

ERADICATION STUDIES IN *MISCANTHUS X GIGANTEUS*. Eric K. Anderson, Thomas B. Voigt, Germán A. Bollero, Aaron G. Hager, Graduate Research Assistant, Associate Professor, Professor, and Associate Professor, Department of Crop Science, University of Illinois at Urbana-Champaign, Urbana, IL 61801.

*Miscanthus x giganteus* (Mxg) is a perennial C4 grass currently being investigated in the U.S. as a potential bioenergy feedstock. It is a sterile triploid hybrid with an extensive rhizome mass and high biomass potential. Adoption of a non-native perennial species by U.S. growers could be enhanced with established methods of eradication. Field experiments were conducted from 2007 to 2009 to evaluate several methods of controlling Mxg. An experiment involving fall and spring applications of glyphosate (1730 g ae/ha) following a late summer harvest of above-ground biomass showed that fall, spring, and fall + spring applications significantly reduced above-ground biomass the summer following spring treatments. A second experiment evaluating shallow spring tillage and glyphosate (2530 g ae/ha) treatments showed that tillage in combination with one or two glyphosate applications provided the highest level of control in the same growing season. However, substantial regrowth occurred the following season. A third experiment evaluated the feasibility of planting glyphosate-resistant soybean directly into a mature stand of Mxg without significant yield reduction. Results showed that, compared with a weed-free control, soybean yield was not reduced when one (1740 g ae/ha) or two sequential (1740 g ae/ha + 790 g ae/ha) glyphosate applications were made in-crop. One soybean field was subsequently rotated to glyphosate-resistant corn in 2009 with the same treatment scheme. Corn yield results were similar to those from the soybean experiment. The Mxg population was also reduced from the previous season, but complete eradication was not achieved. These experiments indicate that tillage and glyphosate can control a mature Mxg stand, but treatments will need to be employed for at least two growing seasons for complete eradication.