

**2006 Cotton Commission Report**  
**Continued Support of Long-term, Field Research**

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In spite of a severe drought throughout most of Alabama in 2006, crops on the **Old Rotation** experiment (circa 1896) and the **Cullars Rotation** experiment (circa 1911) continued a trend that began in 1996 when these experiments changed from conventional tillage to conservation tillage. Another record cotton yield on the Old Rotation of 1760 lb. lint per acre was produced on the NON-IRRIGATED half of the treatment following corn and crimson clover cover crop plus 120 pound N per acre. This surpassed 2005's record cotton yield of 1660 lb. lint per acre on the same treatment. After 4 years of irrigated cotton yields compared to non-irrigated cotton yields on this experiment, we have yet to demonstrate any advantage to irrigating cotton at this location. Irrigation experiments with cotton in the Tennessee Valley have repeatedly shown advantages to irrigated cotton. Explanations as to why irrigation on the Old Rotation has not been an advantage include: (1) timely rainfall (Fig. 1), (2) improved infiltration, soil water-holding capacity, and depth of rooting because of conservation tillage techniques, and (3) poor irrigation timing. Over 4 years, the irrigated cotton yields were 101% of the non-irrigated yields. On the other hand, irrigated corn plots produced 125% of the non-irrigated plots. On the nearby, non-irrigated Cullars Rotation, an all-time record cotton lint yield of 2050 lb. lint per acre was produced on the treatment that receives complete N-P-K fertilization (plot 3)! This surpasses the previous record cotton yield of 1880 lb. lint per acre on this same plot in 2004. Good wheat (54 bu/acre) and corn yields (110 bu/acre) were made on this treatment in spite of a drought throughout the rest of Alabama. As in the Old Rotation, timely rainfall at this site and the long-term benefits of conservation tillage are given credit for high yields in a drought year. The effects of the 2006 drought were evident in cotton and soybean yields on long-term experiments at the Tennessee Valley Research and Extension Center (TV) in Belle Mina and at the Prattville Research Station (PS). Cotton yield averaged 351 lb. lint per acre at TV and 346 at PS on the **Two-year Rotation** experiment (circa 1929). Soybean yield at TV was only 17.0 bushels per acre on the Two-Year Rotation experiment (circa 1929). Peanuts at Prattville were a total disaster with no yield recorded. The **Rates of NPK experiments (circa 1954)** with cotton at TV and PS both averaged about a bale per acre.