

RESPONSE OF FIELD COLLECTED INDIANA GIANT FOXTAIL POPULATIONS TO GLYPHOSATE. Benjamin E. Neild, Paul T. Marquardt, Greg R. Kruger, and William G. Johnson, Undergraduate Student, Research Associate, Graduate Research Assistant, Associate Professor, Department of Botany and Plant Pathology, Purdue University, West Lafayette, 47907.

Giant foxtail (*Setaria faberi*) is a problematic weed in for corn and soybean producers in Indiana. Recently there has been some concern about evolution of glyphosate resistance in grass weeds such as giant foxtail. The objective of this research was to evaluate a number of Indiana giant foxtail for glyphosate resistance. Seven giant foxtail populations were collected from various locations throughout Indiana. Dose response studies were conducted in the greenhouse and data were subjected to non-linear log-logistic analysis in R. The GR₅₀ of the most susceptible population was 0.1605 ± 0.0150 (SE) kg ae/ha based on visual control estimates. The GR₅₀ of the most tolerant population was 0.2835 ± 0.0283 kg ae/ha based on visual control estimates. The standard use rate for producers in Indiana is 0.84 kg ae/ha. We found that five of the seven populations had GR₉₀ values above the 0.84 kg ae/ha. The GR₉₀ of the most susceptible population was 0.5124 ± 0.3010 kg ae/ha based on visual control estimates. The GR₉₀ of the most tolerant population was 1.7356 ± 0.4269 kg ae/ha based on visual control estimates.