# COMPARISON OF EARLY-SEASON WEED CONTROL PROGRAMS IN XTENDFLEX™ COTTON

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## Abstract

Palmer amaranth (*Amaranthus palmeri*) is one of the most problematic and troublesome weeds in Midsouth cotton. Resistance to many herbicide modes of actions (MOA) poses the need for further research to find ways to effectively control Palmer amaranth. XtendFlex cotton is resistant to dicamba, glufosinate, and glyphosate. These resistant traits allow growers to broaden their postemergence herbicide options to combat herbicide resistance. In 2018, a field experiment was conducted at the Lon Mann Cotton Research Station near Marianna, AR. The trial was a two-factor factorial with the first factor being preemergence herbicide treatment and the second being postemergence herbicide treatment. The trial was implemented as a randomized complete block design with four replications. The objective of the trial was to compare sequential glufosinate applications in cotton to programs having dicamba followed by glufosinate. The preemergence application timing included combinations of these herbicides: Gramoxone (paraquat), Caparol (prometryn), and Brake (fluridone). The postemergence application timing included these combinations of herbicides: Xtendimax (dicamba), Dual Magnum (*S*-metolachlor), Sequence (glyphosate + *S*-metolachlor), and Liberty (glufosinate). At two weeks after the preemergence application, >95% Palmer amaranth control was observed for Brake-containing treatments. At three weeks after the early postemergence application, >98% control was observed across all treatments and they did not statistically separate. No more than 9% crop injury was observed across all treatments. With these findings, an effective preemergence herbicide program followed by a timely early postemergence herbicide program should provide season-long control of Palmer amaranth.