

TOLERANCE OF MISCANTHUS TO PREEMERGENCE AND POSTEMERGENCE HERBICIDES. Alexander J. Lindsey*, Wesley J. Everman and Calvin F. Glaspie, Graduate Research Assistant, Assistant Professor and Graduate Research Assistant, Department of Crop and Soil Sciences, Michigan State University, East Lansing, MI 48824.

Cellulosic ethanol production has been a focus in the continuing efforts to produce alternative fuel sources in the green economy. Miscanthus (*Miscanthus giganteus*), a non-native perennial grass, is slow to establish, but viable stands tend to be very prolific in biomass production, which indicates this species may be a good source for cellulosic ethanol production. A greenhouse study was conducted in East Lansing, MI to examine the tolerance of Miscanthus to PRE and POST herbicides. Seventeen PRE herbicides were applied at planting and evaluated at 28 and 35 days after emergence (DAE). Clomazone caused greatest injury, 5.4% and 6.0% at 28 DAE and 35 DAE, respectively, but this was not statistically different from the other PRE treatments ($\alpha=0.05$). Eighteen POST herbicides were applied when Miscanthus was 30 cm in height and was evaluated at 7, 14, 21, and 28 days after treatment (DAT). At 28 DAT, Miscanthus treated with glyphosate, foramsulfuron, nicosulfuron, and imazamox exhibited 54, 32, 28, and 10% injury, respectively, which were statistically higher than all other treatments. Treatments of aminopyralid, dicamba + diflufenzopyr, and atrazine caused 0% injury at all ratings. Dry aboveground biomasses from glyphosate, foramsulfuron, nicosulfuron, and imazamox were 1.3, 1.4, 1.6, and 2.6 grams, respectively, which were significantly lower than all other treatments. Aminopyralid, halosulfuron, topraomezone, and dicamba + diflufenzopyr treatments resulted in the greatest dry aboveground biomass. Results from this study suggest the PRE herbicides examined have potential for use in field applications with minimal risk to Miscanthus establishment. POST herbicides examined in this study caused varying levels of injury but no mortality, which suggests a wide range of herbicides for potential use in Miscanthus stands. The survivability of Miscanthus when treated with PRE and POST herbicide indicates future control of this grass may be difficult.