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EVALUATION OF FLURIDONE AND PYROXASULFONE FOR RESIDUAL CONTROL OF PALMER AMARANTH IN COTTON COMPARED TO CURRENTLY USED COMMERICAL HERBICIDES W.D. Crow L.E. Steckel M.S. Wiggins R.M. Hayes The University of Tennessee Jackson, TN

Abstract

Palmer amaranth (*Amaranthus palmeri*) is one of the most problematic weed species in cotton systems in the Mid-South. The objective of this study was to evaluate fluridone and pyroxasulfone as a potential alternative control method for glyphosate-resistant (GR) Palmer amaranth. Field studies were conducted in Jackson, TN in 2013 to compare fluridone and pyroxasulfone, applied preemergence to other commercial herbicide standards for weed control and crop injury in cotton. Treatments containing fluridone alone and tankmixed caused more crop injury than the standards. Fluridone alone at a rate of 0.35 kg ai ha⁻¹; fluridone plus pyroxasulfone; pyroxasulfone alone at 28 d still had >12% crop injury. A reduction in stand was seen after 15 d. Early-season Palmer amaranth control was similar for all treatments. Fluridone alone at a rate of 0.35 kg ai ha⁻¹; fluridone at a rate of 0.22 kg ai ha⁻¹ tankmixed with flumeturon or fomesafen or pyroxasulfone all provided >95 % weed control after 28d. The lower rate of fluridone applied alone was similar to S-metolachlor and pyroxasulfone providing 80 to 90% weed control. Fluridone would provide an alternative mechanism of action for Palmer amaranth control aiding in resistance management. Future studies will be conducted to determine the best fit for fluridone and pyroxasulfone in Mid-South cotton systems.