IMI-TOLERANT WINTER WHEAT RESPONSE TO IMAZAMOX. Stephen D. Miller*, John C. Frihauf and Craig M. Alford, Professor, former Graduate Research Assistant and Research Scientist, Department of Plant Sciences, University of Wyoming, Laramie, WY 82071.

Feral rye infestations have increased dramatically in winter wheat – fallow systems in southeastern Wyoming the last ten years and currently cost growers 0.5 to 0.75 million dollars annually. The imi-tolerant winter wheat system is a new technology which allows selective control of feral rye in this cropping system. However, cultivar response to different imazamox rates, additives and timings of application has not been investigated.

Weed free field studies were conducted under sprinkler irrigation at the Research and Extension Center, Torrington, WY in 2001-02 and 2002-03 to evaluate the response of five imidazolinone tolerant winter wheat cultivars to 0.048 and 0.096 lb/A imazamox applied with non-ionic surfactant or methylated seed oil in the early fall, late fall or early spring. The experiment was laid out as a split-plot factorial arrangement of rate, additive, and timing. Herbicide treatments were applied with a CO_2 pressurized knapsack sprayer delivering 20 gpa at 40 psi. Data collected included injury, heads/m, seed/head, yield and 200 seed weight.

Winter wheat injury with imazamox treatments was greater in 2002 than 2003. Environmental conditions differed between years with 2001-02 being cooler and drier than 2002-03 at all three application timings. However, similar trends were observed both years so the data was combined over years. Winter wheat injury was greater with early fall compared to late fall or early spring applications, with 0.096 compared to 0.048 lb/A, and with methylated seed oil compared to X-77. Yield reductions with these factors were approximately half of the early season injury ratings indicating plants partially recovered by harvest. Yield reductions were related to heads/m (r^2=0.91) but not seed/head or 200 seed weight. Fidel was the most sensitive wheat cultivar to imazamox applications and Above and AP-502CL the most tolerant.

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