Evaluation of weed control with manganese (Mn) fertilizer products plus glyphosate in soybean. Li, Jianmei, Jim D. Wait, and Kevin W. Bradley. The objective of this study was to investigate the potential for antagonism between manganese fertilizer products and glyphosate when tank-mixed. This study was conducted at the Bradford Research and Extension Center near Columbia, MO. The soil was a Mexico silt loam with a pH of 6.5 and 2.0% organic matter. 'DK3852' glyphosate-resistant soybean was planted 1 inch deep on June 4 in 30 inch rows. Treatments were arranged in a randomized complete block design with four replications of 10 by 35 foot plots. Herbicide applications were made with a CO_2 backpack sprayer equipped with XR8002 flat fan nozzles calibrated to deliver 15 GPA at 17 PSI.

Application data are listed below:

Date	July 5
Treatment	4-6" weeds
Temperature (c)	
air	27.8
soil (4 inch)	28.9
Soil moisture	wet
Wind (mph)	7
Cloud cover (%)	14
Relative humidity (%)	67
Precipitation after application	
week 1 (inch)	2.47
week 2 (inch)	0.31
Soybean	
leaf no.	V4
height (inch)	10
Giant foxtail	
leaf no.	6
height (inch)	9
infestation	6/ft^2
Ivyleaf morningglory	
leaf no.	running
height (inch)	4
infestation	1/ft^2
Common waterhemp	
leaf no.	9
height (inch)	5
infestation	3/ft^2

No crop injury was observed among the 10 manganese (Mn) fertilizer products at 0.5 lb ai/A when tank-mixed with glyphosate at 0.77 lb ae/A. Lower levels of ivyleaf morningglory, common waterhemp and large crabgrass control were observed with the Tracite LF, Tecmangum, and Post-Man glyphosate combinations compared to glyphosate alone. A similar trend was observed with Tecmangum and Post-Man on giant foxtail, but not with Tracite LF. These results indicate that postemergence combinations of certain manganese products with glyphosate can reduce the overall level of weed control achieved. (Department of Agronomy, University of Missouri-Columbia)

Table. Evaluation of weed control with manganese (Mn) fertilizer products plus glyphosate in soybean. (Li, Wait and Bradley).

					Weed control											
		Soybean injury			SETFA			IPOHE			AMATA			DIGSA		
Application	Rate	7-12	7-19	8-19	7-12	7-19	8-19	7-12	7-19	8-19	7-12	7-19	8-19	7-12	7-19	8-19
	(lb/A)	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
										%						
Dissolvine E-MN-6+ Glyphosate[1]	0.5+ 0.77	0	0	0	89	97	100	48	84	96	90	98	99	84	90	99
Dissolvine E-Mn-13+ Glyphosate	0.5+ 0.77	0	0	0	87	97	100	41	81	96	88	98	96	68	88	98
Librel+ Glyphosate	0.5+ 0.77	0	0	0	81	100	100	21	87	98	89	97	97	90	90	98
Traco Mn-EDTA+ Glyphosate	0.5+ 0.77	0	0	0	93	97	100	54	82	97	94	97	99	93	89	97
Citraplex+ Glyphosate	0.5+ 0.77	0	0	0	53	96	98	30	76	93	86	93	93	85	87	92
Tracite LF Mn+ Glyphosate	0.5+ 0.77	0	0	0	31	82	100	8	62	84	25	82	83	41	75	90
Tecmangum+ Glyphosate	0.5+ 0.77	0	0	0	11	70	93	5	51	84	20	68	81	25	46	78
Post-Man+ Glyphosate	0.5+ 0.77	0	0	0	24	82	92	6	64	83	30	84	84	39	61	81
Pholex+ Glyphosate	0.5+ 0.77	0	0	0	71	97	100	25	72	88	63	90	94	79	81	98
Ele-Max+ Glyphosate	0.5+ 0.77	0	0	0	88	96	100	59	84	99	91	96	99	92	90	100
Glyphosate	0.77	0	0	0	88	98	100	66	83	99	94	96	100	90	89	100
Untreated		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LSD (0.05)		0	0	0	13	5	6	20	8	5	15	7	7	21	11	6

[1] Glyphosate was Roundup WeatherMax.