

# NITROGEN AND TILLAGE COMPARISONS OF CONVENTIONAL AND ULTRA NARROW ROW COTTON

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## INTERPRETIVE SUMMARY

Cotton production increased rapidly in Florida, from about 12,000 acres in 1985 to 98,000 acres in 1996 with the production of 130,000 Bales in 1996. According to Touchton and Reeves (1988), conservation tillage systems have a beneficial effect on cotton production in the sandy coastal plain soils of the southeastern states, but the natural formation of tillage pans has been recognized as a limiting factor in these soils. Previous research results suggest that detrimental effects of traffic on N uptake efficiency may be reduced with conservation tillage systems and that higher fertilizer N application rates may not be needed for conservation tillage practices such as strip-till in Coastal Plain soils. The objectives of this research were to compare minimum and conventional tillage for cotton planted in 36" and 7" row spacings with different N rates on cotton.

This research was conducted in 1997 and 1998 on a Dothan sandy loam (fine, loamy siliceous, thermic Plinthic Kandiudults) located at the North Florida Res. and Educ. Center (NFREC), Quincy, FL. We compared 36" row-

spaced cotton planted with a strip-till planter to ultra-narrow row cotton (UNR) with 7" row width planted with a Great Plains no-till drill (both planted in minimum and conventional tillage). Three N rates (0, 60, 120 lb N acre<sup>-1</sup>) were applied in 1997 and four (0, 60, 120, and 180 lb a.i. N acre<sup>-1</sup>) were applied in 1998.

## RESULTS

- C Number of bolls per plant generally increased with higher N rates and were higher on plants from conventional rows than UNR
- C Higher yields of cotton were obtained at higher N rates in 1997 and were opposite due to drought and hard lock bolls in 1998.
- C Significantly higher yields were obtained on UNR as compared to conventional row widths in both years.

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