NO-TILLAGE CROP PRODUCTION IN GEORGIA

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No-tillage crop production has escalated in Georgia from 26,000 acres in 1973 to 405,000 acres in 1982. However, it is still a relatively small fraction (10 to 15%) of the total acreage of corn, soybeans, and grain sorghum produced in Georgia. The no-till acreage for corn, soybeans, and grain sorghum has increased substantially over the past ten years (Table 1). No-till soybeans dramatically increased from 11,000 acres in 1973 to 320,000 acres in 1982. The large increase in no-till soybeans in the past five years is directly related to a large increase in the small grain acreage and to the successful adoption of doublecropping practices. The trend towards increased no-till soybeans will likely continue as long as there is a significant acreage of small grains. If suitable markets are developed, no-till grain sorghum will probably increase since it can also be double-cropped with small grains. No-till corn production probably will not increase significantly over the next few years.

The no-tillage system that is currently most popular in Georgia is the wheat-soybean doublecrop system. Generally, fall tillage is completed before establishing the wheat, but soybeans are planted without tillage following wheat harvest. In much of the Coastal Plain region of Georgia the soybeans would be planted with in-row subsoiling. In the Piedmont and Mountain regions of the state a fluted coulter planter is generally used. With doublecropping systems, lime as well as P and K fertilizers are commonly broadcast-applied in the fall for both crops.

Other no-tillage production systems currently in use include corn or soybeans planted in killed rye, and grain sorghum double-cropped with small grains. However, the acreage of these systems is small compared to the wheat-soybean system.

New practices in no-tillage production include no-till cotton production and no-till peanut production. However, these are limited to a few growers in the state. Additional research on no-tillage production of these crops is needed. Another new practice which has received considerable interest from growers is corn or grain sorghum no-till planted into legume cover crops. The most common legume used is crimson clover; however, arrowleaf clover, subterranean clover, hairy vetch, improved common vetches, and lupines are also being used. Research results indicate that a legume cover crop can provide 80 to 100 lbs N/A for a subsequent crop. At the same time, soil erosion can be reduced substantially with these crop/tillage systems.

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Research emphasis on no-tillage in Georgia focuses on:

1) The long-term influence of no-tillage on soil properties and crop production.

2) The problem of soil acidity under no-tillage management and its effect on crop production.

3) Nitrogen fertilizer efficiency in no-tillage production.

4) Legume cover crops in no-tillage production systems.

5) Relationships between soil erosion and soil productivity.

6) Pest management and control in no-tillage systems.

Although no-tillage has gained substantial popularity in the past few years, more row-crop acreage in Georgia needs to be in no-tillage production due to excessive soil erosion. Continued research and extension efforts, especially in weed control, should enable the amount of no-till production to continue to increase.

Table 1. GEORGIA NO-TILL ACREAGE CORN, SOYBEANS, AND GRAIN SORGHUM

	Corn	Soybeans	Grain Sorghum	Total No-Tillage	Total Corn, Soybeans, Sorghum
	Acres				Millions of Acres
1973	12,000	11,000	3,000	26,000	-
1974	18,000	22,000	3,000	43,000	-
1975	23,500	42,200	9,300	75,000	3.09
1976	27,310	38,755	9,925	75,990	3.08
1977	25,697	41,371	6,460	73,528	2.11
1978	35,000	85,000	10,000	130,000	3.22
1979	35,000	110,000	6,000	151,000	3.70
1980	53,955	170,293	26,297	250,545	3.52
1981	58,450	215,300	32,200	305,950	3.30
1982	50,000	320,000	35,000	405,000	3.70

Source: USDA-SCS, Athens, Georgia