

KOCHIA DIFFERENTIAL RESPONSE TO GLYPHOSATE. Jason Waite, Kassim Al-Khatib, Graduate Research Assistant, Professor, Department of Agronomy, Kansas State University, Manhattan, KS 66506.

Kochia is becoming a more troublesome weed in cropping systems. There are several management strategies for kochia which include tillage, chemical burndown as well as postemergence selective herbicide treatments. With the widespread use of glyphosate resistant crops there has been an increased use of glyphosate to control kochia in resistant crops that led to less susceptible populations of kochia. A greenhouse study was conducted to evaluate the differential response of 10 kochia populations to glyphosate. Plants were treated when average kochia height was 15 cm. Injury was rated at 7, 14 and 21 days after treatment (DAT). Kochia height and biomass were taken 21 DAT. Injury ratings were based on 0 = no injury and 100 = plant mortality. Glyphosate rates were 1/16, 1/8, 1/4, 1/2, 1, 1 and 1/2, 2, 4 and 6 times a use rate of 870 g ae/ha. Glyphosate rate required to cause 50% injury was calculated (GR_{50}). Out of 10 kochia populations, 3 populations were less sensitive to glyphosate with a GR_{50} range from 2.47 to 1.52. In addition, three of the populations showed intermediate susceptibility to glyphosate with a GR_{50} range from 0.79 to 0.75. Furthermore, four kochia populations were susceptible to glyphosate with a GR_{50} range from 0.69-0.54. This study clearly illustrates that differential kochia response to glyphosate exists between populations.