WEED MANAGEMENT IN CONVENTIONAL COTTON IN LOUISIANA

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Abstract

In 2012, research was conducted at the LSU AgCenter Dean Lee Research and Extension Center near Alexandria, LA to evaluate weed management in cotton. The experiment evaluated the necessity of Cotoran PRE or no Cotoran PRE, followed by evaluation of significance in the order of Dual Magnum or Staple LX either early-postemergence (EPOST) (2-3 leaf cotton) and mid-postemergence (MPOST)(6-8 leaf cotton) and if use of Direx or Valor co-applied with MSMA at layby was more valuable than the other. Palmer amaranth, browntop millet, hophornbeam copperleaf, entireleaf morningglory, sicklepod, and hemp sesbania control were evaluated just prior to and 28 days after the layby application.

Applying Cotoran PRE increased control of browntop millet, sicklepod, hemp sesbania, and hophornbeam copperleaf just prior to the layby application. In addition, the sequence of Dual Magnum or Staple LX as POST applications were irrelevant where Cotoran was applied PRE. In the absence of Cotoran PRE, control of browntop millet, sicklepod, hemp sesbania, and hophornbeam copperleaf was greater when Dual Magnum was applied EPOST followed by (fb) Staple LX MPOST compared to Staple LX fb Dual Magnum. Cotoran PRE increased control of Palmer amaranth approximately 50% as compared to no Cotoran PRE just prior to and 28 DA layby. Also, Palmer amaranth control was increased when Dual Magnum was applied EPOST followed by Staple LX MPOST prior to and 28 DA the layby application. Entireleaf morningglory was controlled 73 and 84% by no PRE and Cotoran PRE, respectively, just prior to the layby application indicating the utility of Cotoran for entireleaf morningglory control. Browntop millet, sicklepod, hemp sesbania, entireleaf morningglory, and hophornbeam copperleaf control was 98% or greater following the layby application of MSMA plus Valor or MSMA plus Direx, with no differences in layby treatment observed. Lint yield was increased 77% when Cotoran was applied PRE compared to no PRE, which indicates that PRE applications of residual herbicides is essential for weed management and desired cotton yield.

Preliminary data indicates that when Cotoran was applied PRE, control of numerous grass and broadleaf weed species was increased and the sequence of POST herbicides was less crucial. In the absence of Cotoran PRE, control of numerous grass and broadleaf weeds was increased when Dual Magnum was applied EPOST followed by Staple LX MPOST. Regardless of the herbicides applied, Palmer amaranth control did not exceed 75% prior or 28 DA layby application. This data indicates that Palmer amaranth control is difficult with selective herbicides in conventional cotton. Although treatments tested in this experiment did not provide acceptable control of Palmer amaranth alone, use of residual herbicides is crucial to mitigate and/or control glyphosate-resistant Palmer amaranth for preservation of the glyphosate-resistant cotton technology.