

# **DEMONSTRATING USE OF HIGH-RESIDUE COVER CROP CONSERVATION TILLAGE SYSTEMS TO CONTROL GLYPHOSATE-RESISTANT PALMER AMARANTH**

A.J. Price<sup>\*1</sup>, C.D. Monks<sup>2</sup>, J.A. Kelton<sup>2</sup>, M.G. Patterson<sup>2</sup>, K.S. Balkcom<sup>1</sup>, A.S. Culpepper<sup>3</sup>, C.L. Main<sup>4</sup>, L.E. Steckel<sup>4</sup>, M.W. Marshall<sup>5</sup>, R.L. Nichols<sup>6</sup>

<sup>1</sup>USDA-ARS NSDL, Auburn, AL, <sup>2</sup>Auburn University, <sup>3</sup>University of Georgia, <sup>4</sup>University of Tennessee, <sup>5</sup>Clemson University, <sup>6</sup>Cotton Inc.

**[\\*Andrew.Price@ars.usda.gov](mailto:Andrew.Price@ars.usda.gov)**

## **SUMMARY**

Adoption rates of transgenic cotton have been on the incline since its introduction in 1997 to make up almost 90% of total cotton production in the United States (Shaw et al. 2009). Reduced-tillage practices, with their even lower production costs, have seen a concomitant increase across the southern region of the US. However, the limited number of herbicide options and the loss of weed control through tillage, paired with the effectiveness of glyphosate, have resulted in a heavy dependence of a single herbicide mode of action in these systems (Green et al. 2008; Givens et al. 2009; Kruger et al. 2009). At present, cases of glyphosate-resistant Palmer amaranth have been documented throughout the Southeast including: Georgia, Arkansas, Tennessee, Alabama, Mississippi, North Carolina, and South Carolina (see figure 1). With this development, the future of conservation tillage remains uncertain.