

PERFORMANCE AND ECONOMIC COMPARISONS OF DIFFERENT GLYPHOSATE PRODUCTS IN GLYPHOSATE RESISTANT CORN AND SOYBEANS WEED MANAGEMENT SYSTEMS. David E. Hillger, Thomas T. Bauman and Michael D. White, Graduate Research Assistant, Professor and Research Assistant, Department of Botany and Plant Pathology, Purdue University, West Lafayette, IN 47907.

Studies were conducted in 2002 at the Purdue University Agronomy Research Center located northwest of West Lafayette, IN. Five different glyphosate formulations were tested at a rate of 0.84 kg ai ha⁻¹ and 1.68 kg ai ha⁻¹. The formulations tested were: Roundup WeatherMax, Roundup UltraMax, Touchdown IQ, Glyphomax Plus and Clearout 41 Plus. WeatherMax is a potassium salt formulation, Touchdown is a diammonium salt and UltraMax, Glyphomax and Clearout are isopropylamine salt formulations. The weed control, crop response and grain yield for the ten different treatments were evaluated in glyphosate resistant corn and glyphosate resistant soybeans. The corn trials were conducted in a conventional tillage production system. An application of s-metolachlor at 1.44 kg ai ha⁻¹ and atrazine at 1.86 kg ai ha⁻¹ was applied preemergence. The soybean trials were conducted in a no-till production system. The different glyphosate formulations were tested as a burndown application and as a post emergence application in the soybeans. The weed species present included giant foxtail, velvetleaf and ivyleaf morningglory. The weed control resulting from the preemergence application in the corn was excellent, resulting in very low weed pressure at the time of post emergence application. The weed control for the burndown and post emergence applications in the soybeans did not produce significant differences between treatments. The glyphosate treatments did not produce significant differences in the crop response for either the corn or soybeans. Yields were not significantly different between treatments in the corn or soybeans. Therefore it can be concluded that for the weed species present and growing conditions observed, the glyphosate formulation used did not significantly impact the performance of the corn or soybeans.