V - HARVESTING

Stripper Harvest Research Tests

(L. S. Stith, M. D. Cannon, & W. D. Fisher)

Tests were initiated in 1964 to investigate the possibility of growing cotton suitable for stripper harvesting. A total of eleven different varieties were grown in an effort to determine the variety or type of cotton best suited to this harvest procedure under Arizona conditions and assess any obvious problems of harvest. A range of varietal types from stormproof Plains cottons such as Blightmaster and Gregg 35 to typical open ball types such as Deltapine Smooth Leaf were included.

Replicated tests were grown at the Cotton Research Center and the Marana Experiment Farm. Harvested yields, gin turnouts, and field losses for both locations are shown in Table 1. Table 2 shows the length, strength, and fineness for the various varieties grown at the Cotton Research

TABLE 1

Stripper Harvest Tests

	Cotton Research Center						Marana (1)		
	Harvested Yield		Gin Turnout		Field Losses (2)		Harvested Yield	Gin Turnout	Field
ariety	Spindle	Stripper	Spindle	Stripper	Spindle	Stripper	Stripper	Stripper	Losses
tapine Sm.Lf.	937	1194	35.8	26.4	23.8	12.0	1283	29.4	32.1
tapine 45	945	1216	33.2	22.8	26.4	14.8	1263	28.2	29.3
kett 4789	738	912	33.2	23.0	15.8	4.2	1111	25.2	12.7
z. 6010*	673	953	31.9	23.9	17.9	4.6	1054	27.7	10.6
.. 61-30*	673	835	31.4	23.6	41.2	13.8	1185	25.7	11.4
ikart 57	627	783	34.2	24.1	33.2	8.3	983	26.9	19.3
,master 101A	539	833	31.4	21.5	30.4	12.3	1146	26.7	12.9
ghtmaster	537	810	32.0	22.7	39.2	9.2	-	-	-
master 111	534	746	31.6	20.9	34.2	11.7	-	-	-
·thern Star 5	457	777	32.6	23.8	37.6	9.2	-	-	-
·gg 35	412	642	28.0	19.4	40.2	9.2	940	23.3	27.0

Experimental Strains

Stripper only used in Marana Harvest

Field losses were estimated by hand-gleaning and represent both weather losses and machine losses.

TABLE 2

Stripper Harvest Tests

Fiber Laboratory Data

Variety	Length Fibergraph UHM	Strength Pressley 1/8"	Micronaire
Deltapine 45	1.07	3.25	4.99
Deltapine Sm. Lf.	1.02	3.26	4.95
Lockett 4789	1.08	3.29	5.12
Ariz. 6010	1.00	3.35	5.15
Ark. 51-30	0.95	2.97	5.72
Lankart 57	0.96	2.86	5.11
Paymaster 101A	0.93	3.30	5.05
Blightmaster	1.00	3.36	4.76
Paymaster 111	1.01	3.56	5.00
Northern Star 5	0.96	2.82	4.30
Gregg 35	0.96	3.48	4.51

Procedure at Cotton Research Center

1. Four replications planted in 8 row blocks.

2. Fifty pounds of nitrogen applied prior to first irrigation.

3. Four irrigations following planting with the last irrigation on July 30. 3.25 inches of rain received in August.

4. Two dates of harvest.
   (a) Defoliant applied September 28. Desiccant applied on plots to be stripped October 6. Harvesting by spindle machine and stripper on October 11.

   (b) Defoliant applied on October 30, by plane to remaining half of field. Desiccant applied to stripper plots on November 13. A killing frost occurred on November 17. Harvest was made on November 30.

5. Plots were hand-gleaned to determine field losses.

Observations

Even though a defoliant followed by a desiccant was used prior to the early stripping (October 12), the cotton plants were still rather green and most varieties had quite a lot of immature, unopened bolls. If early harvest is desired, adequate desiccation for stripper operation appears to be a rather difficult problem.

The cotton in this test was relatively short and yields were not high. Nevertheless, the ground speed of the stripper had to be reduced drastically in order to handle the cotton without clogging the conveyor system; otherwise, no serious trouble was experienced with the stripper at this location.

Procedure at Marana

1. One hundred pounds of nitrogen was used. Forty pounds (from Urea) was plowed under, and sixty pounds in the water after emergence.

2. Crop was mechanically thinned.

3. Four irrigations after emergence, the last on August 1; however, 13 inches of rainfall was received from July through December.

4. No defoliants were used. Harvest was delayed until December 10, following the first freeze.

5. Plots were harvested by stripper only and gleaned for field losses.

Observations

Harvest of the cottons using the commercial stripper, which was designed for Plains grown cotton, presented several problems not anticipated. The following problems were encountered:

1. The plants were too tall. The plants were bent to such an extent that the picking action of the rolls was lost. Picked locks of cotton were dropped and left hanging to the stems in the top of the plant.

2. The picking capacity of the machine was over-loaded so ground speed was very slow. Conveyors were unable to move the cotton to the basket rapidly enough.

3. The basket capacity was too small.

Yuma County Stripper Harvest Experience

(Jim Hazlitt)

Last spring considerable interest was developed through the state on the possibility of stripper harvest of cotton. This type of harvesting gained a foothold in the Plains area of Texas and Oklahoma as well as in the El Paso area. The main advantage of this type of harvest was speed and reduced harvesting costs.

Plots for stripper harvest were placed on the Naquin Ranch near Roll. The conventional variety, Delta & Pine Smoothleaf, was planted along with two Texas Plains stripper type varieties, Paymaster 101-A and Lankart 57.

The land was pre-irrigated March 10 and had 3/4 pound Treflan applied April 1. All varieties were planted April 5. The Lankart variety emerged at least two weeks later than the others. The first irrigation was applied on May 29. Other irrigations were on June 25, July 15, July 31 and August 21. A total 56 pounds of nitrogen was applied throughout the growing season, 40 pounds in the June 25 irrigation and 16 pounds in the July 15 irrigation. Petiole analysis showed 14,800 p.p.m. NO_3 June 18, and 8,200 p.p.m. NO_3 June 24.