

FALL APPLIED HERBICIDES FOR WEED MANAGEMENT IN NO-TILL CORN. Romina Güeli and Reid J. Smeda, Graduate Research Assistant and Associate Professor, Department of Agronomy, University of Missouri, Columbia, MO 65211

Weed management programs in corn include greater utilization of POST herbicides, some of which have little or no residual activity. Lack of residual herbicides is thought to contribute to a greater prevalence of winter annual weeds. This study was established in central and northeast Missouri to determine the impact of fall applied herbicides versus traditional spring programs for weed management in corn.

In early November of 2001 and 2002, rimsulfuron + thifensulfuron, rimsulfuron + thifensulfuron + tribenuron, rimsulfuron + thifensulfuron + simazine, simazine, tribenuron, imazethapyr + imazapyr, imazethapyr + imazapyr + simazine, flumetsulam + metribuzin or thifensulfuron + tribenuron were applied and compared to 2,4-D applied alone. Spring treatments included dimethamid + atrazine + glyphosate or glyphosate + atrazine. Henbit (*Lamium amplexicaule*) and common chickweed (*Stellaria media*) control exceeded 90% until early May for all fall applied residual herbicides. Common chickweed control was less than 60% with 2,4-D alone and henbit control was erratic. Corn was planted no-till in early May, and residual activity of fall applied herbicides was determined 2 weeks after planting (WAP) for giant foxtail (*Setaria faberi*) and common ragweed (*Ambrosia artemisiifolia*). Giant foxtail control ranged from 0 to 95% over sites and years, with the most consistent treatments being tribenuron + simazine, imazethapyr + imazapyr, and imazethapyr + imazapyr + simazine. These same treatments also resulted in 70-95% control of common ragweed. The most inconsistent treatments for control of winter annuals included simazine alone, flumetsulam + metribuzin, and thifensulfuron + tribenuron. To evaluate early season impact of weeds or weed residues on corn, all weeds were removed with nicosulfuron + rimsulfuron + mesotrione or imazethapyr + imazapyr. Across all site-years, the highest grain yield was measured in a fall applied treatment containing simazine in 3 of 4 experiments.