + 2.5%	90	93	96	95	86	96	97	85	70	98	99	98	55
Fora + mesotrione + MSO + 28% UAN	0.0328 + 0.047 + 0.94% + 2.5%	81	84	86	98	97	98	94	89	86	98	99	97	61
Fora & iodosulfuron + meso+MSO+28% UAN	0.0544&0.0036 + 0.047+0.94%+2.5%	90	91	95	98	98	99	92	97	91	98	99	97	58
Foramsulfuron + primisulfuron & dica +MSO+ 28% UAN	0.0328 + 0.0152&0.0738 + 0.94% + 2.5%	86	91	93	97	86	93	91	84	60	98	99	97	55
Fora& iodosulfuron + primisulfuron&dica +MSO+28% UAN	0.0544&0.0036 + 0.0152&0.0738 + 0.94% + 2.5%	84	91	93	96	87	97	88	79	63	99	99	99	55
Fora + atrazine + MSO + 28% UAN	0.0328 + 1.0 + 0.94% + 2.5%	96	96	94	98	99	99	94	85	67	98	99	99	65
Fora& iodosulfuron + atra + MSO+ 28% UAN	0.0544&0.0036+1.0+0.94%+ 2.5%	94	95	93	98	99	99	97	95	77	98	99	98	56
Fora + acetachlor&atra & MON 4660+MSO +28% UAN	0.0328 + 0.922&0.728 + 0.94%+2.5%	97	98	89	99	99	99	98	97	91	98	99	99	58
Fora&iodo + acet&atra & MON 4660+MSO +28% UAN	0.0544&0.0036 + 0.922&0.728 + 0.94% + 2.5%	97	98	93	99	99	99	97	98	87	98	99	97	58
Nicosulfuron& rimsulfuron + meso + COC + 28% UAN	0.0233&0.0117 + 0.047 + 1.25% + 2.5%	82	74	63	97	97	98	93	93	79	98	99	97	17
Untreated		0	0	0	0	0	0	0	0	0	0	0	0	4
LSD (0.10)		6	5	6	2	5	2	6	8	8	1	1	2	22

MSO = methylated sunflower oil, 28% UAN = an aqueous solution of urea and ammonium nitrate, COC = crop oil concentrate