

Weed Management Systems for Use in Roundup-Ready Soybeans at Scottsbluff, Nebraska during the 2009 Growing Season.

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A field study was initiated near Scottsbluff, Nebraska to compare the effectiveness of preemergence herbicides in controlling weeds emerging with soybeans. The experimental design was a randomized complete block with four replications. Plots were 11 feet wide by 25 feet long and were located on a sandy loam soil with a pH of 8.1 and organic matter content of 1%. The plot area was previously planted to winter wheat in the fall of 2009. Winter wheat was killed with Roundup Weather Max in late April of 2009. Roundup Weather Max plus 2,4-D ester at 0.75 plus 0.25 lb/acre was tankmixed with different preemergence herbicides and applied to wheat stubble on May 28. Soybeans were to be planted 7 days later. Due to rain that occurred on May 31 (0.42 inch), June 1 (0.04 inch), June 2 (0.06 inch), June 3 (0.29 inch), June 4 (0.09 inch), June 5 (0.15 inch), June 7 (0.32 inch), June 8 (0.16 inch), June 10 (1.35 inch), June 11 (0.26 inch), June 13 (0.05 inch), June 14 (0.63 inch), and June 15 (0.04 inch), soybeans 'ASGROW 0492717' were not planted until June 17. From May 28 until planting 3.86 inches of rain fell which affected the performance of the preemergence herbicides applied on May 31. Soybeans were planted no-till into wheat stubble. Herbicides were applied with a backpack sprayer calibrated to deliver 20 GPA of water at 36 PSI with Spraying Systems 11002 VS nozzles. At the time of spraying the outside temperature was 83 (F), relative humidity 21%, and wind was 3 mph out of the southeast.

Early season soybean injury was evident in areas treated with Extreme and Canopy (Table 1). In both cases there was also a trend for soybean stand to be reduced by both herbicides. Weed density in the plot area consisted of common lambsquarters, hairy nightshade, redroot pigweed, and common purslane at densities of 14, 15, 13, and 21 plants per 275 sq ft. Common lambsquarters was controlled at a level of 88% or greater by Authority Assist, Authority MTZ, Gangster CoPack, Canopy, and Envive. Valor SX and Gangster CoPack were the only treatments to provide acceptable control of hairy nightshade. Excellent redroot pigweed control was obtained with Valor SX, Valor XLT, Gangster CoPack, Canopy EX, Canopy, and Envive. A preemergence application of Envive (Classic + Valor SX + Harmony) provided 93% average weed control on July 9 even though the plot area received 3.86 inches of rain from the time of application to planting. The next best treatment was Gangster CoPack (Valor SX + First Rate) which controlled 89% of the weed population that emerged after planting.

Table 1. Weed Management Systems for Use in Roundup Ready Soybeans at Scottsbluff, NE during the 2009 Growing Season.

Herbicide Treatment ¹	Rate	Soybean			Percent weed control 7/9				
		<u>Visual injury</u>		Stand	Common	Hairy	Redroot	Common	Average
	(lb/acre)	7/2	7/6	(plants/acre)	lambsquarters	nightshade	pigweed	purslane	
		(%)	(%)		----- (%) -----				
Nontreated	--	0	0	81970	0	0	0	0	0
No preemergence herbicide	--	3	0	83280	21	39	57	40	40
Lorox	0.5	2	3	82920	27	32	5	0	16
First Rate	0.016	1	0	81730	32	35	61	49	44
Prowl H ₂ O	0.95	3	2	85420	29	31	28	52	35
Valor SX	0.064	3	2	85660	63	83	82	87	79
Valor SX	0.08	3	2	86130	70	91	91	93	86
Valor XLT	0.075	3	0	83160	79	54	93	96	80
Authority First	0.131	0	0	86960	55	59	59	45	54
Authority Assist	0.125	2	0	83400	88	46	53	25	53
Authority MTZ	0.225	2	0	89450	90	45	69	26	58
Gangster CoPack	0.094	2	0	79120	83	89	89	97	89
Canopy EX	0.0203	2	3	81380	49	70	95	96	77
Canopy	0.105	3	7	74490	89	43	95	92	80
Envive	0.077	3	4	81500	99	78	97	99	93
Prefix	1.18	0	0	80670	37	37	45	33	38
Extreme	0.81	4	2	75319	47	26	58	23	39
LSD at 0.005	--	3	4	13000	38	51	34	37	24

¹All preemergence herbicides were combined with Roundup Weather Max plus 2,4-D ester at 0.75 plus 0.25 lb/acre with the addition of AMS plus premium blend surfactant (ReQUEST) at 2% w/v and applied on May 28 and soybeans were planted on June 17.