EVALUATION OF GLYTOL/LIBERTY LINK COTTON WEED CONTROL PROGRAMS IN LOUISIANA D. K. Miller M. S. Mathews LSU AgCenter Northeast Research Station St. Joseph, LA

Abstract

A field study was conducted in 2013 at the LSU AgCenter Northeast Research Station near St. Joseph, La to evaluate the effectiveness of controlling weeds with Glytol/Liberty Link cotton management systems. Soil type was a silt loam with pH 6.5. Cotton variety FM 1944 Glytol/LLB2 was planted on April 29 and replanted on May 16due to poor stand association with rainfall after planting. All treatments included Cotoran at 2 pt/A at the original planting date. The study was conducted in a randomized complete block design with treatments replicated four times. Treatments were applied via compressed air sprayer at 15 GPA. Treatments evaluated included (1) Roundup Powermax applied at the 1 to 2 leaf cotton growth stage (EPOST, May 31) followed by (fb) Liberty applied at the 4 to 5 leaf cotton growth stage (MPOST, June 12); (2) Liberty EPOST fb Roundup Powermax MPOST; (3) Roundup Powermax EPOST fb Roundup Powermax MPOST; (4) Liberty EPOST fb Liberty MPOST; (5) Roundup Powermax + Liberty EPOST fb Roundup Powermax + Liberty MPOST; (6) Roundup Powermax + Dual Magnum EPOST fb Liberty MPOST; (7) Liberty + Dual Magnum EPOST fb Roundup Powermax MPOST; and (8) Roundup Powermax + Dual Magnum + Liberty EPOST fb Roundup Powermax + Liberty MPOST. Roundup Powermax, Liberty, and Dual Magnum were applied at 22, 29, and 16 oz/A, respectively. To preserve treatment differences from EPOST and MPOST applications, maintenance treatments including Roundup Powermax at 22 oz/A + Liberty at 29 oz/A and Liberty at 22 oz/A + Select at 16 oz/A were applied on July 21 and 31, respectively. Data were subjected to separate ANOVA for selected pairs of treatments including the following: 1 vs 2, 3, 4, 5, 6, and 7; 2 vs 3, 4, 5, and 7; 5 vs 8; and 6 vs 7. Parameters measured included weed control efficacy at 28 d following the EPOST and MPOST timing and prior to harvest (barnyardgrass, large crabgrass, broadleaf signalgrass, browntop millet, sicklepod, hemp sesbania, entireleaf and pitted morningglory, and redroot pigweed) as well as seed cotton yield.

Primary differences in weed control were observed for barnyardgrass prior to maintenance treatment application (28 d after MPOST). Early season rainfall resulted in tremendous population of barnyardgrass. Based on paired treatment analysis, greater control of barnyardgrass was observed with Roundup Powermax applied initially in a sequential application program as opposed to Liberty (68 vs 28%, 1 vs 2). In addition, a sequential program of Roundup Powermax fb Liberty resulted in greater control of barnyardgrass (68 vs 24%, 1 vs 5) than one including Roundup Powermax in combination with Liberty at both applications. Barnyardgrass control was greater with a Roundup Powermax fb Liberty sequential program than a sequential program of only Roundup Powermax (68 vs 33%, 3 vs 1) or Liberty (68 vs 24%, 4 vs 1). The only other difference in weed control was for sicklepod where a sequential Roundup Powermax program resulted in greater control than Roundup Powermax fb Liberty (100 vs 72%, 3 vs 1). Yield differences were only noted for two paired comparisons. Greater yield was observed with a sequential program including Roundup Powermax fb Liberty compared with Liberty at both applications (3825 vs 2527 lb/A, 1 vs 5). In addition, the sequential Roundup Powermax fb Liberty program (3638 vs 2802 lb/A, 1 vs 4).

In general, weed control and cotton yield were maximized with most treatments evaluated. Control differences in efficacy and yield, where observed, were optimized with inclusion of Roundup Powermax in the initial application. Weed management programs in Glytol/Liberty Link cotton will offer Louisiana producers an effective option for controlling a number of problem weeds.