PERFORMANCE OF *S*-METOLACHLOR & DICAMBA PRE-MIX IN BOLLGARD II XTENDFLEX COTTON

H.D. Bowman
J.K. Norsworthy
M.H. Houston
Department of Crop, Soil, and Environmental Sciences
University of Arkansas
Fayetteville, AR
T. Barber
University of Arkansas Research and Extension Service
Lonoke, AR

Abstract

With the evolution of glyphosate resistance, Palmer amaranth became the most troublesome weed of cotton in the U.S. In 2013, a survey of crop consultants in the Midsouth listed the weed as the most problematic in cotton. Palmer amaranth causes yield loss in cotton by competing for light, moisture, and soil nutrients. With commercialization of Xtendflex cotton, growers have in-crop options available to control glyphosate-resistant Palmer amaranth. A study was conducted in 2017 at the Lon Mann Cotton Research Station near Marianna, AR to determine the level of control and length of residual activity of dicamba alone and pre-mixed with *S*-metolachlor on Palmer amaranth. The test was designed as a randomized complete block with six POST herbicide treatments applied to 2- to 4-inch weeds. Dicamba was applied alone at (0.5 lb. ae/A) or in a pre-mix with *S*-metolachlor at (0.94 lb. ai/A). A tank-mix dicamba + glyphosate (1.0 lb. ae/A), the dicamba and *S*-metolachlor pre-mix + glyphosate (1.0 lb. ae/A), or the dicamba and *S*-metolachlor pre-mix + glufosinate (0.53 lb. ai/A) was also applied and compared back to a standard of glyphosate (1.0 lb. ae/A) + *S*-metolachlor (0.94 lb. ai/A). A visual weed control assessment was taken 2 weeks after POST application and no significant differences were seen in the level of control with dicamba alone from the dicamba plus *S*-metolachlor pre-mix. All treatments provided 93% or greater control, with the exception of the standard, which only provided 10% control of Palmer amaranth. Five weeks after the POST application, another visual weed control assessment was taken. At this time, any treatment containing the dicamba plus *S*-metolachlor pre-mix provided 88% or greater control, which was significantly higher than the control level of Palmer amaranth observed with dicamba alone, which only provided 66% control. No visible injury was observed with any application, demonstrating that these treatments could offer alternatives for weed control in cotton.