

On September 22, Diquat, a new herbicide, was flown on in an attempt to kill the cotton in preparation for the Stripper harvest. This was unsuccessful so an application of Folex was applied by air October 10. This was followed in a few days by rain and caused some regrowth to the cotton plants. A final application of Folex was applied four days before the Stripper demonstration but had little effect.

The condition of the cotton plants at the time of the demonstration was not satisfactory for proper stripping. The two Plains varieties had too many green leaves and bolls so an attempt to strip these was not made. The Delta Pine variety was in better shape, but it also had too many green leaves and green bolls for proper stripping.

This year's results indicate that if the Stripper is to be used successfully in this area, the cotton plants will have to be completely dead and all of the cotton open. This seems unlikely to happen until after a killing frost or perhaps with the use of a more potent desiccant. The plants may have desiccated better if the August irrigation had been withheld, although the late crop probably would have been reduced.

### Final County Stripper Cotton Project

(Henry Brubaker and Sam Stedman)

Allen McFadden - Cooperator

<u>Varieties</u>	<u>No. of Rows</u>	<u>Percentage</u>	<u>Grade</u>	<u>Lbs. of Lint</u>	<u>Lbs. of Lint per 16 Rows</u>
Deltapine 45	28	26.44	S.M. - 1 1/16	1402	301
DeKalb 302	16	25.78	S.M. - 1 1/32	580	580
Paymaster 101A	16	24.87	M. - 1 1/16	477	477
Blightmaster	16	24.37	M. - 1 1/16	492	492
Northern Star	16	25.70	M. - 1 1/16	579	579
Deltapine 45	32	23.61	M. - 2, S.M.-1	1497	749
Gregg	16	24.38	S.M. - 1 1/16	395	395
Deltapine Smooth leaf	24	25.87	S.M. - 1 1/32, 1 1/16, 1 3/32	1301	867

Planting was done by putting two rows of cotton on each bed.

Planting date - May 18.

Test was not replicated.

Hand Snapped - November 5, 1964

100 Units of Nitrogen.

Cultivated Once.

Insect Control - Sprayed 4 times.

### Stripper Harvest Observations

(Bill Larsen)

Stripper Harvest has been observed in a number of locations throughout Arizona. Early season harvest (October, November) was unsatisfactory as it was not possible

to properly dry out the cotton plant. Harvest after frost was more successful. All stripper harvest in 1964 was with the Hesston V-22 Stripper. Time studies were made on one machine operating in the Kansas Settlement area on December 15, and two machines West of Casa Grande on January 15. The Hesston Company is continuing to improve the performance of these machines. In this one-month period they had overcome many of the problems that were observed earlier. The machine observed on December 15 was doing a good job of stripping as far as the plant was concerned. However, it was being operated at a very low speed to try to eliminate plugging. This machine had a theoretical capacity of 1 1/4 acres per hour but was operating at an efficiency of only 34%, giving an actual capacity of .43 acres per hour. The down time on this machine was caused by belts falling off, plugging in the conveyors, chunks of mesquite root which plugged the augers, and uneven filling of the stripper basket.

Machines #2 and #3 were observed operating in a field west of Casa Grande. The stand was spotty (D.P.L.) and there was no top crop. Due to an anticipated poor yield they were stripping the cotton rather than using a spindle picker. We do not have final yield results but it appears that yields may run as high as 1 1/2 bales per acre. Plant type was typical Delta Pine with lots of low bolls. A check of losses gave the following results:

Low bolls not picked up by the machine	158 lb. S.C./Ac.
Ground loss other than whole bolls	62 lb. S.C./Ac.
Tage on the plant	<u>42 lb. S.C./Ac.</u>
TOTAL	262 lb. S.C./Ac.

At 33-1/3% turnout, which is probably satisfactory for these hand gleaned samples, the lint loss would be 78 pounds per acre, or approximately 10% of a 1 1/2 bale yield. These losses while quite high for a stripper are about 50% due to poor plant type. The low bolls not picked up by the stripper would also have been missed by a spindle picker.

#### Machine Capacity and Performance (January 15)

Machine #2 had a modified basket and cotton delivery chute which complete fill of the basket. It was also mounted on the smaller of the two tractors. Machine #1 did not have these modifications. The reliability of the belts and conveying system was much better than the machine observed on December 15.

	<u>Machine #2</u>	<u>Machine #3</u>
Stripping Speed	2.34 M.P.H.	2.01 M.P.H.
Theoretical Capacity	1.79 Ac/Hr	1.55 Ac/Hr
Field Efficiency	67.0%	74.4%
Actual Capacity	1.20 Ac/Hr	1.15 Ac/Hr
Non-productive Travel	11.1%	10.9%
Dumping Load	4.1%	2.7%
Cleaning Machine (mostly radiator on machine #2)	12.5%	4.5%
Plugging by Weeds at the Entrance to Stripping Rolls	5.4%	2.8%
Shaking Load Forward in Basket	0.0%	4.8%

A preliminary cost estimate was made for machines #2 and #3. We estimated that the stripper would cost approximately \$5,500, the small tractor \$4,000, and the large tractor \$6,000. We assumed that the tractors would be used 600 hours per year and that the stripper would be used on approximately 150 acres per year or 125 hours per year. The average cost per hour over the first five years of ownership is as follows:

	<u>Machine #2</u>	<u>Machine #3</u>
Cost for tractor	\$ 1.87/hr	\$ 2.57/hr
Cost for the stripper	9.26/hr	9.26/hr
Total for stripper and tractor	11.13/hr	11.83/hr
Cost per acre	9.28/ac	10.30/ac
At 1 1/2 bale yield	6.18/bale	6.87/bale

These machines will probably receive further modification which may improve their capacity and performance. However, at the present time this is the way that they were operating.

#### Summary of Extension Farm Cooperator Stripper Cotton Trials and Extension Observations

(Henry Brubaker)

Growing out of interest in "drilled cotton" and a desire to reduce the cost of producing cotton, much interest was generated for growing cotton to be harvested with strippers. Demonstrations were conducted in Yuma and Pinal Counties. Farmers Investment Company conducted private tests in Pinal and Pima Counties. Aims of all tests and demonstrations were to learn which varieties worked best and what the best cultural practices were. In general, stripper varieties from Texas and elsewhere were lower in yield than Deltapine, although Deltapine does not strip well. Varieties tested were Deltapine Smooth Leaf, Deltapine 45, Stoneville 7-A, Stoneville 213, Paymaster 54-B, Paymaster 101-A, Paymaster 111, Northern Star 5, Northern Star 4-11, Lockett 4789, Blightmaster, Lankart 57, Gregg 35, DeKalb 220, DeKalb 353, DeKalb 302, and TPSA Deltapine (Texas Planting Seed Association).

The biggest problems encountered in all tests were rank growth and green plants and bolls at picking time. Efforts to desiccate plants in order to pick before frost were unsuccessful. If stripper cotton is to work in Arizona, it will have to be grown with a minimum of stalk and a better desiccant will have to be found. In general, farmers did not reduce their costs enough to make stripper cotton worthwhile.

#### Arizona Cotton Harvest Almost Completely Mechanized

(Bill Larsen)

Cotton in Arizona has been mechanized almost completely. This mechanization includes not only mechanical harvest with a spindle type machine, but also the machine salvage of cotton from the ground. Results to date show that well over 95% of the cotton in Arizona was harvested mechanically. The cotton salvaged from the ground is of concern to many people throughout the state. It is fairly