COMPARISON OF FLURIDONE-CONTAINING WEED CONTROL PROGRAMS IN COTTON

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Abstract

The active ingredient fluridone has been under evaluation for several years as a preemergence (PRE) herbicide in cotton. Due to evolution of protoporphyrinogen oxidase resistance in Palmer amaranth populations in the Midsouth, a alternative mode of action with activity against Palmer amaranth is needed. Recently, SePRO developed several fluridone-containing premixes including: Brake F2®, fluridone + fomesafen (1.6 + 1.0 (lb ai/gal)); Brake F16®, fluridone + fomesafen (1.2 + 1.5 (lb ai/gal)); and Brake FX®, fluridone + fluometuron (0.6 + 3.0 (lb ai/gal)). These herbicides will offer an alternative mode of action to combat the current resistant issues cotton producers face today. A field study was conducted at the Lon Mann Cotton Research Station in Marianna, AR on a silt-loam soil in 2015 to compare fluridone-containing weed control programs to current weed control programs in cotton. Three application timings: preplant (PPL), preemergence (PRE), and early postemergence (EPOST) were utilized and contained a total of ten treatments including: Brake F16 and Brake F2 applied PPL, Gramoxone, Brake F2, Brake F16, Brake FX, Cotoran + Caparol, Reflex, and Cotoran applied PRE, and finally Liberty + Dual Magnum applied EPOST following the PPL and PRE treatments. Weed control ratings were collected for Palmer amaranth, barnyardgrass, and morningglories (entireleaf and pitted) along with seedcotton yield and crop injury. There were no significant differences detected in the yield or crop injury among treatments. Generally the Brake products provided higher levels of control of barnyardgrass when evaluated at four weeks after the EPOST treatment. However, all treatments exhibited >95% control. Morningglories were controlled similarly by the current weed control programs compared to the fluridone-containing programs with >98% control for all all treatments. Similar results were obtained for Palmer amaranth control, with >95% control for all treatments. The results of this study suggest that the current herbicide options for cotton growers when compared to the fluridone-containing products offer similar, acceptable levels of weed control, however; the Brake products offer a solid foundation for cotton growers looking to integrate a PRE herbicide with an alternative mode of action into their herbicide program.