EVALUATION OF BRAKE IN COMBINATION WITH COTORAN AND REFLEX IN COTTON

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Abstract

Intense weed pressure and the evolution of herbicide-resistant weeds have driven farmers to utilize extensive weed management programs in Midsouth cotton production. Research has shown that overlapping effective residual herbicides in combination with effective postemergence herbicides decrease weed interference with cotton and depletes the soil seedbank of hard-to-control weeds, such as Palmer amaranth (*Amaranthus palmeri*.) Fluridone, a WSSA group 12 phytoene desaturase (PDS)-inhibitor, has been noted for its effective and extended control of Palmer amaranth in cotton production. Sold and marketed as Brake Herbicide, fluridone is recommended to be applied in combination with another mode of action. The objective of this study was to test the ability of Brake Herbicide, in combination with either fluometuron (Cotoran) or fomesafen (Reflex), to provide longevity of control and allow a grower to potentially skip a late postemergence application or a layby application. This experiment was conducted at the Lon Mann Cotton Research Station near Marianna, Arkansas in the summer of 2018. Dyna-Gro cotton, which was glyphosate resistant, glufosinate tolerant, and dicamba tolerant, was planted into conventionally tilled and raised beds at 55,000 seeds per acre. Treatments of Brake plus Cotoran or Brake plus Reflex were applied preemergence, followed by an early postemergence application, and then either a late post application, layby application, or both. Palmer amaranth control was assessed at 7, 14, 28, 35, 42, and 63 days after the preemergence application (DAPRE). Palmer amaranth control 14 DAPRE was 98% and 97% for both Cotoran- and Reflex-containing treatments, indicating that weed control is comparable between the two mixtures. Treatments that skipped the late postemergence application showed inferior weed control to treatments that contained no skips or skipped the layby application. By 14 days after the layby application timing Palmer amaranth control was 98%, 80%, and 96% for treatments that contained no skips, skipped the late postemergence application, and skipped the layby application, respectively. Yield was statistically the same for all treatments. This research indicates the significance of timely late postemergence applications to control Palmer amaranth. Weeds that go uncontrolled in the late season can cause harvest interference and contribute to the weed seedbank.