

SPRING WHEAT INJURY ASSOCIATED WITH GLYPHOSATE CONTAMINATION OF ALS-INHIBITING HERBICIDES. Michael J. Moechnig, David A. Vos, Jill K. Alms, and Darrell L. Deneke, Assistant Professor, Ag Research Manager, Senior Ag Research Technician, and IPM Coordinator, Plant Science Department, South Dakota State University, Brookings, SD 57007.

Previous research and personal observations have indicated that combinations of ALS-inhibiting herbicides and glyphosate may synergize plant response. Therefore, field studies were established in 2008 and 2009 near Watertown, SD to determine if the potential for wheat injury was greater if glyphosate was contaminating ALS-inhibiting herbicides relative to glyphosate applied alone at sub-lethal rates. Treatments included glyphosate applied at 10 or 30 g ae/ha applied alone or mixed with registered rates of mesosulfuron, tribenuron, or thifensulfuron. Non-ionic surfactant was added with tribenuron and thifensulfuron and methylated seed oil was added with mesosulfuron according to label recommendations. Herbicides were applied when the wheat was approximately at the four leaf stage. In each year, glyphosate applied alone at either rate did not result in visible wheat growth response or wheat yield loss. In 2008, glyphosate applied at 30 g ae/ha with either thifensulfuron or tribenuron resulted in 11 - 26% wheat growth reduction and 19 - 26% yield loss, but no wheat growth response was noted in the glyphosate mixture with mesosulfuron. In 2009, glyphosate applied at 30 g ae/ha with either thifensulfuron or tribenuron resulted in 5 - 11% wheat growth reduction and no yield loss. There was no wheat growth response in either year when glyphosate was applied at 10 g ae/ha with any of the ALS-inhibiting herbicides. Results from this research indicated that ALS-inhibiting herbicides could synergize the effect of glyphosate on wheat but the response was variable among years.