

Effect of adjuvants tank-mixed with glyphosate on weed control in soybeans at Lamberton, MN in 2003. Getting, Jodie K. and Bruce D. Potter. The objective of this study was to evaluate the effect of adjuvants tank-mixed with Buccaneer and Roundup Weathermax on annual grass and broadleaf weed control in glyphosate-resistant soybeans. This study was conducted on a Normania loam soil containing 4.9% organic matter, pH 5.1 and soil test P and K levels of 32 and 272 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 2002 and was fall chiseled. On May 15, 2003 Asgrow 'AG 2201' glyphosate-resistant soybeans were planted in 30-inch rows at a seeding rate of 160,000 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	June 12
Treatment	POST
Temperature (F)	
air	77
soil (4 inch)	78
Relative humidity (%)	57
Wind (mph)	calm
Sky	p. cloudy
Soil moisture	dry
Soybean	
leaf no.	V1
height (inch)	4
Yellow foxtail	
leaf no.	2 to 4
height (inch)	2 to 4
no./ft <sup>2</sup>	50
Common lambsquarters	
leaf no.	2 to 5
height (inch)	2 to 3
no./ft <sup>2</sup>	4
Redroot pigweed	
leaf no.	2 to 4
height (inch)	1 to 3
no./ft <sup>2</sup>	3
Rainfall after application (inch)	
1 week	0.01
2 week	3.43
3 week	0.50

Early season crop development and crop canopy was delayed due to a June 23 hailstorm, which resulted in 43% defoliation of soybean leaves. The precipitation received in July and August was below average with a total of 2.96 inches compared to the historical average of 7.07 inches. On June 25, Buccaneer and Roundup Weathermax had 91 and 90% yellow foxtail control, respectively. Buccaneer + WC 334 and Roundup Weathermax + WC 334 had 83 and 74% control, respectively. Roundup Weathermax + Cornbelt Gardian Plus had 94% control. All other treatments had 88 to 92% control. Buccaneer and Roundup Weathermax had 91% common lambsquarters control. Buccaneer + WC 334 and Roundup Weathermax + WC 334 had 74 and 73% control, respectively. Roundup Weathermax + Cornbelt Gardian Plus and Roundup Weathermax + Cornbelt Gardian Plus + WC 334 had 98 and 82% control, respectively. Roundup Weathermax + Cornbelt Dri-Gard and Roundup Weathermax + Cornbelt Dri-Gard + WC 334 had 94 and 85% control, respectively. (Southwest Research and Outreach Center, University of Minnesota, Lamberton).

Table. Effect of adjuvants tank-mixed with glyphosate on weed control in soybeans at Lamberton, MN in 2003 (Getting and Potter).

Treatment <sup>a</sup>	Rate	Yellow foxtail			Common lamsbsquarters			Tall waterhemp		
		6/25	7/9	8/27	6/25	7/9	8/27	6/25	7/9	8/27
POST (4-inch weeds)	(oz/A or lb/A or %)	-----(% control)-----								
Buccaneer	16oz	91	82	43	91	86	65	97	85	74
Roundup Weathermax	11oz	90	81	46	91	90	68	96	80	74
Buccaneer+Premier 90 + Premium AMS	16oz +0.5%+1.7lb	92	81	46	95	90	73	97	84	78
Buccaneer + One-Ap XL	16oz +1.8lb	92	82	48	96	89	79	98	83	71
Roundup Weathermax + Premium AMS	11oz +1.7lb	90	80	45	92	88	73	97	80	65
Roundup Weathermax + Cornbelt Dri-Gard	11oz +1.8lb	91	82	49	94	86	68	97	80	71
Roundup Weathermax + Cornbelt Gardian Plus	11oz +2.5%	94	85	49	98	90	74	98	81	73
Buccaneer + WC 334	16oz +2.5%	83	68	28	74	59	43	97	89	79
Roundup Weathermax + WC 334	11oz +2.5%	78	63	22	73	63	37	95	87	70
Buccaneer + One-AP XL + WC 334	16oz +1.8lb+2.5%	89	79	50	89	85	71	97	89	79
Roundup Weathermax + Cornbelt Dri-Gard + WC 334	11oz +1.8lb+2.5%	88	74	31	85	83	66	97	85	81
Roundup Weathermax + Cornbelt Gardian Plus + WC 334	11oz +2.5%+2.5%	89	80	37	82	78	57	95	78	55
<b>Checks</b>										
Weedy Check	-	0	0	0	0	0	0	0	0	0
Weed-free check		100	100	100	100	100	100	100	100	100
	LSD (0.10)	2.3	3.3	8.3	4.1	7.9	11.7	1.9	7.1	14.1

<sup>a</sup> Premier 90 = surfactant; Premium AMS = spray grade ammonium sulfate fertilizer; One-Ap XL; spray grade ammonium sulfate fertilizer + surfactant + deposition + defoamer; Cornbelt Dri-Gard = spray grade ammonium sulfate fertilizer + deposition + defoamer; Cornbelt Gardian Plus = spray grade ammonium sulfate fertilizer + deposition + defoamer; WC 334 = experimental.