DE-742 COMPARED TO STANDARDS FOR BROMUS CONTROL IN WINTER WHEAT. Patrick W. Geier and Phillip W. Stahlman, Assistant Scientist and Professor, Kansas State University Agricultural Research Center, Hays, KS 67601, Dallas E. Peterson, Professor, Department of Agronomy, Kansas State University, Manhattan, KS 66502, and Mark M. Claassen, Professor, Department of Agronomy, Kansas State University, Hesston, KS 67062.

Experiments were conducted in 2006-07 to compare pyroxsulam (DE-742) at three rates and two application timings for winter annual brome control and crop response in winter wheat. Two experiments were conducted near Hays, KS, and one each near Manhattan and Hesston, KS. Competitive standards included sulfosulfuron, mesosulfuron, two rates of propoxycarbozone, and a premix of propoxycarbozone&mesosulfuron. Application timings were fall postemergence (FP) or spring postemergence (SP), and all experiments included a nontreated control plot.

Downy brome control at Hays increased from 73 to 84% as pyroxsulam rate increased when applied FP, and the 18.75 g/ha rate was similar to sulfosulfuron or propoxycarbozone at 44 g/ha (88 and 80%). When applied SP, pyroxsulam at any rate was 12 to 35% more efficacious on downy brome than other herbicides at Hays. Pyroxsulam at 15 or 18.75 g/ha FP was similar to sulfosulfuron, propoxycarbozone, and propoxycarbozone&mesosulfuron for downy brome control at Manhattan (90 to 97%). Pyroxsulam at 15 or 18.75 g/ha, mesosulfuron, and propoxycarbozone&mesosulfuron controlled downy brome 75 to 82% when applied SP at Manhattan. All herbicides except mesosulfuron controlled cheat completely when applied FP at Hays and Manhattan, and 99 or 100% when applied SP at Manhattan. At Hays, SP applications of pyroxsulam at 18.75 or propoxycarbozone alone at 44 g/ha controlled cheat best (81 to 86%). Averaged over application timings, pyroxsulam at any rate controlled cheat similarly to sulfosulfuron, propoxycarbozone, or propoxycarbozone&mesosulfuron at Hesston. When averaged over all herbicide treatments, FP treatments at Hesston were 7% more effective on cheat than SP treatments. Averaged over experiments, wheat injury from pyroxsulam was 5% or less and did not differ from sulfosulfuron or propoxycarbozone. Mesosulfuron alone or with propoxycarbozone caused 6 to 8% wheat injury. Due to a late spring freeze, yields could not be determined at Manhattan, and yields at Hesston were low and did not correlate well with herbicide treatments. Grain yields in the Hays cheat experiment did not differ between treated and nontreated wheat. Yields were similar between herbicide treatments in the Hays downy brome experiment, but herbicide-treated wheat yielded 7 to 9 bu/A more than nontreated wheat.