

GRAIN SORGHUM RESPONSE TO TANK MIXES OF METSULFURON AND GROWTH REGULATOR HERBICIDES. Dave W. Brown, Kassim Al-Khatib, and David L. Regehr, Graduate Research Assistant, Associate Professor, and Professor, Department of Agronomy, Kansas State University, Manhattan, KS 66506

Field and greenhouse experiments were conducted to evaluate the efficacy and safening of metsulfuron applied with dicamba, 2,4-D, clopyralid, and fluroxypyr with and without nonionic surfactant (NIS). Greenhouse data shows that 2,4-D and dicamba safened sorghum against injury. Whereas, fluroxypyr did not safen sorghum against injury. In the field study, sorghum injury was decreased when 2,4-D and dicamba was tank mixed with metsulfuron, whereas clopyralid and fluroxypyr caused little to no reduction in injury. Sorghum injury was greatest at 1 and 2 WAT, but plants recovered from injury at 4 WAT. Safening with 2,4-D and dicamba against metsulfuron injury did not result in a reduction in ivyleaf morningglory or velvetleaf control. Ivyleaf morningglory was controlled at 4 WAT by 95, 84, 59, and 91%; and velvetleaf was controlled by 88, 82, 78, and 95% when metsulfuron was tank mixed with 2,4-D, dicamba, clopyralid and fluroxypyr respectively. This study shows that 2,4-D, and dicamba safened metsulfuron to sorghum injury, while maintaining high weed control.