

FALL-APPLIED HERBICIDE EFFICACY ON SUMMER ANNUAL WEEDS IN NO-TILL SOYBEAN. Chad D. Lee, Mark M. Loux, and Karen A. Renner. Assistant Professor, Department of Agronomy, University of Kentucky, Lexington, KY 40546-0091, Associate Professor, Department of Horticulture and Crop Science, The Ohio State University, Columbus, OH 43210, and Professor, Department of Crop and Soil Sciences, Michigan State University, East Lansing MI 48824.

Research was conducted in 2001 and 2002 in Ohio and Michigan comparing the efficacy of fall, early spring and 7 d pre-plant herbicide applications. Herbicide programs included glyphosate at 841 g ae ha⁻¹, chlorimuron ethyl + metribuzin + tribenuron methyl at 28 + 115 + 5.25 g ai ha⁻¹, chlorimuron ethyl + sulfentrazone + tribenuron methyl at 26.9 + 132 + 5.25 g ai ha⁻¹, imazaquin + glyphosate at 101 + 628 g ae ha⁻¹, imazethapyr + glyphosate at 70 + 628 g ae ha⁻¹, flumetsulam + metribuzin at 56 + 210 g ai ha⁻¹, paraquat + metribuzin 701 + 210 g ai ha⁻¹, and metribuzin at 421 g ai ha⁻¹. Each herbicide program included 2,4-D at 560 g ai ha⁻¹. Winter and summer annual weeds that were not controlled by the fall, early spring, or 7 d pre-plant programs remained in the soybeans until the R1 growth stage at which time glyphosate at 841 g ae ha⁻¹ was applied. Weed control ratings were taken 28 d after planting and at R1 soybean stage. Fall applications containing chlorimuron ethyl controlled common lambsquarters and common ragweed. All fall applications provided less than 90% control of annual grasses and giant ragweed. Early spring and 7 d pre-plant applications of the chlorimuron programs, metribuzin + flumetsulam, glyphosate + imazaquin and glyphosate + imazethapyr controlled common lambsquarters in Michigan in 2001 and 2002. Those same programs applied in early spring or 7 d pre-plant controlled common ragweed in Michigan in 2002. No differences in yield resulting from fall herbicide programs were observed in Ohio. Soybean yields were greater with fall applications containing chlorimuron ethyl or imazaquin in Michigan in 2002 and glyphosate + 2,4-D in 2001 compared with other fall applications. No fall herbicide applications controlled all summer annual weeds. Annual grass and giant ragweed populations would increase over time if weed management was based solely on fall applications since no fall program controlled these species. In general, most herbicide programs applied in the spring provided better control of summer annuals than herbicide programs applied in the fall.