

# Herbicide Programs for Managing Glyphosate- and ALS-Resistant Palmer Amaranth in Mississippi Cotton

Jason A. Bond, Darrin M. Dodds, Thomas W. Eubank, and Dan B. Reynolds

Herbicide Programs to Manage Resistant Palmer Amaranth in Cotton. <sup>1</sup>					
Cotton System <sup>2</sup>	Preplant <sup>3,4</sup>	Preemergence <sup>3</sup>	Postemergence over-the-top <sup>5</sup>	Postdirected <sup>8</sup>	Layby <sup>9</sup>
Roundup Ready Flex	Valor, Reflex, or Treflan	Cotoran or Prowl H2O	Glyphosate plus Dual Magnum <sup>6</sup> or Sequence <sup>6</sup>	Caparol or Cotton Pro plus MSMA	Direx, Valor, or Reflex plus MSMA
LibertyLink	Valor, Reflex, or Treflan	Cotoran or Prowl H2O	Ignite <sup>7</sup> plus Dual Magnum followed by Ignite	Caparol or Cotton Pro plus MSMA	Direx, Valor, or Reflex plus MSMA

- (1) Glyphosate- and ALS-resistant Palmer amaranth are prevalent across much of Mississippi. This guide is to help aid producers in the management and/or prevention of resistant Palmer amaranth. Intensive scouting is necessary to determine whether control options employed have failed. **Timely applications are critical in controlling escaped Palmer amaranth populations.**
- (2) Rotation of herbicide systems, such as Roundup Ready Flex and Liberty Link, is recommended to help delay the onset of resistance if not currently present, or to manage current resistant populations.
- (3) Soil applications of residual herbicides require incorporation from rainfall or irrigation. The level of glyphosate-resistant Palmer amaranth control and the length of residual will vary with rainfall totals. Residuals, when properly activated by timely rainfall or irrigation, can provide Palmer amaranth control for 2 to 3 weeks, depending on time of year, soil moisture, and weed pressure. Gramoxone Inteon at 2.5 pints per acre plus surfactant should be added to residual herbicides if glyphosate-resistant Palmer amaranth is emerged before application.
- (4) **Control from Valor or Reflex will be compromised if beds are disturbed before planting.** An additional residual herbicide should be applied immediately after planting if a do-all is used for final bed preparation. Preplant applications of Valor at 2 ounces per acre should be made to conventional-tillage cotton at least 30 days before planting. Preplant applications of Reflex to cotton require at least 14 to 21 days plus 0.5 inch of rainfall before planting. Treflan should be mechanically incorporated within 24 hours of application.
- (5) The first postemergence over-the-top application should be made when cotton is in the one- to two-leaf stage.

Bond is an associate research/extension professor and Eubank is an assistant extension/research professor at the Delta Research and Extension Center in Stoneville. Dodds is an assistant extension professor and Reynolds is a professor in the Mississippi State University Department of Plant and Soil Sciences. This document was approved for publication as MAFES Information Sheet 1354 of the Mississippi Agricultural and Forestry Experiment Station. It was published by the MSU Office of Agricultural Communications, a unit of the Division of Agriculture, Forestry, and Veterinary Medicine. Copyright 2011 by Mississippi State University. All rights reserved. This publication may be copied and distributed without alteration for nonprofit educational purposes provided that credit is given to the Mississippi Agricultural and Forestry Experiment Station.



- (6) Glyphosate plus Dual Magnum or Sequence will not control emerged glyphosate-resistant Palmer amaranth but could offer in-season residual control.
- (7) Ignite should be applied when Palmer amaranth plants are 2 to 3 inches tall. **Spray coverage is critical when using contact herbicides such as Ignite. Use spray nozzle (flat fan, twin jet, etc.) that ensure thorough weed coverage. Avoid use of AI (air induction) nozzles with contact herbicides.**
- (8) Postdirected applications should be made after cotton plants are at least 6 inches tall.
- (9) Direx should be applied after cotton is 15 inches tall. Valor should be applied after cotton is 16 inches tall. Reflex should be applied after cotton has 4 inches of bark.



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