

**COTTON PRODUCTION UNDER LONG-TERM  
CONSERVATION TILLAGE IN A COASTAL  
PLAIN SOIL**

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**Abstract**

Conservation tillage can conserve natural resources and optimize crop productivity. It has been shown to be superior over conventional tillage for production of cotton (*Gossypium hirsutum* L.) in a wheat (*Triticum vulgare*) double cropping system in South Carolina. However, late planting in June frequently resulted in low yields. Consequently, early planting of a full season cotton cultivar may be required to optimize yield. A 2-yr study was conducted to investigate the influence of long-term conservation tillage on a 2-yr rotation with corn (*Zea mays*), barley (winter cover crop), and cotton grown on a Norfolk loamy sand when cotton was planted in May. Four cotton cultivars (ChemBreed 232 and 407; Delta and Pine Land 90 and 5415) were planted on 0.97-m row spacing at the rate of 136,000 seed/ha on May 16, 1995, and May 9, 1996. Standard cultural and managements practices were utilized. Mean cotton lint yield was 833 kg/ha. Conservation and conventional tillage were not significantly different; nor were cultivars significantly different ( $P \leq 0.10$ ). There were no significant interactions between cotton cultivars and tillage systems for lint or seed yield ( $P \leq 0.10$ ). Neither tillage nor cultivars had a significant effect on plant dry matter or nitrogen accumulation. These studies showed that cotton production with conservation tillage in a 2-yr rotation with corn is a feasible cropping system in the southeastern Coastal Plain. Additionally, use of conservation tillage with cotton production will conserve the soil through controlled soil erosion and increased soil organic matter.