

**BROADLEAF WEED CONTROL WITH GLUFOSINATE AS
INFLUENCED BY INSECTICIDE CO-APPLICATION**

M.S. Mathews, D.K. Miller, and E. Burris

LSU AgCenter

St. Joseph, LA

B.R. Leonard

LSU AgCenter, LA

Winnsboro, LA

R.G. Downer

LSU AgCenter

Baton Rouge, LA

Abstract

Research was conducted in 2003 at the Northeast Research Station in St. Joseph, La to evaluate broadleaf weed control with Liberty (glufosinate) as influenced by co-application with various insecticides. Hemp sesbania (*Sesbania exaltata*), redroot pigweed (*Amaranthus retroflexus*), pitted morningglory (*Ipomoea lacunosa*), prickly sida (*Sida spinosa*), and sicklepod (*Senna obtusifolia*) seed were planted outdoors in trade gallon nursery containers in a peat moss/silt loam soil mix (1:1) and thinned to one plant per pot following germination. Liberty was applied at the 3 to 4 or 7 to 8 leaf growth stage alone at 0.418 lb ai/A or co-applied with the following insecticides: Bidrin (dicotophos) at 0.4 lb ai/A, Orthene (acephate) at 0.75 lb ai/A, Centric (thiamethoxam) at 0.047 lb ai/A, Intruder (acetamiprid) at 0.03 lb ai/A, Trimax (imidacloprid) at 0.047 lb ai/A, Capture (bifenthrin) at 0.06 lb ai/A, Karate Z (lambda-cyhalothrin) at 0.04 lb ai/A, Baythroid (cyfluthrin) at 0.04 lb ai/A, Steward (indoxacarb) at 0.11 lb ai/A, Tracer (spinosad) at 0.075 lb ai/A, Denim (emamectin benzoate) at 0.015 lb ai/A, or Intrepid (methoxyfenozide) at 0.125 lb ai/A. A nontreated control was included for comparison. Applications were made using a CO₂ back-pack sprayer at 15 GPA. Visual weed control assessments were conducted 7 and 14 days after application (DAT). Above ground fresh weight was also recorded at the later rating interval. Fresh weight determinations were converted to a percent reduction from nontreated control plants. Pairwise comparisons with Liberty alone and each Liberty/insecticide co-application were conducted at the 0.05 level of significance. Nontreated control plants were used for visual rating reference and fresh weight reduction calculations, but were not included in the statistical analysis.

Only growth stage effect was significant with respect to parameters measured for hemp sesbania and redroot pigweed (control 7 DAT and fresh weight reduction), prickly sida (control 14 DAT and fresh weight reduction), and pitted morningglory and sicklepod (all parameters). Averaged across all treatments, control and fresh weight reduction for these parameters was greater for application at the 3 to 4 leaf stage than at the 7 to 8 leaf stage. Treatment and growth stage effects were not noted for hemp sesbania and redroot pigweed control 14 DAT. A significant treatment by growth stage interaction was noted for prickly sida control 7 DAT. Insecticide co-application did not reduce control with Liberty at either growth stage. Insecticides Bidrin, Tracer, and Intrepid did, however, increase prickly sida control 7 DAT with Liberty applied at the 7 to 8 leaf growth stage (79 vs. 65%). When applied at the earlier timing, Liberty alone provided 95, 100, 99, 99, and 94% control of hemp sesbania, redroot pigweed, pitted morningglory, prickly sida, and sicklepod, respectively, 7 DAT. At 14 DAT, control was 100% for all weeds treated at the 3 to 4 leaf timing. At the later timing, control of these respective weeds with Liberty alone 7 DAT was 80, 83, 76, 65, and 63%, while at 14 DAT control was 100, 100, 91, 71, and 76%.

In conclusion, Liberty provided greater control of the broadleaf weeds evaluated in this study when applied at the 3 to 4 leaf growth stage compared with 7 to 8 leaf application. Also, insecticides evaluated in this study did not reduce visual control or fresh weight reduction of hemp sesbania, redroot pigweed, pitted morningglory, prickly sida, or sicklepod when co-applied with Liberty.