Winter Wheat Tolerance and Weed Control from Preplant Treatments of Valor at Scottsbluff, Nebraska during the 2008/2009 Growing Season.

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A field study was initiated near Scottsbluff, Nebraska to examine the effect of Valor applied at different dates before wheat planting on wheat and weeds. The experimental design was a randomized complete block with four replications. The study area had been planted to winter wheat the previous year, wheat was harvested in the summer of 2008, wheat stubble was treated with glyphosate at the end of July, and this experiment was initiated on September 3. Wheat stubble was not tilled and was approximately 12 inches tall at the start of the experiment. Plots were 11 feet wide by 50 feet long and were located on a sandy loam soil with an organic matter content of 1.2% and a pH of 8.2. Valor was applied either 30 days before planting (DBP), 14 DBP, 7 DBP, or at planting. 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. Environment conditions at the time of treatment are provided in Table 1. Winter wheat 'Buckskin' was planted with a TYE no-till drill on September 30. All herbicides applied before wheat planting were tank mixed with Roundup Power Max at 0.75 lb/acre in combination with ammonium sulfate (AMS) at 17 lb/100 gallons of water.

Valor applied 14 and 30 DBP did not cause significant wheat injury (Table 2). Winter wheat was injured when Valor was applied 7 DBP and at planting. A combination of Valor plus Everest or Everest alone applied at planting also caused wheat injury. There was a trend for minor wheat injury when Sharpen was applied 7 DBP. Tansy mustard and downy brome were distributed throughout the plot area and control was evaluated on March 26, April 7, and May 20, 2009. Observations made on May 20 showed that Valor provided control of transy mustard and control was greatest when Valor was applied at planting. A spring postemergence treatment with Maverick provided the greatest downy brome control when evaluations were made on May 20.

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

Date	Air temperature	Humidity	Wind speed & direction	Time of day	Crop and weed growth
	(F)	(%)	(mph)		
September 3	61	44	9 SE	11:00 AM	none
September 16	48	84	Calm	9:00 AM	Volunteer winter wheat emergence
September 23	49	68	3 NW	9:00 AM	Volunteer wheat 2-leaf
September 30	43	79	4 W	9:00 AM	Volunteer wheat 3-leaf
April 14, 2009	43	50	2 NW	9:30 AM	Winter wheat 6 tillers Tansy mustard rosettes Downy brome 2-leaf

Table 2. Winter Wheat Tolerance and Weed Control from Preplant Treatments of Valor at Scottsbluff, Nebraska during the 2008/2009 Growing Season.

			Winter wheat visual injury[3]				
Treatment[1]	Rate	Time of application[2]	10/13/08	10/20/08	11/4/08	4/7/09	4/29/09
	(lb/acre)		(%)				
Nontreated	--	--	0	0	0	0	0
Valor SX + Roundup Power Max	0.062 + 0.75	30 DBP	0	0	0	4	4
Valor SX + Roundup Power Max	0.062 + 0.75	14 DBP	0	0	0	4	0
Valor SX + Roundup Power Max	0.062 + 0.75	7 DBP	8	5	0	26	21
Valor SX + Roundup Power Max	0.062 + 0.75	At planting	33	33	35	59	44
Everest + Roundup Power Max	0.028 + 0.75	At planting	28	25	26	41	26
Valor SX + Everest + Roundup Power Max	0.062 + 0.014 + 0.75	At planting	29	48	51	78	71
Valor SX + Roundup Power Max + Maverick + X77	0.062 + 0.75 0.031	At planting	34	34	44	60	54
Maverick + X77	0.031	POST	0	0	0	18	0
Sharpen SC + Roundup Power Max + COC	0.015 + 0.75	7 DBP	13	11	4	8	0
LSD at 0.05	--	--	15	10	17	24	18

[1]Spray additives were combined with herbicides at the following rates: Ammonium sulfate (AMS) was added to all Roundup Power Max treatments at 2.5 lb/acre, nonionic surfactant (X77) at 0.25%, and crop oil concentrate (COC) at 1% v/v.

[2]Time of herbicide application: 30 days before planting (30 DBP) 9/3/08, 14 days before planting (14 DBP) 9/16/08, 7 days before planting (7 DBP) 9/23/08, at the time of planting (9/30/08), and postemergence (POST) in the spring 4/14/09.

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

Table 2. Winter Wheat Tolerance and Weed Control from Preplant Treatments of Valor at Scottsbluff, Nebraska during the 2008/2009 Growing Season – Continued.

			Percent weed control						
			Tansy mustard			Downy brome			Kochia
Treatment[1]	Rate	Time of application[2]	3/26/09	4/7/09	5/20/09	3/26/09	4/7/09	5/20/09	3/26/09
	(lb/acre)		---------- (%) ----------						
Nontreated	--	--	0	0	0	0	0	0	0
Valor SX + Roundup Power Max	0.062 + 0.75	30 DBP	94	33	65	50	33	61	89
Valor SX + Roundup Power Max	0.062 + 0.75	14 DBP	92	53	79	50	55	64	96
Valor SX + Roundup Power Max	0.062 + 0.75	7 DBP	84	78	80	50	68	76	79
Valor SX + Roundup Power Max	0.062 + 0.75	At planting	99	69	96	99	88	62	99
Everest + Roundup Power Max	0.028 + 0.75	At planting	87	69	95	99	76	64	44
Valor SX + Everest + Roundup Power Max	0.062 + 0.014 + 0.75	At planting	98	91	94	61	94	85	86
Valor SX + Roundup Power Max + Maverick + X77	0.062 + 0.75 0.031	At planting	99	92	97	99	92	97	76
Maverick + X77	0.031	POST	99	83	88	74	68	93	86
Sharpen SC + Roundup Power Max + COC	0.015 + 0.75	7 DBP	70	13	53	50	30	13	76
LSD at 0.05	--	--	13	25	25	53	27	34	29

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[2]Time of herbicide application: 30 days before planting (30 DBP) 9/3/08, 14 days before planting (14 DBP) 9/16/08, 7 days before planting (7 DBP) 9/23/08, at the time of planting (9/30/08), and postemergence (POST) in the spring 4/14/09.