

DOES THE ADDITION OF TRIFLUSULFURON TO GLYPHOSATE ENHANCE CONTROL OF VELVETLEAF AND COMMON LAMBSQUARTERS? Jon-Joseph Q. Armstrong and Christy L. Sprague, Graduate Research Assistant and Associate Professor, Department of Crop and Soil Sciences, Michigan State University, East Lansing, MI 48824.

Triflusalufuron-methyl is an acetolactate synthase (ALS) inhibiting herbicide commonly used in sugar beet. With the current rapid adoption of glyphosate-resistant sugar beet varieties and increasing prevalence of glyphosate-resistant and -tolerant weed species, tank mixing other products with glyphosate may be necessary to ensure satisfactory weed control. Greenhouse trials were conducted to determine if the addition of triflusalufuron-methyl to glyphosate could improve control of velvetleaf and common lambsquarters. Rates of glyphosate (0, 105, 210, 420, and 840 g ae/ha) and triflusalufuron-methyl (0, 4.4, 8.8, 18, and 35 g ai/ha) were chosen to represent 0-, 0.125-, 0.25-, 0.5-, and 1-times the label-recommended rate of each herbicide and these rates were combined in a factorial arrangement. Herbicide applications were made when weeds were 10 cm in height. Triflusalufuron-methyl alone was not effective at controlling 10 cm tall velvetleaf. Visual control of common lambsquarters with triflusalufuron-methyl ranged from 1 to 6%. Combinations of triflusalufuron-methyl and glyphosate were generally additive. Synergistic activity was observed for visual control of velvetleaf for combinations of triflusalufuron-methyl at 18 and 35 g ai/ha with glyphosate at 105 and 210 g ae/ha. Synergistic activity for visual control was also observed for common lambsquarters control for combinations of all rates of triflusalufuron-methyl with glyphosate at 420 g ae/ha. The only combination that resulted in a synergistic response for biomass reduction in velvetleaf was triflusalufuron-methyl at 35 g ai/ha and glyphosate at 105 g ae/ha. None of the herbicide combinations resulted in a synergistic reduction of biomass for common lambsquarters.