

HERBICIDE EFFICACY AND FORAGE QUALITY OF SPRING-SEEDED GLYPHOSATE-RESISTANT ALFALFA. Daniel K. Tiedemann, Bryan G. Young, Ronald F. Krausz, and Joseph L. Mathews, Undergraduate Research Assistant, Associate Professor, and Researchers, Department of Plant, Soil, and Agricultural Systems, Southern Illinois University, Carbondale, IL 62901.

Glyphosate-resistant alfalfa may provide the opportunity for more effective control of problem weed species during the crop establishment year and potentially improved alfalfa forage quality from the absence of weeds. Alfalfa seeded in the spring is typically the most challenging for weed management since this coincides with the onset of summer annual weed emergence. A field study was conducted near Belleville, IL to evaluate the use of glyphosate for crop response, weed control, yield and quality of glyphosate-resistant alfalfa planted in the spring compared with standard herbicide treatments. Herbicides treatments included single and sequential applications of glyphosate, trifluralin, trifluralin followed by glyphosate, imazethapyr, and imazethapyr plus glyphosate.

No visual injury or reductions in alfalfa plant density were observed for any herbicide treatment. Glyphosate provided 98% or greater control of fall panicum, yellow foxtail, common lambsquarters, common waterhemp, eastern black nightshade, and yellow nutsedge regardless of herbicide rate or the number of applications. Weed control from glyphosate was more consistent across evaluation timings compared with the standard treatments of trifluralin and imazethapyr. Even though the standard treatments contained greater amounts of weeds in the forage at the first and second harvest, herbicide treatments did not influence alfalfa yield. At the first harvest, alfalfa from plots treated with trifluralin alone was lower in crude protein (CP) and relative feed value (RFV) than plots treated with glyphosate. At the second harvest no differences were evident in the CP and RFV between the herbicide treatments. This research suggests the use of glyphosate in glyphosate-resistant alfalfa may improve weed control compared with standard herbicide treatments. However, alfalfa yield was not increased with the use of glyphosate and the benefits in terms of alfalfa forage quality were only temporary.