GROWTH, LINT YIELD AND FIBER QUALITY AS AFFECTED BY 15 AND 30-INCH ROW SPACING AND PIX RATES

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Abstract

Ultra-narrow-row cotton (UNRC) research dates to the early 1940's. The advent of technologies, such as selective over-the-top herbicides, herbicide-resistant cultivars and precision planters specially designed for narrow rows, has renewed interest in this production system. However, the research focus is now turning more to yield potential, fiber quality and vegetative growth control. This experiment was conducted to study the effects of 15 and 30-inch rows and Pix rates on yield, fiber quality, and plant height control. The plots were planted with a John Deere Max-Emerge planter at seeding rates of 40,000 seed per acre for the 30-inch-row treatment and 80,000 seed per acre for the 15-inch row treatment. The main plots (row spacing) were sub-divided into four pix treatments. Sub-plots received a single Pix application at a rate of 0, 5, 10, and 15 ounces per acre at matchhead square stage. Severe drought during the boll filling period limited the yield potential of both row-spacing treatments tested in the study, masking the benefit of the experimental treatments. Cotton plants grown in 15-inch rows were consistently shorter across Pix rates than plants grown in 30-inch rows. All Pix treatments were effective in maintaining the plants at the target plant height of 30 inches.

Lint yield of 30-inch row plots was not statistically different from cotton grown in 15-inch rows. Plants grown in 15-inch rows produced a larger fraction of the total yield on position one of reproductive branches 1-5 than plants produced in 30-inch rows. Plants in 15-inch rows produced 27% more bolls per unit of area, however boll size was smaller. Pix application rate did not affect lint yield in either row spacing tested. Statistically significant reductions in fiber strength and micronaire were detected in 15-inch row plots. The experiment demonstrated the feasibility of producing ultra-narrow row cotton in the Lower Coastal Bend Region of Texas. The data indicated that yield potential could be increased; however, fiber quality (strength and micronaire) may be reduced.

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