

**GIANT RAGWEED EMERGENCE AND DEVELOPMENT UNDER DIFFERENT CROPPING SYSTEMS.** Kurt D. Maertens, Christy L. Sprague, and Loyd M. Wax, Graduate Research Assistant, Assistant Professor, and Professor, University of Illinois, and USDA-ARS, Urbana, IL 61801.

In 2001, a field experiment was conducted at the University of Illinois Northern Illinois Agronomy Research Center in DeKalb. The objectives of this study were to: 1) evaluate giant ragweed emergence under three cropping systems, and 2) monitor growth and seed production of selected giant ragweed plants in these cropping systems. The study area was selected due to its natural heavy infestations of giant ragweed. The experiment was set up as a randomized complete block design with four replications of 6.1 m by 9.1 m plots. The cropping systems were soybeans, and corn planted in 76.2 cm rows, and no crop. Giant ragweed emergence was monitored weekly in two 1.0 m<sup>2</sup> fixed quadrats from April 10 through mid-July. After giant ragweed emergence, plots were kept weed-free, except for one plant per plot every two weeks to monitor growth and seed production. Giant ragweed emergence patterns were similar among the three cropping systems. Peak emergence occurred in the first two weeks and accounted for 50% of the total plants. However, giant ragweed emergence continued into July. Different cropping systems did not significantly affect the rate of giant ragweed emergence. Emergence time and cropping system did have an effect on giant ragweed's ability to compete. Competition with corn greatly suppressed dry weight and seed production of later emerging giant ragweed plants. Giant ragweed plants with no competition produced significantly more dry matter than plants grown in soybeans and corn. Emergence time had a significant affect on giant ragweed biomass for all three cropping systems. However, emergence time did not have a significant affect on seed production when grown in soybeans. Collectively, this research shows that different cropping systems do not affect the rate of giant ragweed emergence, but have an affect on growth and seed production.