

EFFECT OF GIANT RAGWEED INTERFERENCE ON SWEET CORN YIELD AND QUALITY. Martin M. Williams II and John B. Masiunas, Ecologist, Invasive Weed Management Research, United States Department of Agriculture – Agricultural Research Service, Urbana, IL 61801 and Associate Professor, Department of Natural Resources and Environmental Sciences, University of Illinois, Urbana, IL 61801.

The North Central Region produces approximately one-half of the domestic sweet corn grown for processing with generally heavy reliance on atrazine for weed control. A premise to the development of modern weed management systems is a quantitative understanding of the impact of weeds on the crop, however, this fundamental knowledge is lacking for sweet corn. The objectives were to quantify the effect of giant ragweed density on yield and identify processing quality traits affected by giant ragweed interference. At Dekalb and Urbana, IL in 2004, giant ragweed was established in sweet corn 'GH0937' at 0, 0.11, 0.32, 0.65, and 1.29 plants m⁻². Ears equal to or greater than 4.4 cm in maximum diameter were hand-picked and weighed approximately 21 days after pollination. Five ears per plot were randomly collected and analyzed for several processing quality traits. Losses in sweet corn yield and quality traits were related to giant ragweed density using a rectangular hyperbola equation. Compared to previous research in field corn, sweet corn yield losses due to giant ragweed interference were higher. Several processing quality traits, as measured by 5-ear samples, were affected by giant ragweed interference, including green ear (cob, kernels, silks, plus husks) mass, husked ear (cob plus kernels) mass, ear length, filled ear length, ear width at midpoint, number of kernels per row, kernel depth, and kernel mass. Kernel row number, moisture content, and total sugar content were unaffected. Depending upon the intended market, sweet corn weed management systems may need to consider the impact of weed populations on specific quality traits as opposed to green ear mass alone.