

CONFIRMATION OF PPO-INHIBITOR RESISTANCE IN AN ILLINOIS WATERHEMP POPULATION. Aaron G. Hager, William L. Patzoldt, and Patrick J. Tranel, Assistant Professor, Graduate Research Assistant, and Assistant Professor, Department of Crop Sciences, University of Illinois, Urbana, IL 61801.

A waterhemp population in western Illinois was not controlled following a postemergence application of lactofen in 2001. In 2002, field research was established at the location where the putative protoporphyrinogen oxidase (PPO)-resistant waterhemp population was discovered. The objective of these experiments was to determine the response of this waterhemp population to soil-applied and foliar-applied herbicides, including a variety of PPO-inhibiting herbicides and herbicides with other modes of action. Data collected 30 days after application of soil-applied herbicides revealed that all rates of sulfentrazone, flumioxazin, and fomesafen controlled waterhemp 86 percent or greater, suggesting this population was susceptible to these PPO-inhibiting herbicides applied to the soil. No soil-applied acetolactate synthase (ALS)-inhibiting herbicide provided control of this population, while control from herbicides with other modes of action was 81 percent or greater. Foliar-applied lactofen, fomesafen, acifluorfen, and carfentrazone provided between 13 and 46 percent control of waterhemp 21 days after application, comparable to the poor control reported by the grower following the lactofen application in 2001. Similar to the soil-applied experiment, no foliar-applied ALS-inhibiting herbicide controlled the waterhemp population. In contrast to the effective waterhemp control (81 percent) from soil-applied atrazine, foliar-applied atrazine provided only 14 percent control 21 days after application. Glyphosate was the only foliar-applied herbicide that effectively controlled this waterhemp population.