Early Preplant Applications of Valor for Selective Weed Control in Corn at Scottsbluff, Nebraska during the 2009 Growing Season.

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A field study was initiated near Scottsbluff, Nebraska to compare Valor for early season weed control in corn. The experimental design was a randomized complete block with four replications. Plots were 11 feet wide by 45 feet long and were located on a sandy loam soil with an organic matter content of 1.1% and a pH of 8.1. Corn 'DeKalb DKC42-91' was planted on May 19. Herbicides were applied early preplant on May 4 and postemergence on June 15. 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 injury was evaluated on June 11, 17, and 23 (Table 2). Minor corn injury was observed from early preplant application of Valor, Valor plus Sencor, and Valor plus Atrazine. Corn stand was not influenced by herbicide treatments.

Weed density was severe and consisted of common lambsquarters, redroot pigweed, hairy nightshade, common purslane, puncturevine, and yellow foxtail at densities of 40, 11, 2, 6, 7, and 11 plants/137 sq ft, respectively. Two applications of Roundup Power Max, one 14 days before planting and one postemergence after planting provided average weed control of 78%. The addition of Valor to Roundup Power Max 14 days before planting improved mid-season weed control to 97%.

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

						Weed heights					
Date	Air temperature	Humidity	Wind speed & direction	Time of day	Corn growth stage	Common lambsquarters	Redroot pigweed	Hairy nightshade	Common purslane	Puncture vine	Yellow foxtail
	(F)	(%)	(mph)			----------(inches)----------					
May 4	54	49	7 W	10:30 AM	----------No growth----------						
June 15	52	95	Calm	3:00 PM	V3 to V5	5	2	3.5	0.5	3	1.5

Table 2. Early Preplant Applications of Valor for Selective Weed Control in Corn at Scottsbluff, Nebraska during the 2009 Growing Season.

			Corn			
			Visual Injury[3]			Stand
Ttreatment[1]	Rate	Time of application[2]	6/11	6/17	6/23	7/2
	(lb/acre)		----------(%)----------			(plants/acre)
Nontreated	--	--	0	0	0	51920
Roundup Power Max + AMS	0.75	14 DBP				
Roundup Power Max + AMS	0.75	3-4" weeds	0	0	0	50970
Valor SX + Roundup Power Max + AMS	0.063 + 0.75	14 DBP				
Roundup Power Max + AMS	0.75	3-4" weeds	7	6	8	51800
Valor SX + Sencor + Roundup + AMS	0.063 + 0.187 + 0.75	14 DBP				
Roundup Power Max + AMS	0.75	3-4" weeds	8	7	4	52750
Valor SX + Atrazine + Roundup + AMS	0.063 + 0.5 + 0.75	14 DBP				
Roundup Power Max + AMS	0.75	3-4" weeds	5	6	8	47880
Valor SX + Roundup Power Max + AMS	0.063 + 0.75	14 DBP				
Atrazine + Roundup Power Max + AMS	0.5 + 0.75	3-4" weeds	4	4	6	52870
Balance Flex + Roundup Power Max + AMS	0.093 + 0.75	14 DBP				
Roundup Power Max + AMS	0,75	3-4" weeds	0	2	0	53100
LSD at 0.05	--	--	3	4	5	4431

[1]Ammonium sulfate was added to the spray solution at 17 lb/100 gallons of water.

[2]Time of application: 14 days before planting (14 DBP) May 4 and postemergence when average weed height was 3 to 4 inches and corn was in the V3 to V5 growth stage.

[3]Visual corn injury evaluated on a scale from 0 to 100 with 0 equal to no injury and 100 equal to death of the plant

[4]Percent weed control calculated from weed counts taken on July 2.

Table 2. Early Preplant Applications of Valor for Selective Weed Control in Corn at Scottsbluff, Nebraska during the 2009 Growing Season – Continued.

			Percent weed control 7/2[4]						
Ttreatment[1]	Rate	Time of application[2]	Common lambsquarters	Redroot pigweed	Hairy nightshade	Common purslane	Puncture vine	Yellow foxtail	Average
	(lb/acre)		---------- (%)----------						
Nontreated	--	--	0		0	0	0	0	0
Roundup Power Max + AMS	0.75	14 DBP							
Roundup Power Max + AMS	0.75	3-4" weeds	68	56	61	74	95	99	78
Valor SX + Roundup Power Max + AMS	0.063 + 0.75	14 DBP							
Roundup Power Max + AMS	0.75	3-4" weeds	95	97	99	91	99	99	97
Valor SX + Sencor + Roundup + AMS	0.063 + 0.187 + 0.75	14 DBP							
Roundup Power Max + AMS	0.75	3-4" weeds	96	90	99	91	95	99	97
Valor SX + Atrazine + Roundup + AMS	0.063 + 0.5 + 0.75	14 DBP							
Roundup Power Max + AMS	0.75	3-4" weeds	96	95	99	99	99	99	99
Valor SX + Roundup Power Max + AMS	0.063 + 0.75	14 DBP							
Atrazine + Roundup Power Max + AMS	0.5 + 0.75	3-4" weeds	99	99	99	99	99	99	99
Balance Flex + Roundup Power Max + AMS	0.093 + 0.75	14 DBP							
Roundup Power Max + AMS	0,75	3-4" weeds	71	76	99	62	95	99	91
LSD at 0.05	--	--	34	30	26	36	6	2	16

[1]Ammonium sulfate was added to the spray solution at 17 lb/100 gallons of water.
[2]Time of application: 14 days before planting (14 DBP) May 4 and postemergence when average weed height was 3 to 4 inches and corn was in the V3 to V5 growth stage.
[3]Visual corn injury evaluated on a scale from 0 to 100 with 0 equal to no injury and 100 equal to death of the plant
[4]Percent weed control calculated from weed counts taken on July 2.