

**EFFECT OF TILLAGE PRACTICES ON COTTON  
IN ALABAMA'S COASTAL PLAIN**

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very heavy resistant worm pressure was a confounding factor. In summary, performing needed tillage operations in the fall did not affect yields in any year, but beneficial effects of tillage on lint quality were sometimes lost by performing them in the fall.

**Abstract**

Cotton acreage has experienced a resurgence in Alabama in recent years, due to favorable prices and value as a rotation crop. Acreage has increased to nearly 500,000 acres in 1995, or an increase of 30% from 1994.

Most of this increase has come in Southeast Alabama, on sandy, easily compacted soils subject to drought and erosion. Typical production practices include conventional and in-row tillage ("row-till"), usually in combination with in-row subsoiling to shatter a hardpan, and often using a winter cover crop. Cool, wet soils in the spring often limit producers' ability to perform all needed tillage operations in a timely manner, so a study was conducted from 1993 to 1995 to determine the feasibility of performing some of these operations in the fall (stale seedbeds).

Treatments included combinations of spring or fall bedding and subsoiling (rip/hip), with or without a cover crop, rip/hip annually or once every 3 years, row-tilling, and conventional tillage. Plant mapping, yield and quality data were taken.

There were no treatment effects on boll retention, reproductive nodes, or yield in any year. In 1993, lint length was longer with rip/hip in the fall without a cover crop compared to rip/hip with a cover or conventional tillage. However, length was greater in conventional tillage with a cover than without. In 1994, there was no effect of tillage on micronaire, length or strength.

Lint strength was also greater with rip/hip in the fall compared to spring treatments in 1993. Micronaire was decreased by rip/hip, both spring and fall, compared to row-till or conventional tillage. Spring and fall rip/hip increased cotton height in 1993, but only spring and not fall rip/hip increased cotton height in 1994. Residual tillage effects from previous years were not noted.

Weather played a critical factor in the expression of effects from tillage. The 1993 growing season was dry, but a limited amount of irrigation was supplied, and some probable effects of water conservation/availability were noted. 1994 was a relatively wet year, so that plants were rarely water-stressed and there were few effects of deep tillage. In 1995, irrigation was again applied, however,