AN IN-DEPTH LOOK AT NEW COTTON CULTIVARS IN GEORGIA

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Abstract

The expiration of registration on single-Bt gene cotton varieties has resulted in the loss of Georgia's most widely planted cotton variety (DP 555 BG/RR). New cotton varieties have similar or greater yield potential than this variety, but information surrounding growth and maturity of these varieties is limited. The objective of our study was to determine differences in growth, maturity, and boll distribution of these new varieties compared to DP 555 BG/RR. This experiment was conducted at four non-irrigated and one irrigated large-plot variety trials in Georgia during 2009. Five cotton varieties were examined prior to harvest at each location and included DP 555 BG/RR (DP555) and four new varieties DP 0935 B2RF (DP0935), PHY 375 WRF (PHY375), FM 1740 B2RF (FM1740), and ST 5458 B2RF (ST5458). Plant mapping was conducted on 30' of one row of each variety and included measuring plant population, plant height, total number of main-stem nodes, and boll production. Boll production was accomplished by recording the main-stem node and fruiting position of each boll. Data were analyzed across locations due to lack of within location replication. Plant growth and maturity varied between varieties. DP555 was similar in height to PHY375 and DP0935, but was 6 and 7.5" taller than ST5458 and FM1740, respectively. DP555 produced 3.7 to 5.3 more main-stem nodes than the other varieties. The total number of bolls produced by each variety was similar, but DP555 had 16.5 and 17.9% fewer open bolls than DP0935 and FM1740. Boll distribution was similar between new varieties, but differences were significant when compared to DP555. On the first fruiting position, DP555 produced fewer bolls than new varieties on main-stem nodes 5 to 12, and more bolls on nodes 21 and higher. On the second and third fruiting positions, DP555 produced more bolls on main-stem nodes 17 and higher. Based upon this study, the growth, maturity, and boll distribution of the new varieties examined is different than DP555. This implies that management strategies may need to be altered in Georgia when growing these varieties. Also, plant mapping may be a tool used to gather information about new varieties with the limited time available before commercialization.