

## UNR COTTON STUDIES CONDUCTED IN GEORGIA 1999

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### Abstract

The renewed interest in narrow row cotton production has produced many unanswered questions in Georgia. Field demonstrations were conducted to obtain more information on the production practices required to grow ultra-narrow row cotton. Field demonstrations were conducted at three locations. One site was at the Sunbelt Expo site in Moultrie Ga. Two other sites were located on the University of Georgia Coastal Plain Experiment Station in Tifton, Ga.

### Introduction

Narrow row cotton has received cyclical interest and attention over the past 40 years. Theoretically, close row, high population cotton requires only a few bolls per plant for acceptable yields and can be produced in a short period of time with limited resources. In the last few years, the concept of ultra narrow row cotton has been re-introduced with the development of broad spectrum over-the-top weed control technology and herbicide-tolerant varieties. Other developments that support ultra narrow row cotton are the use of plant growth regulators and the availability of precision drills and close-row planters. Another driving force is the interest in reducing production costs. Until recently, the majority of cotton produced in Georgia has been harvested with spindle pickers. Several field demonstrations were conducted in 1998 comparing UNR cotton to row cotton. In each field demonstration conducted, except one, the UNR cotton out yielded the wide row cotton. The average yield difference was 174 pounds of lint per acre for UNR cotton versus row cotton.

### Discussion

The objectives of the field demonstrations were:

- 1) To learn more about UNR cotton production practices
- 2) To see how UNR cotton compares to row cotton
- 3) Let growers see UNR cotton

### **Sunbelt Exposition Plots:**

Planting date May 20

UNR cotton planted in 10" row spacings with a vacuum planter

Cotton Variety Suregrow 125 B/RR

Irrigated

A planting rate of 153,000 seeds per acre was used.

Cotton was harvested using an AC 860 cotton stripper on October 20. The plots were one header width wide, 12.5 feet, and 36 feet in length.

The plots consisted of 3 replications.

### Treatments:

UNR cotton with deep tillage (chisel plowing) versus UNR cotton with shallow tillage (disking and field cultivating)

The other set of treatments was plant populations.

The populations were hand thinned to 25,000, 50,000, 100,000, and 150,000 plants per acre. These results are shown in Table 1 and Table 3.

### **Coastal Plain Experiment Station, RDC Pivot Plots:**

Planting date May 5

UNR cotton planted in 10" row spacings with a vacuum planter

Cotton Variety Suregrow 125 B/RR

Irrigated

Cotton was harvested using an AC 860 cotton stripper on September 20. The plots were 100 inches wide, and 50 feet in length.

The plots consisted of 3 replications.

### Treatments:

Treatments consisted of plant populations of 50,000, 100,000, and 150,000 plants per acre. These results are shown in Table 4.

### **Coastal Plain Experiment Station, Ponder Farm Plots:**

Planting date June 8

Non-irrigated

Cotton Variety Sure-Grow 125

UNR cotton planted in 10" row spacings with a vacuum planter.

A planting rate of 153,000 seeds per acre was used.

Row cotton and UNR cotton were treated the same, except for one application of pix and tillage. They were harvested on November 4 with an AC 860 finger stripper.

### Treatments:

UNR cotton with Conventional tillage 36" row cotton versus 10" UNR cotton.

Deep tillage (chisel plowing), versus UNR cotton with shallow tillage (disking and field cultivating).

Row spacings of 10, 20, 30, 36 inches. These results are shown in Table 2, Table 5, and Table 6.

### Summary

UNR cotton can be produced in Georgia with comparable or better yields than wide row cotton. This year, the late planted

UNR cotton yielded 424 pounds of lint while the wide row cotton yielded 321 pounds of lint per acre. The two plant population studies indicate that decent yields can be obtained from low plant populations. The populations used in the studies were hand thinned into a uniform stand. The uniformity of stand seems to be more important than the number of plants per acre. Tillage seems to be less of a factor in the production of UNR cotton than in wide row cotton. Different row spacings of 10, 20, 30, and 36 inches did not have much effect on yields of late planted non-irrigated cotton in 1999.

Assumed turnouts of 28 percent for 10, 20, 30 inch spacing and 33 percent for 36 inch spacing

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Table 1. UNR Tillage Sunbelt Expo Farm 99\*

<b>Tillage</b>	<b>Seed Cotton</b>	<b>Lint @ 28%</b>
Shallow	4571	1280
Chiseled	4442	1244

\* Irrigated 3 replications

Table 2. UNR Tillage Ponder Farm 99\*

<b>Tillage</b>	<b>Seed Cotton</b>	<b>Lint @ 28%</b>
Shallow	1878	526
Chiseled	1665	466

\* Non-irrigated 4 replications

Table 3. 1999 UNR Plant Population Sunbelt Expo\*

<b>Plant Pop</b>	<b>Seed Cotton</b>	<b>Lint @ 28%</b>
25,000	4178	1170
50,000	4224	1183
100,000	4209	1178
150,000	4526	1267

\* Irrigated 3 replications

Table 4. 1999 UNR Plant Population RDC Pivot\*

<b>Plant Pop</b>	<b>Seed Cotton</b>	<b>Lint @ 28%</b>
50,000	4550	1274
100,000	4974	1393
150,000	4751	1330

\* Irrigated 3 replications

Table 5. Wide Vs. Narrow Ponder Farm 99\*

<b>Row Spacing</b>	<b>Seed Cotton</b>	<b>Lint</b>
10 inches	1515	424
36 inches	974	321

\* Non-irrigated 8 replications

Assumed turnouts of 28 and 33 percent

Table 6. Row Spacing Ponder Farm 99\*

<b>Row Spacing</b>	<b>Seed Cotton</b>	<b>Lint</b>
10 inches	1336	374
20 inches	1607	450
30 inches	1516	424
36 inches	1014	335

\* Average of 3 replications