

GLYPHOSATE RESISTANT HORSEWEED (*CONYZA CANADENSIS*) CONTROL IN NO-TILLAGE SOYBEANS. Vince M. Davis*, William G. Johnson, Jeff W. Barnes, and Kevin D. Gibson, Research Assistant, Assistant Professor, Post-Doctoral Research Assistant, Assistant Professor of Weed Science, Purdue University, Dept. Botany and Plant Pathology, Lilly Hall, 915 W. State Street, West Lafayette, IN 47907-2054

Glyphosate resistant horseweed is a growing threat in no-tillage soybean production across the North Central region. Glyphosate resistant horseweed was first reported in Delaware in 2000 and has since been reported in several other states including Indiana, Ohio, Tennessee, Kentucky, and Arkansas. Tillage is an effective management approach, but it is important to find other integrated solutions for the preservation of existing no-tillage fields. The objective of this experiment was to evaluate the efficacy of glyphosate alone and in tank mix combinations on control of glyphosate resistant horseweed in a mixed resistant and susceptible horseweed population. A randomized complete block design field experiment was evaluated in 2003 near Sellersburg, IN. Glyphosate was applied alone at (862.4g ae/ha) and in combination with cloransulam-methyl (17.6g ai/ha), chlorimuron-ethyl (17.5g ai/ha), flumioxazin (35.7g ai/ha), flumetsulam (56g ai/ha), imazaquin (136.5g ai/ha), metribuzin (279.8g ai/ha), and sulfentrazone (210g ai/ha) 12 days before planting. Horseweed biomass reduction ratings were taken at 12, 22, 39, and 55 days after treatment (DAT). Glyphosate plus cloransulam-methyl, chlorimuron-ethyl, flumioxazin, and flumetsulam all provided significantly better horseweed control than glyphosate alone. Glyphosate plus sulfentrazone significantly improved horseweed control at 55 DAT only. Glyphosate plus imazaquin and metribuzin resulted in lower control than glyphosate alone at 12 DAT. However, glyphosate plus imazaquin provided similar control to glyphosate alone at 22, 39, and 55 DAT. Glyphosate plus metribuzin provided similar control to glyphosate alone at 22 and 39 DAT and better control than glyphosate alone at 55 DAT.