

Cheatgrass control in winter wheat. Peterson, Dallas E. and David L. Regehr. An experiment was conducted near Manhattan, KS on a Reading silt loam soil with 2.5% organic matter and a pH of 6.0 to evaluate several herbicide treatments for cheatgrass control in "2137" hard red winter wheat seeded with a double disk drill on October 1, 2002. Preemergence treatments were applied to the soil surface on October 1, with 84 F and 50% relative humidity. Precipitation of 2.63 inch was received within 1 week after planting, resulting in soil crusting, crop emergence problems and thin wheat stands. Fall postemergence (FP) treatments were applied to 4-leaf and 2-tiller wheat, and 1- to 3-leaf cheat and downy brome on November 20 with 53 F, 45% relative humidity, and clear skies. Dormant (DOR) treatments were applied to tillering wheat and 3-leaf and tillering cheat and downy brome on February 12, 2003 with 51 F, 33% relative humidity, and mostly clear skies. Spring postemergence (SP) treatments were applied to multi-tiller wheat and cheatgrass on March 25 with 64 F, 18% relative humidity, and mostly clear skies. Treatments were applied with a CO₂ back-pack sprayer delivering 15 gpa at 25 psi through TT110015 Turbo Tee spray tips to the center 6.3 ft of 10- by 30-ft plots. The experiment was a randomized complete block design with three replications. Wheat injury and weed control were visually evaluated April 9 and May 20. Wheat was harvested on July 9.

Treatments with 28% UAN fertilizer carrier caused some minor leaf burn, but new growth was unaffected. All postemergence treatments gave better cheat control than downy brome control. MKH-6561 and flucarbazone provided near complete cheat control at all application timings. MON-37500 applied with 50% UAN fertilizer carrier gave near complete cheat control at all application timings, which was better than cheat control with MON-37500 treatments in water only carrier. Downy brome control was higher with fall than with comparable dormant or spring postemergence treatments. MON-37500 applied in fertilizer carrier tended to give better downy brome control than MKH-6561 treatments. Downy brome control with flucarbazone was poor. Cheat and downy brome control with MON-37500 was enhanced by application in 50% UAN fertilizer carrier, but fertilizer carrier had minimal effect on efficacy of MKH-6561. Cool, moist conditions in April, May, and June were favorable for wheat development and high yields. Wheat yields and test weights generally corresponded to cheat and downy brome control. (Dept. of Agronomy, Kansas State University, Manhattan)

Table. Cheatgrass control in winter wheat (Peterson and Regehr).

Treatment ^a	Application		Wheat		Cheat		Downy Brome		Wheat yield (Bu/A)
	Rate ^b (oz/A)	Time ^c	4-9-03 5-20-03	4-9-03 5-20-03	4-9-03 5-20-03	4-9-03 5-20-03	4-9-03 5-20-03		
			-----(% injury)----		-----(% control)-----				
MON-37500	0.5	PRE	0	0	62	40	57	53	70
MKH-6561+NIS	0.42+0.25%	FP	0	0	99	98	67	67	70
MKH-6561+NIS	0.64+0.25%	FP	0	0	99	100	77	78	74
MKH-6561+NIS+28%N	0.64+0.25%+50%	FP	0	0	100	100	75	78	73
MKH-6561+NIS+28%N	0.64+0.25%+100%	FP	2	0	100	100	77	78	73
MON-37500+NIS	0.5+0.5%	FP	0	0	93	92	78	65	73
MON-37500+NIS+28%N	0.5+0.5%+50%	FP	2	0	100	100	90	88	72
Flucarbazone+NIS	0.42+0.25%	FP	0	0	97	97	40	13	69
Flucarbazone+NIS+28%N	0.42+0.25%+50%	FP	0	1	100	99	52	27	64
MKH-6561+NIS+28%N	0.64+0.25%+50%	DOR	0	0	93	100	65	55	67
MKH-6561+NIS+28%N	0.64+0.25%+100%	DOR	0	0	92	100	63	47	68
MON-37500+NIS+28%N	0.5+0.5%+50%	DOR	0	0	88	100	70	67	67
Flucarbazone+NIS+28%N	0.42+0.25%+50%	DOR	0	0	85	98	40	27	68
MKH-6561+NIS	0.42+0.25%	SP	4	0	57	100	57	57	66
MKH-6561+NIS	0.64+0.25%	SP	3	0	57	100	53	60	67
MKH-6561+NIS+28%N	0.64+0.25%+50%	SP	3	0	60	100	57	62	68
MKH-6561+NIS+28%N	0.64+0.25%+100%	SP	3	0	60	100	60	67	67
MON-37500+NIS	0.5+0.5%	SP	0	1	47	77	53	63	62
MON-37500+NIS+28%N	0.5+0.5%+50%	SP	5	1	60	98	63	62	65
Flucarbazone+NIS	0.42+0.25%	SP	1	4	40	98	37	23	64
Flucarbazone+NIS+28%N	0.42+0.25%+50%	SP	2	1	47	100	47	27	68
No Treatment									57
LSD (5%)			2	1	5	4	12	15	6

^a NIS = Activate Plus nonionic surfactant from Agrilliance; 28%N = 28% UAN liquid nitrogen fertilizer.

^b % = % v/v.

^c PRE = preemergence; FP = fall postemergence; DOR = dormant; SP = spring postemergence.