

AN UPDATE ON THE DISTRIBUTION OF GLYPHOSATE-RESISTANT HORSEWEED (CONYZA CANADENSIS) IN INDIANA. Vince M. Davis*, William G. Johnson, and Kevin D. Gibson, Research Associate, Associate Professor, and Assistant Professor, Department of Botany and Plant Pathology, Purdue University, West Lafayette, IN 47907.

Indiana soybean producers have been concerned with the geographic distribution and frequency of glyphosate resistant horseweed (GRH) for the last few years. The objective of this project was to develop a field survey system to determine both geographic distribution and frequency of GRH occurrence across the state. An additional project goal was to quickly disseminate this information to agriculture practitioners across the state. In 2003, counties were selected for sampling with highest priority on counties with confirmed or suspected glyphosate-resistance and counties which had a high percentage of cropland in conservation tillage systems. Survey sites within a county were randomly pre-selected using maps developed from the Cropland Data Layer program conducted by the National Agricultural Statistical Service. The coordinates for the randomly selected soybean fields were downloaded to a GPS unit and a driving route was developed to facilitate efficient travel time between survey sites. A form was used at each survey site to gather information including all weed escapes protruding through the soybean canopy and other cropping practices. If horseweed escapes were present at the survey site, seed heads from forty plants were collected. The random survey system was supplemented by taking up to one additional sample between pre-selected points from soybean fields in which horseweed was clearly visible from the road. Supplemental survey sites were not included in frequency analysis. In the fall of 2003 and 2004, 1116 sites were surveyed, 450 horseweed samples were collected and 141 populations demonstrated less than 60% visual control at 21 days after an initial 1.5 lb ae/A glyphosate screen. GRH has been randomly detected in all regions of the state, but the frequency of GRH escapes in soybean fields is the highest in the southeastern region at 38%. The results from the horseweed survey and subsequent herbicide screening efforts have been disseminated through a website which contains useful and readily accessible information to all agriculture practitioners concerned with the problem of GRH.