

THE INFLUENCE OF HERBICIDE APPLICATION TIMING ON WINTER ANNUAL GRASS CONTROL IN WINTER WHEAT. Dallas E. Peterson, Mark M. Claassen, Patrick W. Geier, and Phillip W. Stahlman, Professor and Professor emeritus, Department of Agronomy, Kansas State University, Manhattan, KS 66506-5504, Assistant Scientist and Professor, KSU Agricultural Research Center, Hays, KS 67601-9228..

Winter annual grasses can be serious weed problems in winter wheat in the Great Plains region. Several herbicides are labeled for winter annual grass control in winter wheat as fall or spring postemergence treatments when wheat and grasses are actively growing. Mid-winter treatments when plants are not actively growing are generally discouraged by the product manufacturers because of concerns about product performance. However, periods of mild weather during the mid-winter period in the Southern Plains region may provide opportunities for winter applications to control winter annual grasses in wheat. Field experiments were conducted in Hays, Hesston, and Manhattan, KS in 2007, 2008, and 2009 to evaluate fall, winter, and spring treatments for winter annual grass control in winter wheat. Pyroxsulam, sulfosulfuron, propoxycarbazone, propoxycarbazone&mesosulfuron, and imazamox were applied at the recommend rates and with the recommended adjuvants for each product. Fall applications were made in November, winter applications in January and February, and spring applications in March. Wheat and grass weeds had three leaves and zero to two tillers at the time of the fall and winter applications and multiple tillers at the time of the spring applications. All applications were made when daytime temperatures were above freezing. Pyroxsulam, propoxycarbazone, and propoxycarbazone&mesosulfuron provided excellent control of cheat and Japanese brome at all application timings. Cheat and Japanese brome control with sulfosulfuron was excellent at all timings at some locations, but when differences occurred, control generally was highest in the fall and lowest with the spring application. Imazamox provided excellent control of Japanese brome at all application timings, but control of cheat and feral rye was highest with fall application and lowest with the winter application. Downy brome control with all herbicides was generally better with fall than with winter or spring treatments. Winter herbicide treatments generally provided similar or better downy brome control than spring treatments. Many treatments resulted in some slight stunting of wheat following application. When wheat injury was observed with late spring evaluations, injury tended to be higher with spring applied herbicides than with fall or winter applications. Fall herbicide applications provide the best and most consistent control of winter annual grasses in winter wheat with the herbicides evaluated. If moderate weather prevails and plants have viable foliage, winter herbicide treatments may be a viable alternative to spring applications for control of winter annual grasses in winter wheat.