

CROP SAFETY OF GLYPHOSATE ON ROUNDUP READY HARD RED SPRING WHEAT

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The study was conducted at the NDSU Carrington Research Extension Center on a loam soil with a 6.8 pH and 3.9 percent organic matter. Glyphosate resistant Hard Red Spring Wheat 'SD99' was seeded into 6-inch rows at approximately 90 lbs. seed per acre on May 16, 2003. EPOST herbicide treatments were applied to 3- to 3.5-leaf wheat on June 9 with 55° F, 87% RH, 10% cloud cover, 6.1 mph wind, and 61° F soil temperature. POST herbicide treatments were applied to 4.5- to 5 leaf wheat on June 13 with 54° F, 94% RH, 15% cloud cover, 2.7 mph wind, and 62° F soil temperature. Individual plots were 10 ft. by 25 ft. and arranged in a randomized complete block design with three replications. Herbicide treatments were applied with a CO₂-hand boom sprayer delivering 10 gpa at 26 psi

through TJ 80015 flat fan nozzles. Crop injury was visually evaluated for chlorosis, necrosis, and growth reduction 7, 14, and 21 days after application. The trial was harvested for seed yield with a plot combine on August 19, 2003.

Glyphosate did not injure the wheat when visually evaluated for chlorosis, necrosis, or growth reduction at 1, 2, and 3 weeks after treatment (data not shown). Treatments containing Everest or Achieve caused 15 percent chlorosis and 30 percent growth reduction on all evaluation dates. Both treatments containing Banvel caused 5 percent chlorosis and 5 percent growth reduction on all evaluation dates. Wheat seed yield ranged from 44 to 65 bu/A (Table).

Table. Crop Safety of Glyphosate on Roundup Ready HRSW.

Treatment Name ^a	Rate ^b	Timing	Yield
	lb. ai/A		bu/A
Roundup Ultramax	0.375	EPOST	60
Roundup Ultramax	0.56	EPOST	56
Roundup Ultramax	0.75	EPOST	59
Roundup Ultramax	1.5	EPOST	58
Roundup Ultramax	0.375	POST	59
Roundup Ultramax	0.56	POST	55
Roundup Ultramax	0.75	POST	64
Roundup Ultramax	1.5	POST	65
		EPOST /	
Roundup Ultramax	0.375 /0.375	POST	61
Discover+Bronate Advanced+DSV	0.05+0.5+1%v/v	POST	60
Puma+Bronate Advanced	0.08+0.5	POST	61
Achieve+Bronate Advanced+Supercharge	0.18+0.5+0.5%v/v	POST	63
Everest+Bronate Advanced+NIS	0.026+0.5+0.25%v/v	POST	52
Starane+2,4-D Ester	0.1875+0.25	POST	59
Bronate Advanced	0.5	POST	54
Harmony GT+2,4-D Ester	0.023+0.25	POST	60
2,4-D Ester	0.5	POST	50
Banvel	0.125	POST	46
Banvel+2,4-D Ester	0.125+0.5	POST	47
Discover+Bronate Advanced+DSV	0.1+1.0+1%v/v	POST	58
Puma+Bronate Advanced	0.16+1.0	POST	56
Everest+Bronate Advanced+NIS	0.052+1.0+0.25%v/v	POST	44
Achieve+Bronate Advanced+Supercharge	0.36+1.0+0.5%v/v	POST	51
Untreated Check	0	-	65
LSD (0.05)			9

^aDSV and Supercharge=adjuvants from Syngenta, NIS=nonionic surfactant=Induce.

^bRates for Roundup Ultramax are in lb ae/A