ON-FARM PERFORMANCE OF GLYTOL LIBERTY LINK AND WIDESTRIKE ROUNDUP READY FLEX COTTON VARIETIES IN GEORGIA

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Abstract

The existence of glyphosate-resistant Palmer amaranth has forced producers in Georgia to seek effective herbicide systems which maintain weed control and maximize cotton yields. Herbicide systems utilizing topical applications of glufosinate (Liberty) along with residual herbicides have been very effective and widely adopted. Glytol Liberty Link Bollgard II Flex (GLB2) cotton cultivars exhibit excellent tolerance to Liberty and no injury is noted with overtop application of glufosinate. Dow AgroSciences does not promote the use of Liberty on Phytogen Widestrike (WRF) cotton; however, growers have utilized these systems on both GLB2 and WRF varieties. This study compared the performance of FM 1944 GLB2, PHY 339 WRF, PHY 499 WRF, PHY 575 WRF, ST 4946 GLB2 and ST 6448 GLB2 in 18 on-farm, large plot, replicated trials across Georgia during 2013. Lint yields averaged across varieties varied among locations between 616 and 1453 lbs/A. The ranking of varieties based on average yields from high to low was PHY 499 WRF, PHY 339 WRF, ST 6448 GLB2, PHY 575 WRF, ST 4946 GLB2, and FM 1944 GLB2. Statistically, PHY 499 WRF was similar in yield to PHY 339 WRF and ST 6448 GLB2, and higher than PHY 575 WRF, ST 4946 GLB2 and FM 1944 GLB2. Varieties PHY 339 WRF and ST 6448 GLB2 were statistically similar to PHY 575 WRF and ST 4946 GLB2, yet higher than FM 1944 GLB2. With regards to consistency of performance, PHY 499 WRF, PHY 339 WRF and ST 6448 GLB2 had yields which were above average in at least 61% of the locations (compared to less than 45% with other varieties) and were ranked in the top two most frequently (at least 44% compared to less than 33% with other varieties). This work provides growers with information needed to make proper variety decisions when they desire these traits by not only based overall lint yield, but consistency of performance across a diverse set of environments. It should be noted that fiber quality characteristics and consistency of performance over multiple years could be used to more adequately differentiate these varieties.