

WEED MANAGEMENT WITH POSTEMERGENCE HERBICIDE TANK MIXES IN ACETOLACTATE SYNTHASE (ALS) RESISTANT GRAIN SORGHUM. D. Shane Hennigh, Kassim Al-Khatib, and Mitch Tuinstra, Graduate Research Assistant, Professor, Department of Agronomy, Kansas State University, Manhattan, KS 66506 and Professor, Department of Agronomy, Purdue University, West Lafayette, IN 47907.

Postemergence herbicide treatments to control grasses are limited in grain sorghum. Acetolactate synthase (ALS)-inhibiting herbicides are very effective in controlling many grass species in corn, however, uses of these ALS-inhibiting herbicides is not an option in conventional grain sorghum due to grain sorghum being highly susceptible to these herbicides. With the development of ALS-resistant grain sorghum, several postemergence ALS-inhibiting herbicides can be used to control weeds in grain sorghum. Field experiments were conducted near Manhattan, KS in 2007 to evaluate the efficacy of nicosulfuron + rimsulfuron ($26 + 13 \text{ g ha}^{-1}$) applied alone or in combination with, atrazine (1.2 L ha^{-1}), bromoxynil (1.2 L ha^{-1}), carfentrazone-ethyl (36.5 mL ha^{-1}), halosulfuron + dicamba ($47 \text{ g} + 0.3 \text{ mL ha}^{-1}$), prosulfuron (35 g ha^{-1}), 2,4-D (0.9 mL ha^{-1}), metsulfuron methyl + 2,4-D ($7 \text{ g} + 0.6 \text{ mL ha}^{-1}$), or a combination of these herbicides with atrazine on grass and broadleaf weeds. Herbicide treatments were applied when weeds were 7.5 to 15 cm in height. Barnyardgrass, green foxtail, giant foxtail, velvetleaf, ivyleaf morningglory, common sunflower, overall grass, and overall broadleaf control was visually determined 2 and 4 weeks after treatment (WAT) based on a scale where 0% = no control, and 100% = complete control. Percent control of barnyardgrass, green foxtail and giant foxtail was greater than 90% and 80% for all herbicide treatments 2 and 4 WAT respectively except for the treatment nicosulfuron + rimsulfuron + carfentrazone-ethyl + atrazine 4 WAT. Overall broadleaf control was greater than 70% for all treatments except nicosulfuron + rimsulfuron + atrazine 2 WAT and 60% for all herbicide treatments 4 WAT. Nicosulfuron + rimsulfuron + metsulfuron methyl + 2,4-D and Nicosulfuron + rimsulfuron + halosulfuron + dicamba both controlled greater than 96% of all grasses and broadleaf weeds 2 and 4 WAT. Overall control of grass and broadleaf weeds was greater when nicosulfuron + rimsulfuron was applied with various broadleaf herbicides as compared to when it was applied alone.