RESPONSE OF HORSEWEED POPULATIONS TO FOUR DIFFERENT GROWTH REGULATOR HERBICIDES. Ryan S. Henry, Greg R. Kruger, Vince M. Davis, Stephen C. Weller, William G. Johnson, Graduate Research Assistant, Graduate Research Assistant, Department of Botany and Plant Pathology, Purdue University, West Lafayette, IN 47907, Assistant Professor, Department of Crop Science, University of Illinois, Urbana, IL 61801, Professor, Department of Horticulture and Landscape Architecture, Professor, Department of Botany and Plant Pathology, Purdue University, West Lafayette, IN 47907.

Dicamba and 2,4-D are commonly used growth regulator herbicides to control glyphosate-resistant horseweed (*Conyza canadensis*). These herbicides are currently limited to application before crops are planted. However, 2,4-D and dicamba tolerant corn and soybean are scheduled to be released in the near future, and this will increase the use of these herbicides for mid-season weed control. A greenhouse dose response study was conducted to evaluate the effectiveness of 2,4-D ester, 2,4-DB, diglycolamine salt of dicamba, and dimethylamine salt of dicamba on four Indiana horseweed populations. One population displayed two-fold higher levels of tolerance to 2,4-D ester. Two populations displayed a three-fold and four-fold higher tolerance to diglycolamine salt of dicamba. Four times the labeled rate of 2,4-DB was needed to achieve 90% control. Diglycolamine salt of dicamba provided the highest level of control of the four herbicides tested. The results of this study indicate these growth regulator herbicides, except 2,4-DB, are effective options for controlling glyphosate-resistant horseweed.

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