

ULTRA-NARROW ROW COTTON PRODUCTION IN MISSISSIPPI

D. W. Parvin and J. D. Stephens
MAFES/Mississippi State University
Mississippi State, MS
S. W. Martin and F. T. Cooke
DREC/MAFES/Mississippi State University
Stoneville, MS

Abstract

An analysis of a 2000 sample of 11 ultra-narrow row cotton (UNRC) producers indicates that UNRC production may result in larger net returns per acre than conventional production practices.

Introduction

Ultra narrow row cotton (UNRC) has received limited interest for several years. The introduction of new varieties, weed control options, and improvements in equipment technology have increased the probability that drill seeded cotton can be grown profitably. The development of broad-spectrum over-the-top weed control technology and herbicide-tolerant varieties, precision drills, and close-row planters have stimulated current interest.

Methodology

During the 2000 production season, detailed information on every trip-across-the-field was taken from 11 commercial operations in the non-Delta region of Mississippi that employed UNRC production techniques on all or a significant part of their acreage. The information was utilized to construct per acre budget tables (Spurlock and Laughlin).

The Department of Agricultural Economics, Mississippi State University, releases estimates of the per acre cost of production cotton on an annual basis. The Department's standard cotton budget for the non-Delta or hill region of Mississippi labeled, "Cotton, 8-row equipment, Brown Loam Area", (Parvin, et al, page 37), reports total direct expenses of \$424.43. Total fixed expenses are estimated at \$77.92. Total specified expenses are \$502.35. At a price of \$0.61 per pound of lint, \$0.05 per pound of seed, and yield of 750 pounds of lint per acre, total income per acre is \$515.63. Net returns above specified expenses are \$13.28 per acre.

The standard or conventional budget was employed to compare net returns above total specified expenses for the conventional or standard method of production and the 11 UNRC operations at a price of \$0.61 per pound of lint for the standard budget (spindle harvest) and \$0.58 for the UNRC budgets (stripper harvest). The price of cottonseed was fixed at \$0.05 per pound.

Study Area

All of the cooperating farms summarized in the report are located in the Hill Region of the state.

Results

Table 1 reports the yield, variety type, and selected cost items for the 11 growers and the standard budget. Genetically modified seed (GMS) was utilized by 10 of the 11 UNRC growers. The standard budget employs conventional seed. Nine of the growers employed double-stack GMS, labeled "BtRR".

All UNRC production is no-till after planting. Nine of the growers produced their cotton no-till while two employed tillage prior to planting. Three growers produced yields larger than the standard.

Seed costs per acre were always higher for UNRC when compared to the standard because more pounds of seed are required per acre. Generally there are no differences in fertilizer costs per acre. However, a few UNRC growers cut the rates, resulting in lower fertilizer costs. Six of the 11 growers experienced herbicide costs greater than the standard.

2000 was a year with low insect pressure. The standard budget reflects an average or expected level of insecticide use. On average, 2000 insecticide material costs were \$60.76 per acre less expensive for the UNRC growers than the standard.

Dollars per acre devoted to operator labor and fuel were less in all UNRC budgets. Direct and fixed expenses per acre were uniformly less for UNRC than for the standard. The per acre reduction in fixed expenses (\$36.35) is consistent with the \$30.10 per acre reduction reported by Wilson, et al. However, it is expected that the fixed expense estimates reported in Table 4 will be reduced another 25% to 30% when better estimates are obtained of the annual hours of use (number of acres per year) for the UNRC equipment.

Estimated net returns per acre averaged \$101.84 for the UNRC grower versus \$13.28 for the standard, an improvement of \$88.56 per acre for the UNRC technology. When adjusted for the difference in insecticide material (\$60.76) and insecticide application cost (\$9.00), the difference narrows to \$18.80 per acre.

Summary

All 11 UNRC growers experienced net returns which were superior to those experienced by the standard budget for the region. The average improvement in returns due to UNRC was approximately \$20.00 per acre.

Literature Cited

Parvin, D.W. et al. 1999. Cotton 2000 Planning Budgets. Agricultural Economics Report 106, Mississippi State University.

Spurlock, Stan R. and David H. Laughlin. "Mississippi State Budget Generator User's Guide Version 3.0." Agricultural Economics Technical Publication No. 88, Mississippi State University, July 1992.

Wilson, S.G. et al. 1999. "Economic Analysis of Ultra Narrow-Row Cotton Production in the Coastal Plain Region of Georgia." In –

Table 1. Yield, variety type, selected cost items, and returns, per acre, 11 UNRC growers vs. standard, Mississippi, 2000.

Grower	Variety	Yield	Seed	Fert.	Herb.	Insect.	Op. Labor	Fuel	Dir. Exp.	Fix. Exp.	Net Ret.
1	BtRR	620	22.00	56.39	19.69	4.07	12.09	5.31	300.82	43.55	147.72
2	BtRR	524	51.66	20.33	97.38	2.34	10.39	4.30	336.45	42.09	-34.02
3	BtRR	810	38.50	56.17	19.69	4.07	11.42	5.26	299.35	43.21	149.53
4	BtRR	657	35.00	19.35	44.23	84.69	10.90	4.56	359.11	44.22	28.63
5	BtRR	615	36.90	8.59	39.19	9.86	10.91	4.82	284.21	44.86	75.28
6	BtRR	730	18.45	34.76	30.09	51.15	9.37	3.86	359.91	39.88	80.21
7	BtRR	610	49.20	23.27	60.88	2.66	8.72	3.36	301.58	36.82	62.70
8	BtRR	825	43.05	20.33	25.58	10.24	9.79	3.69	312.10	41.03	189.32
9	conv	807	35.00	20.33	65.57	116.59	10.43	3.79	411.98	43.20	75.43
10	BtRR	846	43.05	20.33	31.20	42.91	9.86	3.70	336.62	41.28	178.33
11	RR	700	35.00	49.32	37.65	5.45	10.53	5.16	213.45	37.11	167.13
Average		704	37.07	29.92	42.83	30.37	10.40	4.35	319.60	41.57	101.84
Standard	conv	750	9.40	35.64	37.08	91.13	16.25	8.86	424.43	77.92	13.28