

MANAGEMENT OF PROBLEMATIC POPULATIONS OF COMMON LAMBSQUARTERS IN GLYPHOSATE-RESISTANT SOYBEAN. Andrew M. Westhoven*, William G. Johnson, Mark M. Loux, and Jeff M. Stachler, Graduate Research Assistant, Associate Professor, Department of Botany and Plant Pathology Purdue University, West Lafayette, IN 47907, Professor, Extension Program Specialist, Department of Horticulture and Crop Science The Ohio State University, Columbus, OH 43210.

Common lambsquarters (CLQ) biotypes with reduced sensitivity to glyphosate were identified in greenhouse research at Purdue and Ohio State Universities in 2005. Field studies were conducted at four sites in Indiana and Ohio in 2006 to evaluate various control strategies in glyphosate-resistant soybeans. Three different management systems were evaluated consisting of no burndown, burndown without a residual, and burndown plus a residual with various postemergence treatments and timings within each management system.

Both burndown systems effectively controlled all emerged CLQ at the time of application. The burndown plus residual system reduced the number of CLQ at the time of postemergence applications by 71 to 100%. The most effective management strategies, providing the greatest control of CLQ, were 1) a burndown plus a residual and at least one postemergence application of glyphosate, 2) a burndown without residual followed by two postemergence applications of glyphosate, or 3) a burndown without a residual followed by a non-glyphosate postemergence herbicide followed by a postemergence application of glyphosate. Poor control of CLQ occurred when a burndown was not used and only a single postemergence application of glyphosate of 0.84 lb ae/ac was applied. Finally, we observed individual plants that survived multiple glyphosate applications and rates ranging from 0.84 to 3.4 lb ae/ac.