### UNR FARM TRIALS IN GEORGIA 1998 Michael J. Bader, S. Wesley Smith, Rick Reed, Richard McDaniel, Lannie L. Lanier and Chuck Ellis University of Georgia

#### **Abstract**

The renewed interest in narrow row cotton production has produced many unanswered questions in Georgia. Field demonstrations were conducted at several locations to give growers, county agents, ginners, and agribusiness an opportunity to observe narrow row cotton production. Field demonstrations were conduction at five locations. Two of the locations had three replications. The other locations were individual blocks.

### **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. This has resulted in having very little information available due to the lack of harvesting equipment.

### Field Demonstrations Conducted in 1998

The objectives of the field demonstrations were:

- 1) To learn more about UNR cotton production
- 2) To see how UNR cotton compares to row cotton
- 3) To see what production practices growers would use
- 4) Let growers from different areas of Georgia see UNR cotton

*Dooly County, Ga. Plots.* Plots were in conjunction with Chuck Ellis, CEC, Dooly County and Larry Willingham, CEA, Dooly County

### Treatments:

Non-irrigated UNR cotton planted in 10" row using a vacuum planter

Irrigated UNR cotton planted in 10" row using a vacuum planter

Irrigated UNR cotton planted in 7" row using a grain drill Irrigated 30" conventional row cotton

### Cotton Variety 1220 BG-RR

The dry land 10" UNR, irrigated 10" UNR, and the irrigated 30" row cotton were planted in the same field. The dryland cotton was out side of the pivot. The 7" UNR cotton was under a pivot across a road. The cotton was harvested with a new John Deere 7455 cotton stripper equipped with a finger head manufactured by Taylor. Approximately one acre of each plot was harvested and placed on separate trailers. The trailers were individually ginned to determine turnouts. These results are shown in Table 1.

*Quitman County Plots.* Plots were in conjunction with Wes Smith, CEC, Upson County

### Treatments:

Strip-till 36" row cotton UNR cotton planted no-till with a grain drill UNR cotton planted into tilled ground with a grain drill

#### Non irrigated

Cotton Variety 1220 BG-RR

The plots consisted of 3 replications. They were strip-till, UNR cotton with tillage, and UNR cotton no-tilled. Cotton was harvest with a AC 860 cotton stripper. One round of each plot was harvested of weighed. The trailers were individually ginned to determine turnouts. These results are shown in Table 2.

*Jenkins County Plots.* Plots were in conjunction with Lannie L. Lanier, CEC, Jenkins County

### Treatments:

Strip-till 36" row cotton UNR cotton planted no-till with a 8" vacuum grain drill UNR cotton planted no-till with a 10" vacuum planter

The field has been in strip-till since 1992. Cotton Variety 1220 BG-RR The plots were located under the same pivot. The individual blocks contained 17, 6, and 2.5 acres for the strip-till 36", drilled 8", and planted 10", respectively.

Row cotton and UNR cotton was treated the same. They were harvested with an AC 860 finger stripper. These results are shown in Table 3.

*Coffee County Plots.* Plots were in conjunction with Rick Reed, CEC, Coffee County

Reprinted from the Proceedings of the Beltwide Cotton Conference Volume 2:1482-1484 (1999) National Cotton Council, Memphis TN

# Treatments:

Strip-till 36" row cotton UNR cotton planted no-till with a 10" vacuum planter

## Cotton Variety Sure-Grow 125

The field was planted June 17, after black oats were harvested. The plots consisted of 3 replications. They were strip-till and UNR cotton no-tilled. Cotton was harvest with an AC 860 cotton stripper. The trailers were individually ginned to determine turnouts. These results are shown in Table 4.

## **Observations from the Field Demonstrations**

In each field demonstration, except one, the UNR cotton out yielded the wide row cotton. The yield differences were +428, +80, +215, -80, +306, +142, and +127 pounds of lint per acre for UNR cotton verses row cotton. One aspect of this year's plots was the non-typical weather patterns. Many irrigated fields of wide row cotton did not perform as well as normal. The Dooly and Jenkins county growers usually have higher irrigated yields than their yields in these demonstrations. The only place where UNR cotton was lower was apparently due to tillage. Georgia soils are very prone to hard pans and it is recommended to perform under row sub-soiling in standard row cotton. Why notillage was beneficial in the Quitman county plot is not understood. One explanation would be that the field has been in conservation tillage "strip-till" for a number of years prior to the field demonstration.

One other observation was indicated by the producers. It was that the current machinery does not have enough basket capacity. This lack of capacity requires dumping more often than with spindle pickers. The wide head also slows the dumping due to maneuvering problems.

Many aspects of UNR cotton production are not known in Georgia. UNR cotton may be viable but it will require a radically different production system as compared to conventional spindle picked cotton.

# **Acknowledgment**

The authors express their appreciation to Cotton Incorporated and the Georgia Cotton Commission for providing financial support for these projects.

Table 1. Rabbit Ridge Farms, Dooly County, 1998\*

|                                | dry land 10"         | irrigated             | irrigated            | irrigated            |
|--------------------------------|----------------------|-----------------------|----------------------|----------------------|
|                                |                      | 10"                   | 7"                   | 30"                  |
| Seed cotton                    | 1128 lb/A            | 2080 lb/A             | 1660 lb/A            | 1492 lb/A            |
| Lint<br>Percent lint           | 702 lb/A<br>28.3%    | 1382 lb/A<br>29.4%    | 1034 lb/A<br>27.0%   | 954 lb/A<br>34.0%    |
| Trash &<br>moisture<br>Percent | 444 lb/bale<br>26.2% | 430 lb/bale<br>26.4 % | 522 lb/bale<br>29.6% | 180 lb/bale<br>12.8% |
| Plant<br>population            | 42,350<br>Plants/A   | 82,595<br>Plants/A    | 140,889<br>Plants/A  | 36,590<br>Plants/A   |

No replications

#### Table 2. Larry and Mathew Self, Quitman County, 1998\*

|                  | Strip-till | No-till 8" | Tilled 8" |
|------------------|------------|------------|-----------|
| Seed cotton      | 1786 lb/A  | 2534 lb/A  | 1608 lb/A |
| Lint             | 593 lb/A   | 808 lb/A   | 513 lb/A  |
| Percent lint     | 33.2%      | 31.9%      | 31.9%     |
| Trash &          | 244        | 367        | 367       |
| moisture         | lb/bale    | lb/bale    | lb/bale   |
| Percent          | 16.9%      | 24.4 %     | 24.4%     |
| Plant population | 19,037     | 50,686     | 53,374    |
|                  | Plants/A   | Plants/A   | Plants/A  |

\* Average of 3 Replications

| Table 3. Tilmanson Farm, Lamar Black (manager), Jenkins County, 1998* |            |            |              |  |  |
|---|------------|------------|--------------|--|--|
|   | Strip-till | Drilled 8" | Planted 10"* |  |  |
| Seed cotton   |            | 4517 lb/A  | 3966 lb/A    |  |  |
| Lint  | 909 lb/A   | 1215 lb/A  | 1051 lb/A    |  |  |
| Percent lint  |            | 26.9%      | 26.5%        |  |  |
|   |            |            |              |  |  |

\*Planted 10" pivot end gun did not fully cover.

### Table 4. Tommy Dormany, Coffee County, 1998 \*\*

| <u>,</u>         |            |           |
|------------------|------------|-----------|
|                  | Strip-till | NRC 10"   |
| Seed cotton      | 1408 lb/A  | 2020 lb/A |
| Lint             | 464 lb/A   | 591 lb/A  |
| Percent lint     | 32.9 %     | 29.2 %    |
| Plant population | 39,777     | 124,428   |
|                  | Plants/A   | Plants/A  |

\*\* Average of 3 Replications