

SOYBEAN HERBICIDE PROGRAMS FOR EFFECTIVE MANAGEMENT OF GIANT RAGWEED. Anthony F. Dobbels and Mark M. Loux, Research Associate and Professor, Department of Horticulture and Crop Science, The Ohio State University, Columbus, OH 43210.

Giant ragweed has been ranked as one of the worst weeds in corn and soybean production, and continues to be problematic for many producers in Ohio. A single application of glyphosate or other POST herbicides often fails to adequately control giant ragweed, due to its rapid growth and ability to emerge after POST herbicides are applied. A field study was conducted to determine the effectiveness of herbicide programs consisting of PRE followed by POST herbicides, or multiple POST herbicide applications, for giant ragweed control in glyphosate-resistant soybean. A secondary objective was to determine the effect of PRE herbicides on giant ragweed population density and size at the time of POST herbicide application.

The PRE herbicide treatments, imazaquin (0.14 kg/ha), cloransulam (0.024 kg/ha) plus flumioxazin (0.071 kg/ha), and chlorimuron (0.073 kg/ha) plus metribuzin (0.21 kg/ha) controlled 70 to 77%, 65 to 82%, and 20 to 55% of the giant ragweed, respectively, at the time of the POST herbicide application. Control was due primarily to a reduction in giant ragweed size, not a reduction in population density. Giant ragweed population densities at the time of POST application ranged from 54 to 280 plants per plot (18 m²), and were not affected by PRE herbicide treatment. Application of PRE herbicide resulted in a greater proportion of giant ragweed plants less than 7 cm tall, compared to treatments without PRE herbicides. Since POST herbicides were applied based on giant ragweed height, the use of PRE herbicides allowed POST herbicides to be applied 7 days later, compared to treatments consisting of only POST herbicides.

The most effective treatments, which provided greater than 95% control of giant ragweed at the time of soybean harvest, included: sequential POST applications of glyphosate (0.86 kg a.e./ha) or fomesafen (0.17 kg/ha); and PRE application of imazaquin followed by POST glyphosate. These treatments resulted in a complete absence of seed-producing giant ragweed plants. Control for most other combinations of PRE herbicides with POST glyphosate or fomesafen ranged from 80 to 93%, which was similar to control with a single POST application of glyphosate. These treatments resulted in 2 to 6 seed-producing giant ragweed plants per plot at the end of the season. The addition of a diphenyl-ether herbicide to POST glyphosate treatments did not improve giant ragweed control or further reduce the number of plants producing seed, compared to glyphosate alone.