EFFECTIVENESS OF LIBERTY WITH AND WITHOUT SELECT MAX AS INFLUENCED BY JOHNSONGRASS HEIGHT IN LIBERTY LINK COTTON

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Abstract

Experiments were conducted in 2012 and 2013 at Dean Lee Research and Extension Center in Alexandria, LA, and at University of Arkansas in Fayetteville, AR. These experiments assessed the effectiveness of Liberty with and without Select Max for johnsongrass control as influenced by johnsongrass height in Liberty Link cotton. A three-way factorial arranged in a randomized complete block design with four replications was implemented. Factors were: 1) 6 or 18 inch johnsongrass at initial application; 2) single (initial) or sequential application (initial followed by a 6 inch regrowth application); 3) Liberty with or without Select Max; and a nontreated control. Liberty was applied at 36 and 29 oz/acre for all initial and sequential applications, respectively. Select Max applications were 1 pt/acre at all application timings. Data presented includes johnsongrass control just prior to sequential application, 2 wk after sequential application, 2 wk following typical cotton layby application timing, culm and panicle per m^2 expressed as percent of nontreated just prior to harvest, and cotton lint yield.

Just prior to the sequential application, no difference in control was observed following the initial application to 6- and 18-inch johnsongrass regardless of the herbicide treatment applied. In addition, co-applying Select Max with Liberty did not increase johnsongrass control over Liberty alone, with both providing 74% control just prior to sequential application. Johnsongrass control 2 wk after sequential application and 3 wk after typical layby application timing was greater following sequential herbicide applications. In addition, regardless of herbicide treatment, control was greater following initial application to 18 inch johnsongrass compared to 6 inch johnsongrass at both rating dates that followed the sequential application. Johnsongrass control was increased following the co-application of Liberty and Select Max 3 wk after typical layby application timing. Johnsongrass culm no./m^2 was 46 and 10% of the nontreated control following the single and sequential application, respectively, just prior cotton harvest. Similarly, johnsongrass panicle no./m^2 was 38 and 9% of the nontreated control following the single and sequential application, respectively, just prior to cotton harvest. In addition, co-applying Select Max with Liberty reduced johnsongrass culm no./m^2 as a percent of the nontreated 13% more than treatments not containing Select Max.

Cotton was only harvested in Louisiana in 2012 and in Arkansas in 2013 due to inclement conditions. In Louisiana and Arkansas, cotton lint yield was increased following sequential herbicide applications. Data from Louisiana indicated that cotton yield was 42% greater following the single initial application when applied to 18 inch johnsongrass compared to 6 inch johnsongrass. In contrast, cotton yield in Arkansas were 1700 and 1200 lb/A following the initial herbicide application to 6 and 18 inch johnsongrass, respectively. Research will be repeated to validate results.