

**STATUS AND DISTRIBUTION OF HERBICIDE RESISTANCE IN ARKANSAS**

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**Abstract**

Horseweed (*Conyza canadensis*), common ragweed (*Ambrosia artemisiifolia*), and Palmer amaranth (*Amaranthus palmeri*) are all known to be glyphosate-resistant in Arkansas. Palmer amaranth is the most common and troubling weed in Arkansas cotton fields. Glyphosate used in combination with Roundup Ready technology effectively controlled Palmer amaranth for several years following introduction. Glyphosate-tolerant Palmer amaranth has been recorded in 13 counties in Arkansas. The objective of this study was to evaluate the distribution of glyphosate tolerance in Arkansas.

The first confirmed glyphosate resistant Palmer amaranth in Arkansas was in 2006 with offspring from plants escaping glyphosate application in 2005. It was not known if this was a single event or if other fields throughout the state also had resistant biotypes. In October 2006, 120 Palmer amaranth samples were taken from 41 locations in 17 counties in Arkansas. The samples were then dried and thrashed. Samples were established in the greenhouse in RCBD with six replications. All samples were subjected to two treatments 0.25 and 0.5 lb ae/A of glyphosate at 6 lf. Plants were rated until 28 days after application to insure complete death.

Glyphosate-tolerance was recorded in 17 locations in 13 counties. Eleven locations survived 0.5 lb ae/A, while six survived 0.25 lb ae/A of glyphosate. Glyphosate-tolerant Palmer amaranth proved to be present in 13 of the 17 counties screened. In October of 2007, 236 Palmer amaranth samples were taken from 51 locations in 13 counties in Arkansas. These samples have been dried and thrashed and will be tested in January 2008.