

**EVALUATION OF LAYBY PRO VERSUS STANDARD LAYBY PROGRAMS FOR PALMER AMARANTH CONTROL IN COTTON**

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**Abstract**

Residual herbicides can reduce the amount of glyphosate or glufosinate applications needed in herbicide programs for glyphosate- or glufosinate-resistant cotton, respectively, and can increase control of glyphosate-resistant and – susceptible weed species including Palmer amaranth. Layby Pro, a broad-spectrum residual herbicide, needs to be tested as a tool for Palmer amaranth management. Field experiments were conducted at Fayetteville, AR, in 2011 to evaluate Palmer amaranth control with Layby Pro in combination with commonly used residual herbicides including Cotoran, Direx, MSMA, and Valor; and to evaluate if Layby Pro treatments cause injury to PhytoGen cotton (resistant to both glyphosate and glufosinate), or effect seedcotton yield. Treatments included layby application of Layby Pro at 2 pt/A plus Direx, MSMA, or Cotoran plus MSMA at 2, 2, or 2 plus 2 pt/A, respectively; Layby Pro at 2 pt/A plus Valor at 2 oz/A; Direx at 2 pt/A plus MSMA at 2 pt/A; Valor at 2 oz/A plus MSMA at 2 pt/A; Ignite 280 at 29 fl oz/A; and a nontreated control. Palmer amaranth control and cotton injury were evaluated at 2 and 3 weeks after treatment (WAT). All herbicide treatments completely controlled Palmer amaranth at 2 WAT. Palmer amaranth control with all Layby Pro and standard residual layby treatments was >97%, however, with non-residual herbicide Ignite 280, was only 88% at 3 WAT. Injury to PhytoGen cotton with all the treatments was <5% at 2 and 3 WAT. All herbicide treatments yielded similar seedcotton (2860 to 3420 lb/A). Because of Palmer amaranth control similar to standard layby herbicides, and no injury to cotton, Layby Pro can be included in the cotton herbicide programs.