

CONTROL OF WINTER ANNUAL WEEDS AFFECTS SUMMER ANNUAL WEED GROWTH AND MANAGEMENT. Jared S. Webb, Bryan G. Young, William G. Johnson, and J. Earl Creech, Graduate Research Assistant and Associate Professor, Southern Illinois University, Carbondale, IL 62901, Associate Professor and Graduate Research Assistant, Purdue University, West Lafayette, IN 47907.

Removal of winter annual weeds in the fall or early spring may result in earlier planting dates and more consistent control of weed species that sometimes survive burndown applications if delayed until later in the spring. However, in some instances winter annual weed removal has been shown to increase the number of herbicide applications needed in the growing season to control species with extended germination periods such as giant ragweed and common waterhemp. Research was conducted in Illinois and Indiana during the 2005 and 2006 growing seasons to determine what effect winter annual weed removal timing has on giant ragweed and common waterhemp weed growth and management in soybean. Treatments consisted of four winter annual removal strategies: 1) no control of winter annuals in the fall or spring, 2) control of winter annuals in 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 applied at 840g ae/ha.

There were no differences in giant ragweed density at initial emergence. From one week after initial giant ragweed emergence until planting the fall only removal strategy generally resulted in a greater density of giant ragweed, compared with other removal strategies. Biomass of giant ragweed at planting in the fall only removal strategy was four times greater than any other removal strategy. The increased biomass of giant ragweed in the fall only removal strategy can be attributed to the increased density and a more advanced plant growth stage. Control of giant ragweed was lowest in the fall only removal strategy at 14, 28, and 56 days after planting. Emergence of common waterhemp occurred earlier in the fall and spring removal strategy and the overall density was generally greater following this removal strategy. Biomass of common waterhemp at planting was greatest in the fall and spring removal strategy and least when winter annual weeds were not removed. Minimal differences were observed for control of common waterhemp after planting. Soybean yield was not affected by removal strategy. Growers interested in earlier removal of winter annual weeds should consider the implications for emergence and control of certain summer annual weed species.