

DOSE-RESPONSE OF 2,4-D AND GLUFOSINATE ON ABUTILON THEOPHRASTI, IPOMOEA SPECIES AND CHENOPODIUM ALBUM. Chad B Brabham, Andy Robinson, and Bill Johnson, Graduate Research Assistants and Associate Professor, Department of Botany and Plant Pathology, Purdue University, West Lafayette, IN 47907.

A dose response experiment was conducted to evaluate the efficacy of glufosinate and 2,4-D amine on velvetleaf, morningglories, pigweeds and common lambsquarters. The experimental design was a randomized complete block with a factorial arrangement of treatments. There were seven rates of each herbicide with glufosinate at 0, 0.111, 0.222, 0.444, 0.89, 1.77, 3.55 lbs of ai/A and 2,4-D amine at 0, 0.125, 0.25, 0.5, 1, 2, and 3 lbs of ae/A. A planter was used to plant rows of velvetleaf (*Abutilon theophrasti*), morningglory species (*Ipomoea spp.*) and pigweed species (*Amaranthus spp.*). Plant populations were at 28, 18, and 30 plants per foot, respectively. The experiment site also contained a natural population of common lambsquarters (*Chenopodium album*). Treatments were applied when weeds were 8 to 12 inches in length. Visual control ratings were recorded at 14 and 28 days after treatment (DAT) and fresh and dry weights were recorded 28 DAT. GR 50's and GR 90's for each weed species was determined from regression analysis. Velvetleaf, morningglory species, common lambsquarters and amaranthus species had GR 50s' at 0.133, 0.018, 0.20, and 0.21 lbs of ai/A and GR 90s' at 0.84, 0.34, 0.40, and 1 lbs of ai/A to glufosinate, respectively. The GR 50s' and GR 90s' in response to 2,4-D amine for velvetleaf, common lambsquarters and amaranthus species were 0.48 and 2.64, 1.53 and 9.99, and 0.097 and 0.060 lbs of ae/A, respectively. Tank mixtures of glufosinate at 0.222 lbs of ai/A and 2,4-D amine at 0.125 lbs of ae/A or any other mixtures with higher rates resulted in at least 90% control of the weeds in this study.