Herbicide Application Methods and Adjuvants

Glyphosate adjuvants for weed control in soybean. Perry, Illinois, 2002. Hasty, Ryan F., Christy L. Sprague, and Douglas J. Maxwell. The objective of this research was to evaluate glyphosate adjuvants for weed control in soybean. The study was established at the University of Illinois Crop Sciences Research and Education Center, Urbana. The soil was a Keomah silt loam with a pH of 6.1 and 1.5% organic matter. Asgrow 3701 soybean was planted 1.5 inches deep on June 1 in 30 inch rows. Treatments were arranged in randomized complete blocks with three replications of plots 7.5 by 30 feet. Herbicides were applied with a CO_2 backpack sprayer delivering 20 gpa and equipped with 8003 flat fan nozzles. Application information is listed below:

Date	July 25
Application	post
Temperature (F)	
Air	80
Soil	77
Soil Moisture	Dry
Wind (mph)	6S
Sky Cover (%)	100
Precip. after application	
Week 1 (inch)	0.11
Week 2 (inch)	0.01
Relative humidity (%)	69
Soybean	
Leaf no.	5
Height (inch)	7
Giant Foxtail	
Leaf no.	4
Height (inch)	5
Velvetleaf	
Leaf no.	4
Height (inch)	2
Common Lambsquarters	
Leaf no.	6
Height (inch)	1
Ivyleaf Morningglory	
Leaf no.	4
Height (inch)	3

No crop injury was observed from any of the treatments. The addition of LI-700 to glyphosate as Roundup Original® at 0.75 lb. lb/A significantly reduced velvetleaf control 28 days after treatment (DAT). Glyphosate as Roundup Ultra Max® did not benefit from the addition of an adjuvant at any application rate. Although the addition of an adjuvant to glyphosate as Roundup Original® had a significant increase in control of giant foxtail, velvetleaf, and common lambsquarters, there were few differences among adjuvants within rate ranges. Overall, the effect of glyphosate rate had a greater impact on weed control than the adjuvant used. (Dept. of Crop Sciences, University of Illinois, Urbana).

Table. Glyphosate adjuvants for weed control in soybean. Perry, Illinois, 2002. (Hasty, Sprague, and Maxwell).

Treatment	Appl Rate	Time	Glxma 7-8	Setfa 7-8	Abuth 7-8	Cheal 7-8	Ipohe 7-8	Glxma 7-24	Setfa 7-24	Abuth 7-24	Cheal 7-24	Ipohe 7-24
	(lb/A)		%inj	---------- % control ----------				%inj	---------- % control ----------			
Glyphosate[1] +NpakAMS	0.75 2.5%	post	0	98	99	85	70	0	93	99	68	60
Glyphosate[1]+Activator90 +NpakAMS	0.75+0.5% 2.5%	post	0	98	95	98	70	0	95	98	99	72
Glyphosate[2] +NpakAMS	0.75 2.5%	post	0	98	99	99	70	0	95	99	99	65
Glyphosate[1]+LandOil +NpakAMS	0.75+2.0% 2.5%	post	0	99	98	98	70	0	93	98	99	65
Glyphosate[2]+LandOil +NpakAMS	0.75+2.0% 2.5%	post	0	99	99	99	70	0	95	93	99	62
Check	-	-	0	0	0	0	0	0	0	0	0	0
Glyphosate[2]+Placement +NpakAMS	0.75+0.31% 2.5%	post	0	99	95	83	75	0	92	93	99	65
Glyphosate[2]+StrikezonePPS	0.75+3.4	post	0	99	93	91	72	0	96	98	99	68
Glyphosate[2]+ClassActNG	0.75+2.5%	post	0	99	99	99	73	0	99	99	99	70
Glyphosate[2]+LI-700	0.75+0.2%	post	0	99	62	68	67	0	95	42	99	62
Glyphosate[1] +NpakAMS	0.5 2.5%	post	0	99	65	68	67	0	75	55	68	62
Glyphosate[1]+Activator90 +NpakAMS	0.5+0.5% 2.5%	post	0	96	70	72	70	0	85	65	72	62
Glyphosate[2] +NpakAMS	0.5 2.5%	post	0	98	78	80	68	0	82	88	98	60
Glyphosate[1]+LandOil +NpakAMS	0.75+1.33% 2.5%	post	0	87	73	72	68	0	92	93	93	62
Glyphosate[2]+LandOil +NpakAMS	0.75+1.0% 2.5%	post	0	99	63	65	70	0	93	99	99	62
Glyphosate[1] +NpakAMS	0.25 2.5%	post	0	78	62	60	60	0	73	55	60	60
Glyphosate[2] +NpakAMS	0.25 2.5%	post	0	94	72	62	63	0	79	63	73	60
Glyphosate[1]+Activator90 +NpakAMS	0.25+0.5% 2.5%	post	0	92	68	62	55	0	88	53	65	60
Glyphosate[1]+LandOil +NpakAMS	0.25+1.0% 2.5%	post	0	92	70	65	55	0	73	52	63	60
Glyphosate[2]+LandOil +NpakAMS	0.25+1.0% 2.5%	post	0	78	65	60	55	0	73	65	67	57
Glyphosate[2]+Placement +NpakAMS	0.25+0.31% 2.5%	post	0	87	67	68	57	0	68	53	60	50
Glyphosate[2]+StrikezonePPS	0.25+3.4	post	0	88	65	63	57	0	77	60	62	50
Glyphosate[2]+ClassActNG	0.25+2.5%	post	0	93	65	72	57	0	73	45	55	50
Glyphosate[2]+LI-700	0.25+0.2%	post	0	77	62	63	60	0	70	42	50	50
LSD (0.05)			0	6	5	8	5	0	7	10	5	5

[1] Roundup Original [2] Roundup Ultra Max