

## **Alabama Cotton Commission (AAC) Project Report 2007**

Project Title: Effect of Irrigation Scheduling and Tillage System on Cotton Production, #28

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Summary:

A wireless communication system integrated with a network device was installed at the Tennessee Valley Research and Extension Center. Connection has been established between the research site in Belle Mina and Auburn. There were some issues with reliability this past season. Several resets of the dataloggers that control the system were detected. The source of these resets is yet to be determined, but they have decreased in frequency. A defective deep cycle battery was discovered late in the Summer. The battery has been replaced. We suspect that the defective battery was causing the resets.

All irrigation treatments were the same for 2007, except for the dryland control. Due to the extreme drought, there was a significant ( $p = < 0.001$ ) difference between dryland and irrigated cotton (Fig. 1, top). Average seed cotton yields were 1,101 and 3,273 lb/ac for the dryland and irrigated treatments, respectively. Overall, there were no significant ( $p = 0.192$ ) differences in seed cotton yield between tillage treatments (Fig. 1, bottom). However, the long-term no-till with rye as a winter cover crop treatment had greater yields; a 12% increase from the conventional till and 13% greater than the recently established no-till with winter cover plots. There was not a consistent trend in soil moisture content between tillage treatments.

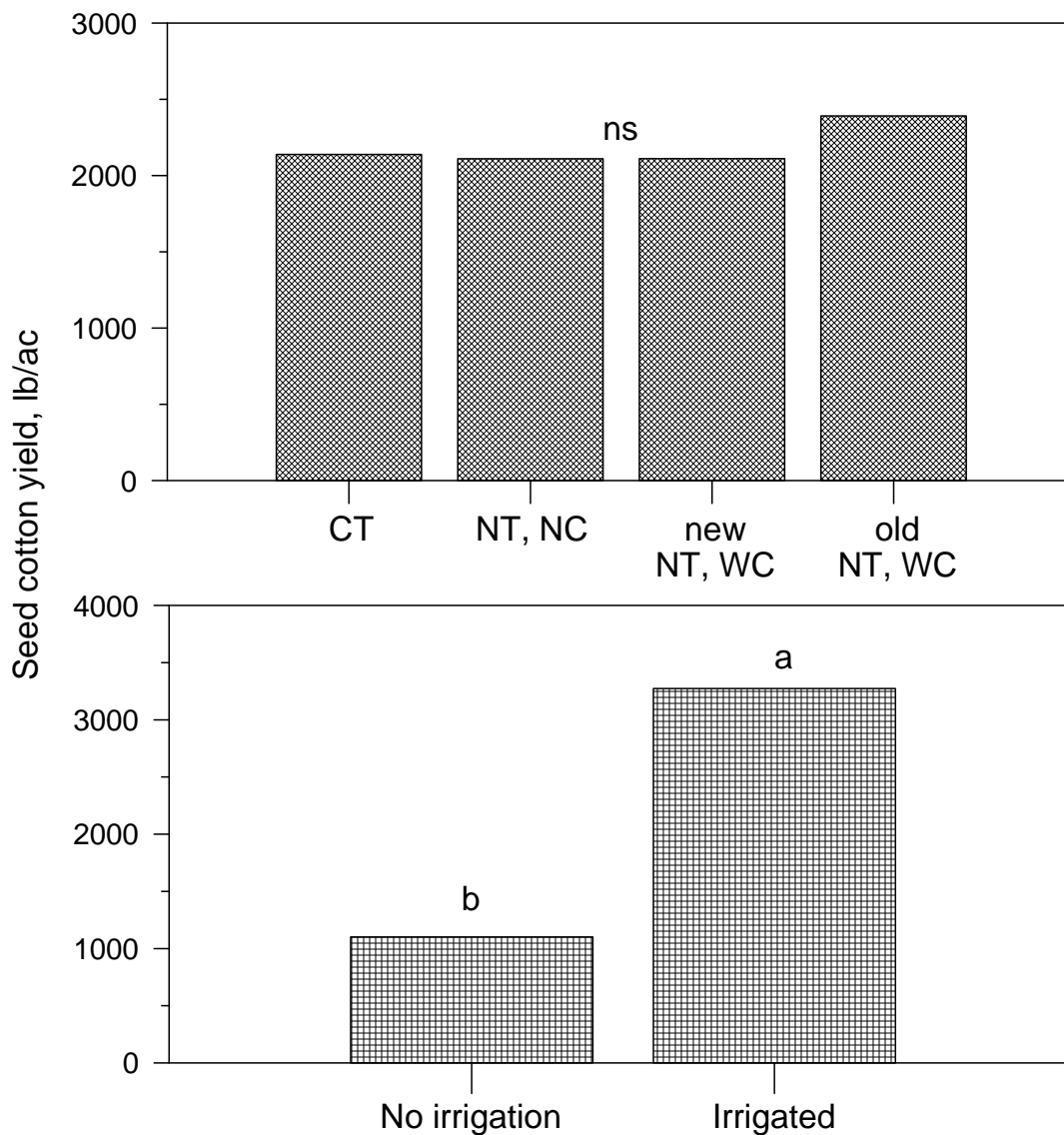


Figure 1. Seed cotton yield by tillage treatment (top) and by irrigation (bottom) at the Tennessee Valley Research and Extension Center during the 2007 season. CT-conventional tillage; NT, NC-no-till with no cover crop; new NT, WC-plots used to be in conventional tillage and have been changed to no-till with rye as a winter cover crop recently (~2 years); old NT, WC-long-term (>10 years) no-till plots with rye as a winter cover crop.