EVALUATING WIDE ROW PRODUCTION SYSTEMS IN GEORGIA

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Abstract

Recent success stories have generated widespread interest in wide row cotton production. Seed is one of the largest inputs growers have. Wider rows can assist in reducing input costs. Recent reports of wider rows resulting in less boll rot and the potential for fewer irrigation events has further generated interest among Georgia growers. The objective of this study was to quantify the effect of row spacing on (1) cotton growth and development and (2) lint yield and fiber quality. An experiment was conducted in Tifton, GA in 2021 where DP 1646 B2XF was planted in six replications of 36-inch, 48-inch, 60-inch, and 72-inch row spacings arranged in a RCBD. Cotton was managed throughout the growing season using extension recommendations for the region. Cotton stand was evaluated approximately three weeks after planting. Beginning at pinhead square, heights and nodes were collected biweekly throughout the season. Nodes above white flower (NAWF) was collected weekly beginning at first flower and ending at cutout. At first open boll, percent open boll and nodes above cracked boll (NACB) were collected weekly until defoliation. The trial was defoliated at approximately 60% open boll and harvested approximately 2 weeks following defoliation. Following harvest, gin turnout was calculated at the UGA Microgin, as well as HVI fiber quality analysis from samples sent to the USDA Classing Office in Memphis, TN. With respect to plant population, the highest was noted at the standard 36-inch row spacing (34,122 plants/acre). Plant population was reduced 45 to 52% when row spacings were 60- to 72-inches wide, thus completing one of the major goals of this system. With respect to crop growth and development (heights, nodes, NAWF, NACB, and percent open boll), there were no differences at each individual observation date or with respect to growth rate as determined with regression analysis. Although the wider row spacings (60- and 72-inches) yielded higher in terms of linear row feet, the highest yielding treatment was the standard 36-inch row spacing. The only treatment to significantly differ was the 72-inch row spacing, the 48- and 60-inch row spacings numerically reduced yield 200 to 300 lbs of lint per acre. No differences were noted in terms of turnout or fiber quality with respect to row spacing. Overall, this study demonstrates that the standard row spacing (36-inch) is currently the best option for cotton growers in Georgia. Future research will evaluate newer varieties, and this experiment will be repeated in 2022.