

CONSERVATION TILLAGE SYSTEMS FOR COTTON ON MISSISSIPPI RIVER ALLUVIAL SOILS

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ABSTRACT

Questions remain on the optimum combination of conservation tillage practices for cotton (*Gossypium hirsutum* L.) production on some of the common alluvial soil types in Louisiana. Therefore, a field study was conducted to investigate various conservation tillage practices on Sharkey clay and Commerce silt loam. A total of 16 treatments were established by combinations of seedbed preparation techniques (no-till, stale seedbed, and conventional till), winter cover crops [wheat (*Triticum aestivum* L.), hairy vetch (*Vicia villosa* Roth.), or native vegetation], cultivation (with and without), and in-row sub-soiling in the fall (with and without) on two soil types (Commerce silt loam and Sharkey clay)

from 1996-1999. On Sharkey clay, there were no treatment differences in early cotton growth or lint yield. On the silt loam, there was a year by treatment interaction with regards to early plant height, nodal development prior to flowering, and lint yield. In 1997, there was adequate rainfall but below average temperatures, thus plants in conventionally prepared beds were 1.5 in. taller with 1.1 more nodes than plants in the no-till seedbeds. Whereas with early dry conditions in 1998, plants in the no-till treatments were 1.1 in. taller with 1.3 more nodes than plants in conventional seedbeds. There was no difference in lint yield on the silt loam in 1996 and 1997. Whereas in 1998 and 1999, lint yield was increased by no-till and in-row subsoiling by 87 and 66 lb/A, respectively.