
...promoting the natural heritage of North Texas...



Lewisville Lake Environmental Learning Area

201 E. Jones St. • Lewisville, TX 75057
940.565.2694 • Fax: 940.565.4297
llela@unt.edu • www.ias.unt.edu/llela

Johnsongrass Control in North Texas Tallgrass Prairie with Glyphosate and Glufosinate

***LLELA Research Note 7
June 2003***

Johnsongrass Control in North Texas Tallgrass Prairie with Glyphosate and Glufosinate

by *Sheralyn Holcomb, Karl Hoffman, and Rick Mosman*
University of North Texas

Invasive exotic species are outcompeting native plants at alarming rates in many ecosystems in the United States. We set up a pilot study to evaluate the relative effectiveness of two popular herbicides, glyphosate (Roundup) and glufosinate (Finale), to determine if they show promise in controlling Johnsongrass (*Sorghum halepense*) in a tallgrass prairie restoration project at the Lewisville Lake Environmental Learning Area (LLELA). Although many studies of herbicides on this aggressive grass species have been conducted in an agricultural context, very little information exists to determine whether they are appropriate as a restoration tool.

We marked fifteen 1-m² plots for five replicates for each of three treatments: control, glyphosate, and glufosinate. Prior to treatment, we sampled shoot counts and percent cover for Johnsongrass and any other species in these plots. The herbicides were applied with a Weed Wipe wick applicator at 30 cm. Wick application of herbicides is more environmentally friendly than most application methods because it touches only the tallest plants—in this case, Johnsongrass. Few non-target species in our study were damaged using this application method. Phytotoxicity and percent effectiveness for the herbicides were assessed at one week post application, and changes in percent cover and shoot counts were assessed at one and five weeks post application.

Results showed significant phytotoxicity of Johnsongrass with both herbicides. Glyphosate appeared (visually) to have more complete kills, which was also borne out in lower percent cover for Johnsongrass in glyphosate plots. The lower cost, dilution rate, and toxicity (based on LC50 tests) associated with glyphosate make it a much better candidate for further studies of herbicides on Johnsongrass control.