

Late-Season Common Waterhemp Interference in Corn. Lawrence E. Steckel* and Christy L. Sprague, Graduate Research Assistant and Assistant Professor, Crop Sciences Department, University of Illinois, Urbana, IL 61801.

Common waterhemp is an annual weed species that has become a major problem in Illinois row crops. This weed species has been found to reduce yield in soybean and grain sorghum. However, little research has been conducted on how competitive common waterhemp is in corn. In 2000, 2001 and 2002 a study was conducted to determine the competitive ability of common waterhemp in corn at Urbana, Illinois. The objective of this experiment was to determine the competitive ability of common waterhemp that emerges after the corn crop. The study evaluated common waterhemp interference after corn stages V4, V6, V8, V10, V12, V14, and season-long. Corn plots were kept weed-free with glyphosate at 841 gm a.e./ha until the designated corn growth stage. At that time common waterhemp seeds were sown and allowed to emerge. Common waterhemp densities averaged 80 plants/m² in each year of the study. Photosynthetic active radiation (PAR) was measured 3 times in the middle 2 rows at each corn stage listed above, as well as VT. In addition to PAR, common waterhemp biomass per square meter and seed production per female plant was measured. Corn grain yield was also collected in the fall. The environment each year had a significant impact on the interference potential of common waterhemp. Common waterhemp regardless of emergence time did not affect corn grain yield in 2000. Common waterhemp that emerged at the V4 and V6 corn stages reduced yield in 2001 and 2002 compared with the weed-free control. Common waterhemp that emerged at the V4 and V6 corn stages also developed the most biomass (> 36g/m²). Common waterhemp that emerged from the V8 to V14 corn stages produced less than one gram/m² of biomass. In 2000 the PAR measured throughout the growing season for any of the interference treatments compared with the weed-free control was not different. However, in 2001 and 2002 common waterhemp that was allowed to compete after the V4 and V6 corn stages allowed less PAR to reach the soil surface compared with the weed-free control.