WEED CONTROL AND GLYPHOSATE TOLERANT ALFALFA RESPONSE TO GLYPHOSATE RATE AND APPLICATION TIMING. Stephen D. Miller and Craig M. Alford, Professor and Assistant Research Scientist, Department of Plant Sciences, University of Wyoming, Laramie, WY 82071.

Weeds are a serious problem in both seeding and established alfalfa. Weeds compete with alfalfa for water, nutrients, and sunlight; thus reducing crop yields, shortening stand life, and lowering forage quality. Plots were established under furrow irrigation at the Research and Extension Center, Torrington, WY to evaluate weed control and glyphosate tolerant alfalfa response to three glyphosate rates (0.75, 1.12 and 1.5 lb/A) and five application timings (cotyledon, cotyledon + 3 weeks, 2nd trifoliolate, 2nd trifoliolate + 3 weeks and 4-leaf alfalfa) and compare these treatments to two commercial standards (imazethapyr+clethodim 0.063 + 0.078 lb/A and imazamox 0.047 lb/A). Plots were established in new seeding alfalfa (var. Forage Genetics RR) and were 9 by 30 ft. with three replications arranged in a randomized complete block design. Herbicide treatments were applied broadcast with a CO_2 pressurized knapsack sprayer delivering 10 gpa at 40 psi. Visual weed control and crop injury ratings were made two weeks following the last application and 1st and 2nd cut alfalfa and weed yields determined.

No alfalfa injury or stand reduction was evident with any treatment. Weed control with glyphosate was influenced by application timing but not rate. Glyphosate applications at the cotyledon or 2nd trifoliolate leaf stage required follow-up applications for complete weed control; whereas, glyphosate applications at the 4-leaf stage required no follow-up application. Weed control was better with glyphosate at all application timings than with the two commercial standards. Alfalfa yields were highest in plots where weeds were removed at the 2nd trifoliolate leaf stage or earlier and follow-up glyphosate applications did not increase alfalfa yields even though weed control was improved.

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