EVALUATION AND COMPARISON OF PREEMERGENCE HERBICIDES FOR CONTROL OF GLYPHOSATE RESISTANT PALMER AMARANTH (Amaranthus palmeri) W.D. Crow

L. E. Steckel G. B. Montgomery M. S. Wiggins University of Tennessee Jackson, TN

<u>Abstract</u>

Palmer amaranth (Amaranthus *palmeri*) is one of the most problematic and competitive weed species in cotton production in the Southern region of the United States. A field study was conducted in 2014 at the West Tennessee Research and Education Center in Jackson, TN using small plot research to compare preemergence herbicides used in cotton production systems for the control of glyphosate resistant (GR) Palmer amaranth. Herbicides included pyroxasulfone plus carfentrazone (at two rates), flumeturon, flumeturon plus prometryn, fomesafen plus fluridone, norflurazone, fomesafen alone, clomazone, and fluridone plus acetochlor. Fomesafen plus fluridone provided the most complete control of GR Palmer amaranth at 94% control 28 days after application (DAA). Pyroxasulfone plus carfentrazone, fluridone plus warrant, and norflurazone provided 82 to 84% control, while all other treatments provided <62% control of GR Palmer amaranth 28 DAA. The only injury evident 28 DAA, was observed in plots treated with herbicides containing pyroxasulfone plus carfentrazone. The low concentration treatment containing 60 plus 4 g ai ha⁻¹ injured cotton 4%, while a higher concentration containing 125 plus 9 g ai ha⁻¹ injured cotton 20%. Cotton yield was not adversely affected by any herbicide treatment.