

REDUCED HERBICIDE RATES FOR WILD OAT (*Avena fatua*) CONTROL: INFLUENCE OF TANK-MIX HERBICIDES. Brad K. Ramsdale, Sam J. Lockhart, and Calvin G. Messersmith, Research Fellow, Research Specialist, and Professor, North Dakota State University, Fargo, ND 58105.

Interference from wild oat causes significant yield reductions in North Dakota hard red spring wheat production. Previous research demonstrated that wild oat herbicide rates could be reduced by half when applied as split treatments (0.25X + 0.25X). Reduced grass control often occurs when graminicides are applied with broadleaf herbicides, especially at reduced graminicide rates. Therefore, field experiments were conducted near Fargo, ND, in 2001 and 2002 to evaluate the effect of tank-mixing broadleaf herbicides with reduced-rate split-applied treatments of CGA 184927 (proposed common name clodinafop), fenoxaprop-P plus safener, flucarbazone, and ICIA 0604 (proposed common name tralkoxydim) on wild oat control and wheat yield. Wild oat herbicides were applied once at 100% of the labeled wild oat rate to 3- to 4-leaf wild oat or split-applied as two 0.25X treatments totaling 50% of the full rate. Full rates were tralkoxydim at 2.8 oz ai/A, clodinafop at 0.8 oz ai/A, flucarbazone at 0.42 oz ai/A, and fenoxaprop-P at 1.32 oz ai/A. The first split treatments were applied to 1.5-leaf wild oat and the second to 4- to 5-leaf wild oat, which was 13 to 18 d after the first. Each wild oat herbicide was applied alone and with bromoxynil & MCPA ester at 4 oz ae/A, or fluroxypyr plus thifensulfuron at 1 plus 0.3 oz ai/A. Broadleaf herbicides were applied once with either the first or second split-applied treatments.

Wild oat control was 90% or greater when clodinafop, flucarbazone, tralkoxydim, and fenoxaprop-P were applied at the full-labeled-rate alone or with broadleaf herbicides. However, fenoxaprop-P as reduced-rate split-applied treatments provided 82% wild oat control, which was significantly less than fenoxaprop-P applied once at the full rate. When fenoxaprop-P was split-applied without broadleaf herbicides, wild oat control was less than with the other wild oat herbicides at 82%. Wild oat control was reduced when fenoxaprop-P was applied twice at reduced rates with bromoxynil and MCPA ester in the second application, indicating a slight antagonism. Wheat yields were similar among all treatments for each herbicide. These results indicate that wild oat herbicides can be applied as half-rate split-applied treatments plus a broadleaf herbicide and maintain effective weed control without loss of yield.