EVALUATION OF GLYPHOSATE RESISTANT ALFALFA IN A FORAGE PRODUCTION SYSTEM. S. Ann McCordick, James J. Kells, and Richard H. Leep, Graduate Student, Professor, and Professor, Department of Crop and Soil Sciences, Michigan State University, East Lansing, MI 48824-1325.

Weed control during alfalfa establishment is a challenge for forage producers. Glyphosate resistant alfalfa provides a new option for weed management during alfalfa establishment. Field studies were initiated in 2003 and 2004 to determine the effect of establishment method and weed control method on forage production, forage quality and alfalfa stand establishment in glyphosate resistant alfalfa. Seeding methods included clear seeding and companion seeding with oats. Herbicide treatments included glyphosate, imazamox (clear seeding) or imazamox + clethodim (companion seeding), and no herbicide. No alfalfa injury was observed from glyphosate. In 2003, seeding method and weed control method did not affect total seasonal forage production. In 2004, total forage yield was reduced where a herbicide was applied, especially in the companion seeding. With no herbicide application, forage yield was higher with the companion seeding compared with the clear seeding. With herbicide application, no differences in forage yield were observed between the establishment methods. Weed control increased total seasonal alfalfa production in both establishment methods in each year. With no herbicide application, alfalfa yield was higher with the clear seeding system. With the conventional herbicide system, alfalfa yield was higher with the companion seeding in 2003, with no differences observed in 2004. With glyphosate, no differences in alfalfa yield were observed between establishment methods in either year. In each year, total seasonal weed biomass was reduced where a herbicide was applied, regardless of establishment method. Alfalfa plant density in the fall of the establishment year was not affected by establishment method or weed control method in either year.

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