

INFLUENCE OF WINTER ANNUAL WEED CONTROL ON SUMMER ANNUAL WEED EMERGENCE. Jared S. Webb\*, Bryan G. Young, William G. Johnson, and J. Earl Creech, Graduate Assistant and Associate Professor, Southern Illinois University, Carbondale, IL 62901, Assistant Professor and Research Assistant, Purdue University, West Lafayette, IN 47907.

Winter annual weeds have become a greater management concern in corn-soybean rotations throughout the southern Corn Belt. Increased adoption of no-till production, reduced use of residual herbicides, and recent mild winter seasons have all been cited as possible contributors to the problem. Fall applications of herbicides have been utilized to improve management of these winter annual weeds. However, field observations have suggested that removal of winter annual weeds may alter spring emergence patterns of important summer annual weed species. Giant ragweed and common waterhemp are two of the most problematic weeds in Illinois (IL) and Indiana (IN) crop production fields. Therefore, the objectives of this research were to determine the influence of winter annual weed removal timing on giant ragweed and common waterhemp emergence and subsequent control in soybean. Research was conducted in IL and IN in 2004 with four winter annual weed removal strategies: 1) no control of winter annuals in the fall or spring, 2) control of winter annuals in both the fall and spring, 3) control of winter annuals in the fall but not the spring, and 4) control of winter annuals in the spring but not the fall. Winter annual weeds were removed with glyphosate at 840g ae/ha.

Winter annual weed removal strategy did not affect initial emergence of giant ragweed at two of three locations. However, at one location in IL, giant ragweed emergence was greater when winter annual weeds were controlled in the fall only compared with removal strategies that used spring removal. At two of the three locations, giant ragweed biomass was greater when winter annual weeds were controlled in the fall only. At both locations in IL, control of giant ragweed with glyphosate at 18 days after planting was lower with the fall only removal strategy. There was no difference in initial emergence of common waterhemp or biomass due to winter annual weed removal strategy at any location. However, at one location, controlling winter annual weeds in the fall and spring resulted in greater common waterhemp densities compared with winter annual weed control in the fall only.