

A MID-SOUTH EVALUATION OF GLYTOL™ AND GLYTOL+LIBERTYLINK® COTTON**J. Trenton Irby****Darrin M. Dodds****Daniel B. Reynolds****Mississippi State University****Mississippi State, MS****L.T. Barber****University of Arkansas****Little Rock, AR****Christopher L. Main****University of Tennessee****Jackson, TN****Kenneth L. Smith****University of Arkansas****Monticello, AR****Alexander M. Stewart****Louisiana State University****Alexandria, LA****Scott Baker****Bayer CropScience****Memphis, TN****Abstract**

Weed control systems in cotton have become heavily reliant on herbicide resistant technologies. With the rapid adoption of herbicide resistant cotton, research continues to focus on the development of new and improved herbicide resistant technologies. These new technologies include GlyTol™ and GlyTol+LibertyLink® cotton which are being developed by Bayer CropScience. Experiments were conducted at 6 locations in 4 states during the 2008 growing season in order to observe overall crop tolerance as well as yield performance after multiple herbicide application timings. A randomized complete block design was used with each treatment being replicated 4 times. There were 2 entries, with the first being a GlyTol variety and the second being a GlyTol+LibertyLink variety. There were 2 treatments for the GlyTol variety and 6 treatments for the GlyTol+LibertyLink variety. Each herbicide treatment was applied at 4 application timings. These timings included applications at the 2 and 6-8 leaf stages, at lay-by, and when bolls were approximately 50% open. The treatment structure for the GlyTol variety included an application of 1 pound of the active ingredient glyphosate per acre (lb ai/A) as well as an untreated check. Treatments for the GlyTol+LibertyLink variety included an untreated check, 1.0 lb ai/A glyphosate, and 0.5 lb ai/A glufosinate applied alone, tank-mixed, and sequential applications of each active ingredient. Visual ratings for crop tolerance were recorded 7, 14, 21, and 28 days after application (DAA) for each application timing. In addition to the visual ratings, plant heights were recorded 10-14 days after each application in order to monitor for changes in plant height due to herbicide application. After the application at lay-by, a non-destructive boll sample was collected in order to monitor boll development for misshapen or abnormal bolls. The results of these data indicate that minimal visual injury was observed and no differences in yield were noted for any of the treated plots when compared to the untreated within either variety. Slight reductions in plant height did occur after the application at the 6-8 leaf stage when glufosinate was applied to the GlyTol+LibertyLink variety. However, no reductions in plant height were noted after any of the other application timings. No differences in the number of misshapen or abnormal bolls were observed. These data indicate excellent crop tolerance for both the GlyTol and the GlyTol+LibertyLink varieties. Further research will be conducted in order to observe crop tolerance and yield performance after multiple applications of glyphosate and/or glufosinate.