

Influence of Winfield Solution Adjuvants on Glyphosate Performance in Corn at Scottsbluff, Nebraska during the 2009 Growing Season.

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A field study was initiated near Scottsbluff, Nebraska to compare different Winfield Solution adjuvants in combination with glyphosate for selective weed control in corn. The experimental design was a randomized complete block with four replications. Plots were 11 feet wide by 50 feet long and were located on a sandy loam soil with 0.6% organic matter and a pH of 8.0. Corn 'DKC 42-91' was planted on May 11. Herbicides were applied postemergence on June 12 when corn was in the V5 growth stage. Herbicides were applied with a tractor-mounted sprayer calibrated to deliver 20 gallons of water per acre at 32-psi pressure with Spraying Systems 11002 VS nozzles. The environmental conditions at the time of spraying are given in Table 1.

Corn visual injury was evaluated on June 17 and no crop injury was apparent (Table 2). Corn stand was not influenced by herbicide treatments. Weed density was severe and consisted of common lambsquarters, hairy nightshade, common purslane, and redroot pigweed at densities of 81, 36, 18, and 20 plants per 137 sq ft, respectively. Cornerstone Plus in combination with Class Act NG and AG02013 provided reduced hairy nightshade control compared to Roundup Power Max plus AMS. Average weed control of 94% was achieved with Cornerstone Plus plus Placement Pro Pack which was 10% more than Roundup Power Max plus AMS.

Table 1. Environmental Conditions at the Time of Herbicide Application.

Date	Air temperature	Humidity	Wind speed & direction	Time of day	Corn growth stage	Weed heights			
						Colq	Hans	Copu	Rrpw
	(F)	(%)	(mph)			----- (inches) -----			
June 12	70	52	5 NW	1:30 PM	V5	12	8	0.5	6

Table 2. Influence of Winfield Solution Adjuvants on Glyphosate Performance in Corn at Scottsbluff, Nebraska during the 2009 Growing Season.

Treatment ¹	Rate	Adjuvant		Corn		Percent weed control 6/26 ³				
				Visual injury ² 6/17	Stand 6/26	Common lambsquarters	Hairy nightshade	Common purslane	Redroot pigweed	Average
	(lb/acre)			(%)	(plants/acre)	----- (%) -----				
Nontreated	--	--	--	0	32670	0	0	0	0	0
Roundup Power Max	0.75	AMS	17 lb/100 gal	0	35280	97	96	54	91	84
Cornerstone Plus	0.75	NPAK AMS	2.5%	0	35280	97	97	44	95	83
Cornerstone Plus	0.75	Class Act NG	2.5%	0	35170	97	97	73	97	91
Cornerstone Plus	0.75	Class Act	2.5%							
		AG02013	4 fl oz	0	33620	96	88	55	84	81
Cornerstone Plus	0.75	Alliance	1.25%	0	33150	99	98	63	96	89
Cornerstone Plus	0.75	Placement Pro								
		Pack	1.0%	0	36350	98	96	90	94	94
Cornerstone Plus	0.75	AG08014	2.0%	0	34100	99	97	72	95	91
Cornerstone Plus	0.75	AG08015	2.0%	0	34450	99	97	66	97	90
Cornerstone Plus	0.75	AG08031	2.0%	0	35280	98	98	69	99	91
Cornerstone Plus	0.75	AG08034	2.0%	0	34330	99	97	46	95	84
LSD at 0.05	--	--	--	NS	NS	3	8	45	15	13

¹Herbicides applied on June 12 when corn was in the V5 growth stage and average weed height was 8 inches tall.

²Visual corn injury evaluated on June 17 on a scale from 0 to 100 with 0 equal to no injury and 100 equal to death of the plant.

³Percent weed control calculated from weed counts taken on June 26.