

EFFECT OF UAN CONCENTRATION AND APPLICATION TIMING ON IMAZAMOX EFFICACY AND WINTER WHEAT RESPONSE. Phillip W. Stahlman, Patrick W. Geier, and Dallas E. Peterson, Professor and Assistant Scientist, Kansas State University Agricultural Research Center, Hays, KS 67601, and Professor, Department of Agronomy, Kansas State University, Manhattan, KS 66506.

Field experiments near Manhattan and Great Bend, KS during the 2003-2004 growing season determined the effects of imazamox application timing and nitrogen carrier concentration on efficacy and crop response in imidazolinone-tolerant winter wheat. Imazamox at 35 g/ha was applied with 28% urea-ammonium nitrate (UAN) at 1, 5, 10, 25, 50, or 100% v/v of the carrier, and each treatment contained nonionic surfactant (NIS) at 0.25% v/v. All treatments were applied either fall-postemergence (FPOST) or spring-postemergence (SPOST). A treatment of imazamox at 44 g/ha plus NIS and 1% UAN was included at each application timing, as was a nontreated control.

Wheat injury at Manhattan was greatest when imazamox was applied FPOST with 25, 50, or 100% UAN (9 to 12%), whereas imazamox with 1, 5, or 10% UAN in the fall caused less than 5% injury. Little or no injury was observed with SPOST treatments at Manhattan or with any treatments at Great Bend. Imazamox at 44 g/ha with 1% UAN did not injure wheat at either application timing or location. Cheat control with imazamox was 98 to 100% at Manhattan regardless of herbicide rate or UAN concentration when applied in the fall; SPOST treatments controlled cheat completely. Feral rye control was affected by UAN concentration and the interaction of location by application timing. Averaged over locations and timings, imazamox at 35 g/ha with 1 to 10% UAN concentration controlled feral rye 75 to 80% and did not differ between concentrations. Rye control was greater when imazamox was applied with 25, 50, or 100% UAN (86 to 87%). At Manhattan, rye was controlled 98 to 99% regardless of application timing. However, control was lower at Great Bend with FPOST-applied (92%) or SPOST-applied imazamox (40%). Wheat yields did not differ between imazamox rates, UAN concentrations, or application timings, and no treatment improved yields compared to nontreated wheat. Averaged over all other factors, yields were 52.8 and 70.0 bu/A at Great Bend and Manhattan, respectively.