THE STATUS OF GLYPHOSATE-RESISTANT WATERHEMP IN MISSOURI. Kevin W. Bradley and Travis Legleiter, University of Missouri, Columbia, MO; Leon Hunter, Craig Nichols, and Chuck Foresman, Syngenta Crop Protection, Greensboro, NC.

Corn and soybean growers and agricultural retailers throughout Missouri were surveyed during 2006 and 2007 to determine the extent of glyphosate-resistant waterhemp (*Amaranthus rudis* Sauer) in Missouri. The survey was also conducted to assess current herbicide-use patterns utilized in soybean production, and understand perceptions about glyphosate performance and glyphosate-resistance in other weed species. When asked about the level of concern surrounding the development of glyphosate resistance in weed species, 39% of the agricultural retailers and crop consultants surveyed indicated they were very concerned about this issue compared with only 12% of the growers surveyed. More than half of the farmers, crop consultants, and agricultural retailers surveyed indicated that waterhemp was the most common weed escape in soybeans. Of the agricultural retailers who failed to control waterhemp with glyphosate in 2007, 35% believed the waterhemp was glyphosate-resistant. Greenhouse experiments were also conducted with waterhemp seed collected from 12 separate locations across Missouri in 2006 and these experiments confirmed glyphosate-resistance in waterhemp in at least six counties located in central and northwestern Missouri. Following waterhemp, survey respondents listed morningglory species (*Ipomoea* spp.) and giant ragweed (*Ambrosia trifida* L.) as the second and third most common species, respectively, that were poorly controlled or not controlled by glyphosate in soybeans.

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