EVALUATION OF 30 INCH SKIP ROW VERSES 30 INCH CONVENTIONAL SOLID ROW COTTON

Bill Obsta, Cooperator (2006)
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SUMMARY:

In an evaluation of 30 inch skip row cotton verses 30 inch solid row cotton planted May 7, 2006 and at the final plant population rate of 22,180 and 36,150 respectively, yield and all subsequent fiber quality data were essentially equal between the two treatments showing no statistical difference except for a reduced micronaire, 3.8 verses 4.1 respectively. Financial net returns above compared expenses showed no statistical difference between skip or solid row systems. The producer notes that there are other economic attributes of skip row that are hard to put a dollar value on.

OBJECTIVES:

To evaluate if 30 inch skip row cotton is more economical than conventional 30 inch solid row cotton.

MATERIALS and METHODS:

Delta and Pine Land 393 cotton was planted on May 7, 2006 with a 24 row John Deere 1770NT planter set on 30 inch rows. Twelve rows or half the planter was set up for skip row cotton and the remaining 12 row were set up in the conventional solid row pattern. The entire field was planted alternating this skip with conventional row pattern. The skip row layout is one row skipped and two rows planted, repeating throughout the skip row layout. The planting rate was set for 38,000 and 58,000 seeds/acre respectively for the skip and conventional system. To assist in fertility decisions, soil tests were taken at depths of 0" - 12", 12" - 24", and 24" - 36".

For a list of treatments applied equally to both skip and conventional plots plus those that were different, see Table 1.

Harvest was accomplished by a John Deere 6 row picker which harvested 4 rows for the skip row pattern and 6 rows for the conventional pattern. Weights were taken in a cotton weigh wagon harvested from four replicated plots within the field. Harvested plots were 0.4 acre in size.

Cotton samples were collected from each plot and sent to the Corpus Christi Extension Research Center for ginning on a 10-saw Eagle Laboratory gin. Lint samples were then sent to the International Center for Textile Research and Development laboratory in Lubbock, Texas for fiber analysis.

RESULTS and DISCUSSIONS:

Germination of the seed at planting was less than desired due to minimal rainfall from November, 2005 through May, 2006 resulting in about a 40 % reduced stand count as noted in stand population counts at harvest time (See Table 2). Thereafter, the cotton grew well with ample moisture. Yield in both treatments was quite good at 2 bales per acre. Soil test nutrient recommendations for 2 bale per acre cotton were: 0" - 12" level: 65-0-0-0; 12" - 24": 85-65-0-5sulfur; 24" - 36": 85-85-0-5sulfur.

Plant population and cotton lint micronaire were the only two evaluations between the skip row and conventional solid row evaluation that showed statistical difference. The skip row micronaire was 3.8 verses 4.1 for the conventional solid row cotton. All other lint quality characteristics were essentially the same including lint net loan value, lint yield and net return above compared production expenses. See Tables 2 - 3 for full evaluation.

The producer notes that there are other economic attributes of skip row that are hard to put a dollar value on including: 1) The row middles dry out quicker between rains allowing quicker return into the field for additional management. 2) There is a potential for less boll rot in skip row verses conventional solid row cotton. 3) There is easier and quicker machine accessibility to clean out row units, reducing down-time when units plug up. 4) To facilitate harvest in 2007, producer will switch to a different skip row pattern to harvest 6 rows (9 field rows) of cotton in one cotton picker pass verses 4 rows (6 field rows) currently.

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DISCLAIMER CLAUSE:

Trade names of commercial products used in this report are included only for better understanding and clarity. Reference to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by the Texas A&M University System is implied. Readers should realize that results from one experiment do not represent conclusive evidence that the same response would occur where conditions vary.

Table 1. Difference in production treatments and their expenses applied to skip row verses conventional 30 inch solid row cotton. Bill Obsta, Cooperator, Victoria County, Texas 2006.

PRODUCT OR PRACTICE	APPLICATION PATTERN	Expenses - $/Acre [a/]	
		SOLID	SKIP
Pre-emerge herbicide	Solid	7.86	7.86
8-41-41 fertilizer	Solid	21.73	21.73
3-9-0 starter fertilizer	Skip	2.85	1.90
65-0-0-4s sidedress fertilizer	Skip	15.41	15.41
Scout consultant fee	Skip	8.50	5.67
Cruiser seed treatment	Skip	8.32	5.45
Post-emerge herbicide	Skip	5.77	3.85
Insecticides-s/a	Skip	23.73	15.83
Growth regulators-s/a	Skip	4.91	$3.27
DPL 393 Seed	Skip	23.20	15.20
Totals		$122.28	$96.17

[a/] All other production expense for either cropping system were equal.

Table 2. Evaluation of 30 inch row skip and conventional row cotton planting results, turnout and lint quality values. Bill Obsta, cooperator, Victoria County, Texas 2006.

TREATMENT	PLANTS 1000/A		SEED COTTON TURNOUT %		LINT MIC		LINT LENGTH INCHES		LINT STRNG G/TEX		LINT UNIF % [a/]	
SKIP	22.18	b	32.8	a	3.8	b	1.18	a	31.3	a	85.4	a
SOLID	36.15	a	33.7	a	4.1	a	1.20	a	30.9	a	85.9	a
LSD (P=.05)	7.073		1.67		0.22		0.053		1.28		1.77	
Standard Deviation	3.143		0.74		0.10		0.023		0.57		0.79	
CV	10.78		2.24		2.44		1.97		1.82		0.92	
Treatment Prob(F)	0.1884		0.1856		0.0186		0.5043		0.3672		0.4344	

[a/] Means within a data column followed by the same letter are not significantly different by ANOVA (P = 5 %; LSD).

Table 3. Evaluation of 30 inch row skip and conventional row cotton lint quality values, yield and net return above treatment costs. Bill Obsta, cooperator, Victoria County, Texas 2006.

TREATMENT	LINT ELONG %		LINT STAPLE		LINT NET LOAN CENTS/LB		LINT YIELD LBS/ACRE		NET RETURN [a/] $/ACRE [b/]	
SKIP	5.8	a	38.0	a	49.49	a	947	a	303.58	a
SOLID	5.9	a	38.3	a	48.91	a	988	a	280.97	a
LSD (P=.05)	0.54		1.52		3.084		105.0		67.030	
Standard Deviation	0.24		0.68		1.371		46.7		29.791	
CV	4.12		1.78		2.79		4.83		10.19	
Treatment Prob(F)	0.6898		0.6376		0.5947		0.3073		0.3618	

[a/] Net return above production expenses that were different from the other treatment - See Table 1.

[b/] Means within a data column followed by the same letter are not significantly different by ANOVA (P = 5 %; LSD).