

GLYPHOSATE RESISTANCE: POLLEN MOVEMENT WITHIN A COMMON RAGWEED
(*Ambrosia artemisiifolia* L.) POPULATION AND HERBICIDE RELEASE FROM COMMON
WATERHEMP (*Amaranthus rudis* SAUER) PLANTS

Johnathan P. Dierking

Dr. Reid J. Smeda, Thesis Supervisor

ABSTRACT

Common ragweed and Common waterhemp are native, summer annual weeds distributed widely throughout the United States. Both weed species have developed resistance to the broad-spectrum herbicide glyphosate. Research was conducted to determine the movement of glyphosate resistance through pollen within a population of common ragweed and evaluate the release of glyphosate from glyphosate-resistant and -susceptible common waterhemp.

Results revealed that glyphosate-resistance could move throughout a susceptible common ragweed population up to 91 meters away from a source of resistant pollen. The frequency of resistant progeny from susceptible plants was greatest close to resistant source plants, with 48 percent of the groups at 1 meter away producing resistant progeny. Glyphosate resistance is likely to spread to adjacent areas via pollen, which is an important dispersal mechanism common ragweed. Greenhouse studies determined the survival of glyphosate-resistant versus -susceptible waterhemp was not based upon exudation of glyphosate from roots.