

ENLIST™ WEED CONTROL SYSTEM FOR COTTON – A MULTI-YEAR RESEARCH SUMMARY**D. H. Perry, B. Braxton****R. Haygood****R. Huckaba****M. Lovelace****J.S. Richburg****M. Schultz****G.D. Thompson****R. Viator, L. Walton****Dow****Lubbock, TX****Abstract**

The Enlist Weed Control System by Dow AgroSciences is a new weed control tool incorporating unique herbicide tolerance traits, a new herbicide featuring a 2,4-D choline formulation and the Enlist Ahead management resource. The primary objective of this multi-year research was to collect key weed efficacy data on glyphosate-resistant biotypes such as Palmer amaranth (*Amaranthus palmeri*) and marestail (*Conyza Canadensis*), as well as other economically-important weed species. Since 2007, Dow AgroSciences and university researchers have conducted 218 trials throughout the cotton-growing regions of the southern U.S. evaluating Enlist Duo™ herbicide or 2,4-D choline within weed control programs for controlling herbicide-resistant and -susceptible weeds in Enlist cotton. Weed efficacy research ranged from standard characterization trials to full-season weed control systems. Characterization trials evaluated Enlist Duo and other 2,4-D choline-based treatments compared to other commercially-available herbicides. System trials consisted of a foundation preemergence herbicide followed by sequential postemergence applications of Enlist Duo, 2,4-D + glufosinate and glufosinate applied alone and in tank mixture with other herbicide modes of action (MOA). All programs containing Enlist Duo or 2,4-D + glufosinate controlled glyphosate-resistant Palmer amaranth >90%. Programs containing Enlist Duo or 2,4-D + glufosinate provided greater levels of glyphosate-resistant Palmer amaranth control than glufosinate-only programs and also incorporate two additional MOA. While sequential applications of glufosinate provided >85% Palmer amaranth control, these single MOA programs are not sustainable. Dow AgroSciences internal and external results demonstrate a full-season, Enlist-enabled approach utilizing multiple MOAs through soil residuals and postemergence applications will provide growers an additional tool to achieve greater control of economically-important and herbicide-resistant weed biotypes.

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