

VARIABILITY IN WEEDINESS TRAITS OF COMMON COCKLEBUR. Mark R. Jeschke, James J. Wassom, and Patrick J. Tranel, Graduate Research Assistant, Postdoctoral Research Associate, and Assistant Professor, Department of Crop Sciences, Urbana, IL 61801.

Two studies were conducted to determine variability in weediness traits among accessions of common cocklebur collected from several sites across the United States. The first study compared the competitiveness of seven common cocklebur accessions by measuring their ability to reduce yield of soybean. Common cocklebur seedlings were started in a greenhouse and then transplanted to the field where they were planted at one meter intervals between 30 inch rows of soybean. In addition to non-destructive measurements taken throughout the growing season, measurements were taken on aboveground biomass of common cocklebur and soybean yield at the end of the season. The study was replicated over three years. Average soybean yield reductions for all seven accessions were 48%, 0%, and 20% in years one through three, respectively. Yield reduction rankings among accessions were consistent between the first and third year and showed a significant difference in yield reduction capability among common cocklebur accessions. Averaged over these two years, soybean yield reduction ranged from 25% to 42% among accessions.

The second study compared germination rates of several common cocklebur accessions. Field germination studies were conducted over the course of three years. Eighty burs of each of several accessions were planted in the fall and germinations counts were begun the following spring. Counts were taken twice a week and seedlings were removed as they were counted. Results showed major differences in germination rates among accessions, with first season germination ranging from 3% to 75%. Germination rates for accessions collected in the same state did not necessarily show a tendency to be similar. In addition to the field study, germination tests were conducted in a lab incubator.