



Fertilizer Rate Affects Feral Rye Control With Beyond and Clearmax Herbicide

A field study was initiated at the High Plains Agricultural Laboratory near Sidney, NE to evaluate the effect of adding various liquid fertilizer rates (2.5, 25, and 50% v/v) on the efficacy of Beyond and Clearmax (a co-pack of Beyond + MCPA) herbicides applied in the fall and spring to Clearfield wheat for feral rye control. The experimental design

was a randomized complete block with three replications. Feral rye seeds were broadcast by hand and then incorporated with a mulch treader immediately prior to wheat seeding. The Clearfield wheat cultivar 'Infinity CL' was seeded on September 19, 2006 at a seeding rate of 60 pounds/acre. Plots were 10 feet wide by 40 feet long. Herbicide treatments were applied with an ATV-mounted sprayer set to deliver 11 gallons/acre at 3 miles/hour and 20 psi. Fall treatments were applied on October 16, 2006 to feral rye plants that were in the 1- to 3-leaf stage with an extended leaf height of 1 to 3 inches. Winter wheat at the time of fall application was in the 1- to 4-leaf stage, with the first tiller present and an extended leaf height of 3 to 4 inches. Spring treatments were made to feral rye on March 23, 2007 when rye plants had 1 to 4 tillers and were starting to grow rapidly. Winter wheat at the time of the spring application had 3 to 5 leaves with an extended leaf height of 3 to 5 inches. The study was located on an Alliance silt loam soil with 2.1% organic matter content and a pH of 7.8.

As with previous work with feral rye in Clearfield wheat, best control was obtained with fall treatments of Beyond or Clearmax. However, feral rye control with Beyond was significantly reduced in the fall when mixed with liquid fertilizer (UAN) at the 50% v/v rate. In the spring, Beyond provided virtually no control of feral rye when mixed with UAN at rates of 25 or 50% v/v. Clearmax activity on feral rye was not affected to the extent observed with Beyond. There was no reduction in feral rye control with Clearmax applied in the fall at any UAN rate. There was a slight reduction in feral rye control with Clearmax applied in the spring with either 25 or 50% v/v UAN.

As control ratings increased, foreign material levels generally decreased. It is interesting to note, however, that despite the very poor visual control ratings for the spring-applied Beyond treatments with 25 and 50% v/v UAN, foreign material levels were not as high as might have been expected. This suggests that while the plants were not killed, seed production may have been negatively affected. Surprisingly, despite some poor visual control ratings, all herbicide treatments yielded significantly more than the check. This may have been partially the result of excellent winter and spring moisture, which resulted in very competitive wheat and excellent yields.

In this study, the higher rates of UAN appeared to antagonize feral rye control with Beyond. This antagonism by UAN was not nearly as noticeable with Clearmax. The MCPA, or some other component of the MCPA herbicide, overcame the negative effect of the higher rates of UAN on Beyond activity. This work needs to be repeated to see if the results are consistent over time.

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Treatment	Rate	Timing	Crop injury	Feral rye control	Foreign material	Wheat yield
			%			bu/A
Beyond 32-0-0 NIS	5 oz/A 2.5% v/v 0.5% v/v	Fall	0	90	0.2	51
Beyond MCPA-ester 32-0-0 NIS	5 oz/A 10 oz/A 2.5% v/v 0.5% v/v	Fall	7	94	0.2	46
Beyond 32-0-0 NIS	5 oz/A 25% v/v 0.5% v/v	Fall	0	83	0.8	50
Beyond MCPA-ester 32-0-0 NIS	5 oz/A 10 oz/A 25% v/v 0.5% v/v	Fall	3	92	0.1	53
Beyond 32-0-0 NIS	5 oz/A 50% v/v 0.5% v/v	Fall	0	22	4	61
Beyond MCPA-ester 32-0-0 NIS	5 oz/A 10 oz/A 50% v/v 0.5% v/v	Fall	0	93	0.2	54
Check			0	0	30	27
Beyond 32-0-0 NIS	5 oz/A 2.5% v/v 0.5% v/v	Spring	0	73	3.4	55
Beyond MCPA-ester 32-0-0 NIS	5 oz/A 10 oz/A 2.5% v/v 0.5% v/v	Spring	2	88	0.8	60
Beyond 32-0-0 NIS	5 oz/A 25% v/v 0.5% v/v	Spring	0	8	9.3	50
Beyond MCPA-ester 32-0-0 NIS	5 oz/A 10 oz/A 25% v/v 0.5% v/v	Spring	0	77	2	62
Beyond 32-0-0 NIS	5 oz/A 50% v/v 0.5% v/v	Spring	0	0	9.6	48
Beyond MCPA-Ester 32-0-0 NIS	5 oz/A 10 oz/A 50% v/v 0.5% v/v	Spring	0	77	2.4	58
LSD (5%)			2	9	6.4	15