EVALUATION OF ENLIST DUO® WEED CONTROL SYSTEMS IN COTTON (*GOSSYPIUM HIRSUTUM*)

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Abstract

Growers in the Mississippi Delta region continually battle populations of Palmer amaranth (*Amaranthus palmeri*) documented to be resistant to two herbicide modes of action. Another mode of action is needed to assist in Palmer amaranth control and the Enlist™ herbicide system allows for a third mode of action to be POST applied. A study was conducted in 2019 to evaluate Palmer amaranth control utilizing various herbicide systems. This study was conducted near Dundee, MS using a randomized complete block design with four replications. Plots consisted of four 97-cm rows on raised beds (3.9 m wide by 6.1 m long). PhytoGen® PHY 340 W3FE was seeded at 111,000 seed ha^{-1} on June 20. Eight herbicide treatments consisted of combinations of herbicides such as 2,4-D choline, fluometuron, glufosinate, glyphosate, and S-metolachlor and three application timings A) PRE B) POST 23 DAA and C) POST 14 DAB. Data were subjected to analysis of variance using the PROC GLM procedure in SAS v 9.4. Means were separated using Fisher's Protected LSD at $\alpha = 0.05$. Twenty-three days after PRE application, fluometuron provided 85-90% Palmer amaranth control. Fourteen days after B and seven days after C application, treatments that received multiple herbicide modes of action resulted in 80-95% control ($p < 0.01$). Overall, sequential POST applications of containing at least two modes of action provided excellent Palmer amaranth control. In this study, herbicide treatment did not impact seedcotton yield ($p = 0.83$). The Enlist™ herbicide system provides excellent Palmer amaranth control.