

EVALUATION OF KOCHIA CONTROL AND GRAIN SORGHUM RESPONSE TO FLUROXYPYR. Mark D. Lubbers, Phillip W. Stahlman, and Kassim Al-Khatib, Graduate Research Assistant, Professor, and Associate Professor, Kansas State University Agricultural Research Center, Hays, KS 67601 and Department of Agronomy, Kansas State University, Manhattan, KS 66506.

Most herbicides currently registered for postemergence use in grain sorghum have limited crop selectivity or do not provide adequate control of some important weeds such, as kochia. Fluroxypyr is a pyridine-based herbicide that effectively controls kochia and other annual broadleaf weeds in cereal grain crops and has potential for use in grain sorghum. Field studies were conducted at Hays, KS in 2001 and Arlington, KS in 2002 (1) to evaluate fluroxypyr efficacy and crop safety as affected by tank mixtures applied at two growth stages of sorghum, and (2) to compare the effects of adjuvants on fluroxypyr efficacy. Experiments were overseeded with kochia and *S*-metolachlor was applied preemergence at 660 g ai ha⁻¹ to control grass weeds. Regardless of growth stage (8 to 13 or 20 to 25 cm tall sorghum), fluroxypyr at 140 g ae ha⁻¹ tank mixed with atrazine and crop oil concentrate (COC) at 560 g ai ha⁻¹ + 1% v/v or metsulfuron and non-ionic surfactant (NIS) at 2.1 g ai ha⁻¹ + 0.5% v/v controlled kochia more than fluroxypyr at 140 g ha⁻¹ plus NIS or dicamba + atrazine at 310 g ae ha⁻¹ + 590 g ha⁻¹; each were more effective than atrazine + COC at 560 g ha⁻¹ + 1% v/v. Fluroxypyr + metsulfuron + NIS severely stunted crop growth and caused temporary chlorosis in both years, but did not reduce grain yield in 2001. Yield was not determined in 2002 because of drought. In the adjuvant study, none of the adjuvants evaluated (COC, methylated seed oil, Herbimax, LI 700, Liberate, Dispatch 111, or Activator 90) enhanced kochia control with fluroxypyr at 105 g ha⁻¹.