

Programs for Managing Herbicide-Resistant Palmer Amaranth in Mississippi Soybean¹



System	Preplant ^{2, 3}	Preemergence ^{3, 5}	Postemergence ^{6, 7}	Salvage ^{7, 8}
Roundup Ready	Authority Elite; Fierce; Envive, Sharpen, Sonic, Surveil, Valor XLT, or Verdict + Group 15 herbicide ⁴	Boundary; Authority MTZ, Canopy, or metribuzin + Group 15 herbicide ⁴	Glyphosate + fomesafen + Group 15 herbicide ⁴	Glyphosate + Cobra or Ultra Blazer
LibertyLink	Authority Elite; Fierce; Envive, Sharpen, Sonic, Surveil, Valor XLT, or Verdict + Group 15 herbicide ⁴	Boundary; Authority MTZ, Canopy, or metribuzin + Group 15 herbicide ⁴	Liberty 280 + fomesafen + Group 15 herbicide ⁴	Liberty 280
Conventional	Authority Elite; Fierce; Envive, Sharpen, Sonic, Surveil, Valor XLT, or Verdict + Group 15 herbicide ⁴	Boundary; Authority MTZ, Canopy, or metribuzin + Group 15 herbicide ⁴	Cobra, fomesafen, or Ultra Blazer + Group 15 herbicide ⁴	Cobra or Ultra Blazer

¹The information given here is for educational purposes only. References to commercial products, trade names, or suppliers are made with the understanding that no endorsement is implied and that no discrimination against other products or suppliers is intended.

²**Preplant applications should be made 14 to 21 days before planting and after final bed preparation in fields with targeted soybean planting date later than April 15. A preemergence application should be made before crop emergence.** Control with residual herbicides will be compromised if beds are disturbed after application.

³**Paraquat at 0.75 lb ai/acre plus surfactant should be mixed with residual herbicides to control Palmer amaranth emerged before application.** The use of full labeled rates of residual herbicides is imperative for herbicide-resistant weed management. Soil applications of residual herbicides require incorporation from rainfall or irrigation, and level of control and length of residual will vary with rainfall totals. When properly incorporated, residual herbicides can control Palmer amaranth for 2 to 3 weeks depending on time of year, soil moisture, and weed pressure.

⁴Herbicides in Group 15 are very-long-chain fatty acid synthesis inhibitors (VLCFAs). Group 15 herbicides recommended for use in Mississippi soybean include metolachlor or S-metolachlor, Warrant, and Zidua. Warrant should be applied when temperatures are warm; colder weather may reduce activity. Herbicide labels should be consulted for seasonal maximum use rates and rotation intervals to other crops.

⁵**For all targeted soybean planting dates, preemergence applications should be made before soybean emergence up to 7 days before planting.** All listed residual herbicides for preemergence application contain metribuzin. Some soybean varieties are susceptible to injury from metribuzin. Manufacturer information should be consulted during variety selection for level of metribuzin tolerance.

⁶**The postemergence application should be made 7 to 21 days after soybean planting with precise timing dictated by efficacy of preplant and/or preemergence treatments, soybean growth rate, and environmental conditions.** Earlier applications should be used if previous treatments were not incorporated or when temperatures are warm and soybean and/or existing weeds are growing rapidly.

⁷Spray coverage is critical for weed control with contact herbicides such as Cobra, fomesafen, Ultra Blazer, and Liberty 280. Applicators should be equipped with nozzles that ensure thorough spray coverage. Nozzles producing coarse droplets should not be used for contact herbicides.

⁸Salvage treatment should target escaped Palmer amaranth not controlled by earlier applications.

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