

Comparison of the performance of glyphosate and fomesafen&adjuvant plus fluazifop-P&fenoxaprop herbicide programs in soybean at Potsdam, MN in 2003. Breitenbach, Fritz R., Lisa M. Behnken, Angela L. Plank and Courtney L. Soderholm. The objective of this trial was to compare and evaluate the performance of glyphosate products to fomesafen & adjuvant plus fluazifop-P & fenoxaprop weed control programs in soybean in southeastern Minnesota. The research site was a Port Byron silt loam soil containing 3.2% organic matter with a pH of 6.7 and soil test P and K levels of 66 ppm and 376ppm, respectively. The previous crop was corn. In the spring, the area was disked once followed by two passes with a field cultivator. The soybean variety, DK 19-51, was planted on June 3, 2003 at a depth of 1.5 inch in 30-inch rows at 160,000 seeds/A. The plot design was a randomized complete block with four replications. Preemergence (PRE) and postemergence (POST I, POST II and POST III) 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 July 2, 18 and August 4. Application dates, environmental conditions, crop and weed stages are listed below.

Date	June 3	July 1	July 11	July 16
Treatment	PRE	POST I	POST II	POST III
Temperature (F)				
Air	67	79	72	75
Relative humidity (%)	53	46	70	70
Wind (mph)	10	9	14	11
Soil moisture	inadequate	adequate	adequate	adequate
Soybean				
Stage	seeded	V2	V4	V5
height (inch)	0	5.5	11.5	13
Common lambsquarters				
weed density/ft <sup>2</sup>	42	42	42	42
height (inch)	0	3	7	8
Velvetleaf				
weed density/ ft <sup>2</sup>	3	3	3	3
height (inch)	0	4	9	10
Wild-proso millet				
weed density/ ft <sup>2</sup>	10	10	10	10
Height (inch)	0	4	9	10
Rainfall after application (inch)				
week 1	2.78	1.98	0.05	0
week 2	0	0.32	0	0.2
week 3	0.45	0	0.25	0.05

The glyphosate products applied at POST I / POST III performed similarly, providing excellent weed control and soybean yield. Fomesafen&adjuvant + fluazifop-P&fenoxaprop + thifensulfuron and fomesafen&adjuvant + fluazifop-P&fenoxaprop + chloransulam applied at POST I had lower common lambsquarters control, July 18 and August 4 ratings, than all other herbicide programs in this trial. The soybean yield of these two treatments was also lower than the highest yielding treatments, suggesting competition from common lambsquarters had a negative impact on yield. S-metolachlor & metribuzin applied preemergence at 0.986 & 0.234 lb/A provided slightly better early season weed control than when applied at 0.824 & 0.196 lb/A, July 2 rating. All treatments provided excellent late season velvetleaf control. The highest soybean yields were achieved with sequential programs that provided very good to excellent weed control. (Southeast District, University of Minnesota Extension Service, Rochester)

Table. Performance of glyphosate and fomesafen & adjuvant plus fluazifop-P & fenoxaprop weed control programs in soybean on July 2 at Potsdam, MN in 2003 (Breitenbach, Behnken, Plank and Soderholm).

Treatment	Rate	----CHEAL----			----ABUTH----			----PANMI----			Soybean yield
		control			control			control			
		7/2	7/18	8/4	7/2	7/18	8/4	7/2	7/18	8/4	
	(lb/A)	(%)			(%)			(%)			(bu/A)
<b><u>PRE / POST I</u></b>											
S-metolachlor & metribuzin / fomesafen & adjuvant + fluazifop-P & fenoxaprop + COC + 28% UAN	0.986&0.234 / 0.235 + 0.1293&0.0367 + 1% + 2.5%	98	98	99	97	98	99	97	99	98	38.1
<b><u>PRE / POST II</u></b>											
S-metolachlor & metribuzine / glyphosate <sup>1</sup> + AMS	0.824 & 0.196 / 0.78 + 3	96	99	99	91	99	99	95	99	99	40.2
<b><u>POST I</u></b>											
Fomesafen & adjuvant + fluazifop-P & fenoxaprop + thifensulfuron + COC+28% UAN	0.235 + 0.162&0.046 + 0.00146+1%+2.5%	0	84	67	0	99	99	0	96	96	36.6
Fomesafen & adjuvant + fluazifop-P & fenoxaprop + cloransulam + COC + 28% UAN	0.235 + 0.162&0.046 + 0.0157+1%+2.5%	0	78	63	0	98	99	0	96	99	36.3
<b><u>POST I / POST III</u></b>											
Glyphosate <sup>1</sup> + AMS / glyphosate <sup>1</sup> + AMS	0.78 + 3 / 0.587 + 3	0	92	99	0	99	99	0	95	99	38.7
Glyphosate <sup>1</sup> + AMS / glyphosate <sup>1</sup> + AMS	0.54 + 3 / 0.4 + 3	0	94	99	0	99	99	0	96	99	39.8
Glyphosate <sup>2</sup> + AMS / glyphosate <sup>2</sup> + AMS	0.77 + 3 / 0.56 + 3	0	95	98	0	98	99	0	92	99	40.3
Untreated		0	0	0	0	0	0	0	0	0	14.4
LSD (0.10)		1	2	2	2	1	1	2	2	1	2.9

1. Glyphosate = Touchdown KPMG, 2. Glyphosate = Roundup WeatherMax, COC = crop oil concentrate, 28% UAN = an aqueous solution of urea and ammonium nitrate, AMS = spray grade ammonium sulfate, Helena.