EVALUATION OF FLURIDONE FOR WEED CONTROL IN COTTON

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Abstract

Successful weed control programs in Arkansas rely on preemergence, soil-residual herbicides, timely applications, adequate moisture for activation, and overlapping soil-residual herbicides to prevent emergence of glyphosate-resistant Palmer amaranth. Currently, fluridone is being evaluated as a potential option for preemergence weed control in cotton. Trials were conducted in 2012 and 2013 near Rohwer, AR in a Hebert silt loam soil to evaluate Palmer amaranth control and cotton response to fluridone applied preemergence. Fluridone was applied preemergence to cotton at rates of 0.1, 0.2, 0.3, 0.4, and 0.5 lbs ai/a. Diuron and fluometuron at rates of 1.0 lb ai/a were included as standard comparison treatments. Adequate moisture in the form of rainfall or overhead irrigation was received for activation after application both years. Control of Palmer amaranth and cotton response was evaluated both years. Minimal cotton injury (<5%) in the form of chlorosis was observed both years. Palmer amaranth control 20 days after application (DAA) in 2012 was at or near 100% from all applications. However, by 25 DAA in 2013 Palmer amaranth control with fluridone at 0.1 and 0.2 lbs ai/a was less than higher rates of fluridone and that of diuron and fluometuron. Control at this time with fluridone at rates of 0.3 lbs ai/a and above were no different and equal to that of diuron and fluometuron. Control of Palmer amaranth 7 weeks after application with fluridone at rates of 0.4 lbs ai/a and above was greater (87-94%) than that provided by fluridone at rates of 0.1 and 0.2 lbs ai/a (70-78%), but equal to control provided by diuron and fluometuron (94-76%) at this time both years. With adequate moisture present for activation, fluridone has the potential to provide extended residual control of Palmer amaranth with minimal injury in cotton.