

EMERGENCE DATE AFFECTS GROWTH AND FECUNDITY OF REDROOT PIGWEED. Ebandro Uscanga-Mortera, Frank Forcella, and Jeff Gunsolus, Graduate Research Assistant, Research Agronomist, and Professor, Department of Agronomy and Plant Genetics, University of Minnesota, St. Paul 55108; USDA-ARS, Morris, MN 56267; and CONACyT and Colegio de Postgraduados, Mexico.

New cropping systems such as minimum tillage coupled with the use of Roundup-Ready cultivars, has created a favorable environment for success of redroot pigweed (*Amaranthus retroflexus*). This species sometimes escapes control because of delayed seedling emergence. Our objectives were to determine (a) the effect of simulated emergence date (transplanting date) on seed production of redroot pigweed that potentially could escape control under the Roundup-Ready system, and (b) the effect of soybean and corn competition on the growth and seed production of redroot pigweed “emerging” at different times. Seedlings emerging in greenhouse conditions were placed both outside (monoculture) and inside of soybean and corn plots on June 4<sup>th</sup>, and 18<sup>th</sup>, July 2<sup>nd</sup> and 16<sup>th</sup> in both 2001 and 2002 in western Minnesota. Seedlings were placed in the middle two crop rows (76 cm wide), spaced 25 cm apart, and monitored periodically for several gross morphological characteristics that might be associated with fecundity. Plant dry weight and seed production was determined at the end of the growing season. Seed production of redroot pigweed was not affected significantly by emergence date for plants in monoculture, but it was affected significantly by emergence date for plants growing in association with crops. Plants emerging late produced fewer seeds than plants emerging early. Redroot pigweed plants growing in association with either soybean or corn produced almost no seeds if they emerged >28 days after crop emergence. However, for plants emerging 0 through 14 days after the crop, those growing in soybean produced about twice as many seeds as those growing in corn.