

Minimum Tillage Comparison on Pima S-5 (1st Pick Only)*
 Evco Farms, Art Pacheco, Mgr., Marana - 1975

<u>Practice</u>	<u>Seed Cotton/Plot</u> (Pounds)	<u>Lint/Plot</u> (Pounds)	<u>Lint/Acre</u> (Pounds)
Minimum Tillage ^{1/}	459	168	701
Conventional Tillage ^{2/}	526	193	803

*Harvested - 11/4/75

<u>Minimum Tillage Practices^{1/}</u>	<u>Conventional Tillage Practices^{2/}</u>
Shred Stalks	Shred Stalks
Chisel	Disc 2X
Landplane	Plow
Furrow Out	Landplane
	Furrow Out

Equal portions of each field tested were subjected to the two different tillage systems. Each half was then divided into four areas from which a representative sample was harvested from each area.

The primary advantage of the minimum tillage is reduced energy use and less cost per acre. Results tend to suggest that minimum tillage has less influence on yield of short staple as compared to long staple.

Minimum tillage reduced tillage costs approximately \$10 per acre.

SINGLE HARVEST REDUCTION OF COSTS AND ENERGY USE

C.R. Farr

Single harvest operations in November and December have the advantage of reducing fuel and harvesting cost over traditional double harvest. This technique increases the seasonal capacity of spindle pickers and may often increase overall fiber quality by blending the main crop with late bolls of lower fiber length and micronaire.

In this comparison double harvesting produced only 19 lbs. more lint per acre than from single harvest (Table 1) while developing the following advantages:

1. Saving 35-40% machine time
2. Saving 35-40% required labor
3. Saving 30-35% of fuel required
4. Reduced machinery wear
5. Improved cotton fiber quality

First picking with conventional double harvest produced 100% middling grades compared to 88.8% middling grades from single harvest. However, second picking produced a lower grade of 146 lbs. of lint than the Strict Low Middling Plus Grade of 111 lbs. per acre with single harvest.

Second harvest produced 73 lbs. of lint per acre with an average staple length below 1-3/32 inch, whereas single harvest produced all 1-3/32-inch cotton (Table 2).

Grades and fiber quality of two additional fields in the area are included in Table 3 to illustrate the reduced grade, staple length, and micronaire in second picking during the 1975 season.

Table 1. Comparisons of Cotton Yield with Two Harvest Methods

Carl Weiler, Laveen, 1975		C.R. Farr, Ext. Agent, Agriculture	
<u>Harvest Method</u>	<u>Lbs. Seed Cotton/Acre</u>	<u>Percent Turnout</u>	<u>Lint-Lbs. per Acre</u>
<u>Double Harvest</u>			
First Pick 10/27/75	2520	32.24	812
Second Pick 12/6/75	445	32.70	146
Total			958
<u>Single Harvest 12/6/75</u>	2856	32.89	939

Table 2. Fiber Quality with Two Harvest Methods

<u>GRADES</u>					
<u>Double Harvest</u>			<u>Single Harvest</u>		
<u>Pick</u>	<u>Percent</u>	<u>Description</u>	<u>Pick</u>	<u>Percent</u>	<u>Description</u>
1st	100	Middling 1-3/32	-mike 5	1st	5.9 Middling 1-3/32-mike 4
2nd	25.0	SLM 1-3/32	-mike 4	1st	76.5 Middling 1-3/32-mike 5
2nd	25.0	SLM 1-3/32	-mike 5	1st	5.9 Middling 1-3/32-mike 6
2nd	25.0	SLM Lt. Spot 1-1/16-mike 4	4	1st	11.8 SLM+ 1-3/32-mike 5
2nd	25.0	SLM Lt. Spot 1-3/32-mike 5	5		

Table 3. Comparisons of Fiber Quality of Harvest Operations

<u>GRADES</u>		
Field B	First Pick	100% Middling
	Second Pick	100% SLM Lt. Spot
Field C	First Pick	75.8% Middling
	Second Pick	71.4% SLM
<u>STAPLE LENGTH</u>		
Field B	First Pick	92.9% 1-3/32"
	Second Pick	65.5% 1-1/16"
Field C	First Pick	77.7% 1-3/32"
	Second Pick	60.0% 1-1/16"
<u>MICRONAIRE</u>		
Field B	First Pick	70.0% Group 6
	Second Pick	87.5% Group 3
Field C	First Pick	65.1% Group 5
	Second Pick	80.5% Group 2