

SUMMARY OF AGRICULTURAL EXTENSION SERVICE  
ON-FARM VARIETY TEST DEMONSTRATIONS

Wayne E. Osborne, Extension Technician and  
Robert E. Dennis, Extension Agronomist

The on-farm cotton variety and related tests are conducted cooperatively by growers, University of Arizona Extension Service Agents and Specialists and commercial seed concerns. These tests provide on-farm yield and lint information for varieties commercially available to growers. Usually each test replication consists of four or more rows of the variety extending the full length of the grower's field. The center rows of each replication are harvested for yield.

Twelve on-farm cotton variety tests were completed in 1968 and the results are reported in this section of the cotton report. Results of other agricultural extension service on-farm tests are given in other sections of this report.

In most instances the weight of seed cotton for each replication in each test was obtained using a portable scale. The truck used to take the scales from farm to farm was supplied by the Arizona Cotton Planting Seed Distributors. Most of the seed for the 1968 on-farm cotton variety and other tests was supplied without charge by commercial seed companies or the Arizona Cotton Planting Seed Distributors. All of the fiber quality determinations were made by the Department of Agronomy of the University of Arizona. Ginning of all fiber samples was by Extension Service personnel.

Cochise County

Plants in replicated plots of nine different varieties were harvested every two weeks by hand beginning September 18 and continuing to November 29 in the Bill Hilburn test at Bowie, elevation 3750 feet. The objective of this test was to compare varieties and to determine the amount of mature cotton that was ready for harvest at each picking date. Quality determinations of the lint for each picking were also made. Data concerning yield and lint characteristics for each picking are given in another section of this report.

Safford Valley

There were three cotton variety tests in the Safford Valley, elevation 2900 feet. The objectives of these tests were to compare yield and quality characteristics between varieties. Two tests were located on the Lea Hunt farm and one on the Bob Colvin farm. One of the Hunt tests included Pima S-2, Pima S-3, Pima S-4 and Pima 126-1-1. The other Hunt test included Pima S-4 and Pima 126-1-1. Pima S-4 produced a higher yield per acre than any other entry in either test.

There were seven varieties in the Colvin test. Hopicala was the top producer with more than two bales per acre.

### Pima County

There were two tests in Pima County located on the Reyher and Evco farms near Marana, elevation 1800 feet. These tests were planned so as to provide data concerning yield, quality and price.

In the six-entry Reyher test, Deltapine 16 was the top producer both in yield and return per acre with Stoneville 7A ranking second.

The Pacheco (Evco Farms) test included six varieties. Hopicala was the top producer in yield and returns per acre.

The price per pound of lint, in both tests, ranged from 15 cents for ground cotton to slightly more than 25 cents per pound.

### Pinal County

There were three variety tests in Pinal County, elevation 1400 feet. Two of the tests are reported in this section of the cotton report. One of the tests was located on the Worth Bartlett farm in Coolidge. The others were on the Norm Pretzer farm in Eloy.

### Mohave County

Eight varieties were included in the Parish test near Bullhead City, elevation 450 feet. The highest producer was Deltapine 16 with 2036 pounds per acre followed by Acala SJ-1 and Coker 413.

### Yuma County

Results of the tests in Yuma County during 1968, as well as those obtained in other recent years, indicate that the southeastern varieties, under present market conditions, are the most profitable.

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AGRICULTURAL EXTENSION SERVICE VARIETY TESTS

Cochise County Test

Short and Long Staple

Bill Hilburn--Bowie

County Agent--Carmy Page

<u>Variety</u>	<u>Lint (Lbs./Acre)</u>
Hopicala	1616
Acala 1517D	1475
Stoneville 213	1475
Acala SJ-1	1437
Acala 1517V	1394
Stoneville 508	1318
Deltapine 16	1307
Stoneville 7A	1280
Del Cerro	1010

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Elevation: 3750 feet  
 Soil Type: Sandy clay loam  
 Previous Crops: 1967 cotton, 1966 sorghum, 1965 fallow  
 Irrigation: Watered up April 17. Additional irrigations every 10-14 days from May 1 to to September 15. (Total of 13 irrigations.)

Method of Irrigation: Middle row furrow  
 Fertilization: Pre-plant side-dressed with 100 pounds N applied as Uran. May side-dressed with 80 pounds of N applied as NH<sub>3</sub>. June side-dressed with 57 pounds of N applied as urea.

Weed Control: 1-1/2 pints Treflan per acre  
 Insect Control: May 10, Parathion 6-3, 1 1/2 pints per acre  
 May 20, Parathion 6-3, 1-1/2 pints per acre

Disease Control: July 1, 11, 21, sprayed with Zineb for rust  
 Defoliation: None  
 Crop Condition: Plants in good condition. Moderate skips due to cultural practices.

Planted: April 17, 1968  
 Harvested: The test plots were harvested every two weeks beginning September 18, 1968.

Plot Size: 12 rows; 36 inches wide; 1/4 mile long  
 Test Plots: Four plots two rows wide and 13.5 feet long were randomly selected from each variety.

Greenlee County

Short Staple

Glynn Wilson--Franklin County Agent--Ernest Foster

Variety	% Harvest First Pick	Total Lint Lbs. Per Acre	% Lint <sup>1</sup>	Length (UHM) <sup>1</sup>	Strength (Pressley 1/8") <sup>1</sup>	Micro- naire <sup>1</sup>
Hopicala	84	881	38.2 38.7	1.06 .94	3.53 3.43	3.31 2.67
Acala 1517D	86	790	36.3 37.3	1.16 .99	3.83 3.42	3.20 2.55
Deltapine 16	83	738	37.0 35.9	1.06 .92	3.10 2.98	3.11 2.51

<sup>1</sup> First number in the column for each variety is for first picking, and the second number is for second picking.

Elevation: 3600 Feet  
Soil Type: Clay loam  
Previous Crop: Cotton, 1967  
Planting Date: April 25, 1968  
Irrigation: Pre-irrigated February 15; irrigated up May 5, and four other irrigations beginning June 5 and ending on August 25.  
Source of Water: Well, fair quality  
Fertilization: None  
Weed Control: Five cultivations and two hoeings  
Insect Control: None  
Defoliation: Frost  
Harvested: First pick - 10/31/68  
Second pick - 11/26/68  
Remarks: Plants were short and late maturing  
Plot Size: 4 x 4 skip row, row width 40", row length 1260 feet.  
Test Plot: Hopicala and DPL-16 were replicated four times in strips of four rows each; rest of the field was 1517D and all rows were harvested. The two center rows were harvested and weighed in comparison with the outside rows. 20-50 pounds more seed cotton was produced on the outside rows

Graham CountyShort Staple

Bob Colvin--Eden

County Agent--John Sears

Variety	% Harvest First Pick	Total Lint (Lbs. Per Acre) <sup>1</sup>	% Lint <sup>1</sup>	Length (UHM) <sup>1</sup>	Strength (Pressley 1/8") <sup>1</sup>	Micronaire <sup>1</sup>
Hopicala	72	1255	37.8	1.13	3.42	3.45
			37.6	1.00	3.14	2.73
Acala 1517V	83	1162	37.7	1.14	3.56	3.35
			36.7	1.05	3.37	2.50
Deltapine 16	64	1047	36.4	1.08	2.95	3.15
			36.9	.98	2.91	2.50
Acala 1517D	76	1016	34.2	1.13	3.59	3.40
			34.9	1.08	3.47	2.60
Del Cerro	70	985	32.2	1.20	4.61	3.23
			33.2	1.13	3.93	2.68
Acala SJ-1	83	934	35.4	1.10	3.39	3.55
			35.4	1.04	3.23	2.70
Stroman 634	81	829	34.3	1.11	3.54	3.30
			35.3	1.00	3.34	2.53

<sup>1</sup> First number in each column for each variety is for first picking; second number is for second picking.

Elevation: 2900 Feet  
 Soil Type: Clay loam  
 Previous Crops: 1967 cotton, 1966 alfalfa, 1965 alfalfa  
 Planting Date: April 7, 1968  
 Planting Pattern: Solid  
 Irrigation: Pre-irrigated March 15 with seven additional irrigations. Last irrigation on August 23, row method  
 Source of Water: Canal and pump, quality good  
 Fertilization: 64 pounds of N applied as NH<sub>3</sub>  
 Weed Control: Spot spraying with DSMA (moderate damage to plants) Two hoeings  
 Insect Control: Thimet at planting. Five applications of parathion  
 Defoliation: None  
 Harvested: October 5 frost  
 First pick - 10/29/68  
 Second pick - 11/22/68  
 Remarks: Stand problems. Also moderate damage from "spray."

Long Staple

Lea Hunt, Thatcher

County Agent--John Sears

Variety	% Harvest First Pick	Total Lint (Lbs. Per Acre) <sup>1</sup>	% Lint <sup>1</sup>	Length (UHM) <sup>1</sup>	Strength (Pressley 1/8") <sup>1</sup>	Micronaire <sup>1</sup>
Pima S-4	84	942	39.9	1.29	4.61	3.80
			39.3	1.23	4.41	3.40
Pima 126-1-1	77	837	38.7	1.35	4.58	3.90
			38.8	1.22	4.21	3.48

<sup>1</sup> First number in each column for each variety is for first picking; second number for second picking.

Elevation: 2900 Feet  
 Soil Type: Sandy Clay loam  
 Previous Crops: 1967 diverted, 1966 cotton  
 Planting Date: April 15, 1968  
 Irrigation: Pre-irrigated March 1, irrigated six additional times beginning June 15, every other row  
 Source of Water: Canal, good quality  
 Fertilization: None  
 Weed Control: Treflan pre-plant  
 Insect Control: None  
 Defoliation: None  
 Harvest Dates: First pick - 10/28/68  
 Second pick - 11/23/68  
 Remarks: Considerable pink bollworm damage in second pick.  
 Plot Size: Four 38-inch rows replicated twice  
 Test Plot: Two inside rows, 690-feet long

Long Staple

Lea Hunt--Thatcher

County Agent--John Sears

Variety	% Harvest First Pick	Total Lint (Lbs. Per Acre)	% Lint <sup>1</sup>	Length (UHM) <sup>1</sup>	Strength (Pressley 1/8") <sup>1</sup>	Micronaire <sup>1</sup>
Pima S-4	69	916	38.4 37.2	1.35 1.25	4.81 4.43	3.75 3.25
Pima S-3	57	374	37.9 37.2	1.30 1.23	4.45 4.18	3.58 3.20
Pima 126-1-1	78	839	36.6 36.9	1.32 1.23	4.42 4.35	3.75 3.08
Pima S-2	59	762	38.6 38.6	1.33 1.20	4.76 4.24	3.95 3.20

<sup>1</sup> First number in each column for each variety is for first picking; second number is for second picking.

Elevation: 2900 Feet  
Soil Type: Clay loam  
Previous Crops: 1967 cotton, 1966 sorghum and barley  
Planting Date: April 15, 1968  
Irrigation: Pre-irrigated March 1, irrigated four additional times beginning June 15, every other row.  
Source of Water: Canal, good quality  
Fertilization: None  
Weed Control: Pre-plant Treflan, three hand hoeings  
Insect Control: None  
Defoliation: None  
Harvested: First Pick - 10/28/68  
Second Pick - 11/23/68  
Remarks: Considerable pink bollworm damage in second crop  
Plot Size: Row length 690 feet; row width 38 inches  
Test Area: Two randomly selected rows, two replications.

Pima County

Short Staple

Art Pacheco, Jr., Evco Farms--Marana

County Agent--James Armstrong

Variety	Lint (Lbs. Per Acre) <sup>1</sup>	Rank By Total Yield	% Lint <sup>1</sup>	Length <sup>1</sup> (UHM) <sup>4</sup>	Strength (Pressley 1/8") <sup>1</sup>	Micronaire <sup>1</sup>	Price Per <sup>1</sup> Lb. (Cents) <sup>2</sup>	Return Per Acre (Dollars)	Rank By Return
Coker 413	670	4	33.4 <sup>3</sup>	.97	3.04	3.65	24.21	194.96	4
	108		37.5 <sup>4</sup>	1.04	3.00	2.75	24.21		
	44						15.00		
Deltapine 16	632	5	35.4 <sup>3</sup>	.95	3.00	3.95	316@ 21.71	187.40	6
			37.2 <sup>4</sup>	1.02	3.07	3.00	23.40		
	140						15.00		
Hopicala	670	2	33.7 <sup>3</sup>	.99	3.32	4.00	24.21	203.43	2
	143		37.8 <sup>4</sup>	1.04	3.39	3.20	24.21		
	44						15.00		
Hopicala <sup>5</sup>	703	1	35.5 <sup>3</sup>	.99	3.37	4.35	352@ 24.21	207.62	1
			36.8 <sup>4</sup>	.95	3.09	3.20	351@ 23.51		
	142						23.86		
SJ-1	620	6	32.8 <sup>3</sup>	1.05	3.44	4.40	24.21	194.03	5
	161		38.6 <sup>4</sup>	1.00	2.84	3.70	24.21		
	33						15.00		
Stoneville 7A	699	3	35.4 <sup>3</sup>	1.00	2.80	3.35	24.14*	198.16	3
	97		39.1 <sup>4</sup>	.98	2.67	2.55	24.14*		
	40						15.00		
Stoneville 508	647	7	33.4 <sup>3</sup>		2.91	3.35	24.21	177.81	7
	67		35.2 <sup>4</sup>		3.09	3.09	24.21		
	33						15.00		
Deltapine 16 (N) <sup>6</sup>	747		35.9 <sup>3</sup>	.95	2.85	3.90	25.09	226.34	
	136		42.4 <sup>4</sup>	1.00		2.55	25.09		
	32						15.00		
Deltapine 16 (S) <sup>6</sup>	753		34.5 <sup>3</sup>	1.00	3.00	3.95	25.77	244.22	
	172		34.1 <sup>4</sup>	1.07		3.00	25.77		
	39						15.00		

<sup>1</sup> First figures in column are for first pick, second for second pick and third are for ground cotton.

<sup>2</sup> Prices with asterisk are actual prices received from sale of cotton and other prices are net government loan values.

<sup>3</sup> When two prices are listed for one variety, this indicates grade differences.

<sup>4</sup> Gin results

<sup>5</sup> University of Arizona Agronomy lab results

<sup>6</sup> Seed treated with hot water (39C)

<sup>6</sup> Not in actual test. It was observed that DPL-16 was yielding higher on both sides of this test area. An equal area of this was harvested for comparative purposes. There is no explanation why Deltapine 16 did so poorly in the test; the only known difference was seed source.



Art Pacheco, Jr., Evco Farms--Marana

Elevation: 2000 Feet  
Soil Type: Sandy clay loam  
Previous Crop: 1967 sorghum, 1966 cotton  
Planting Date: April 10, 1968  
Irrigation: Total 3.25 acre feet  
Source of Water: Cortaro Water Users Association, good quality  
Fertilization: 35 units N as  $\text{NH}_3$  in water. 49 units N as  
Uran 32.  
Defoliation: Sodium chlorate two gallons per acre  
Harvested: First Pick - 10/7/68  
Second Pick - 11/13/68 and 11/27/68  
Remarks: Severe problems with Verticillium wilt, Texas  
root rot, and Nematodes  
Plot Size: 16 - 40-inch rows, 1210 feet long

Harold Reyher--Marana

County Agent--James Armstrong

Variety	Lint (Lbs. Per Acre) <sup>1</sup>	Rank By Yield	Length (UHM) <sup>3</sup>	Strength (Pressley 1/8") <sup>3</sup>	Micronaire <sup>3</sup>	Price Per Lb. (Cents) <sup>2</sup>	Return Per Acre (Dollars)	Rank By Return
Coker 413	962 192	1154 3	1.10	2.89	3.50	22.25 19.20	250.91	4
Deltapine 16	926 324	1250 1	1.02	2.91	3.70	24.40 19.20	288.15	1
Hopicala	960	1129 5	1.05	3.17		752@ 24.40 376@ 21.50	254.79	3
Acala SJ-1	169 822	1048 6	1.10	3.30	4.05	524@ 22.25 523@ 21.50	219.70	6
Stoneville 7A	266 964	1192 2	1.00	2.85	4.00	17.65 24.40	279.00	2
Stoneville 508	228 989	1139 4	1.00	2.80	3.40	19.20 759@ 20.80 379@ 21.40	236.49	5
	150					19.20		

<sup>1</sup> First figures in column are for first pick; second are for second pick.

<sup>2</sup> Prices are net government loan value. When two prices are listed for one variety, this indicates grade differences.

<sup>3</sup> University of Arizona Agronomy lab results.

Elevation: 2000 Feet  
 Previous Crop: 1967 sorghum  
 Planting Date: April 15, 1968  
 Soil Type: Clay loam  
 Irrigation: 3.5 acre feet per acre  
 Source of Water: Cortaro Water Users Assn.,  
 good quality  
 Fertilization: 60 units of N applied as  
 21-0-0 per acre.  
 Weed Control: Karmex one pound per acre  
 layby. MSMA spot treated  
 Johnsongrass. Also culti-  
 vated four times.

Insect Control: Thimet at planting.  
 Three applications  
 Toxaphene plus Thiodan  
 Defoliation: Sodium chlorate  
 Harvested: First Pick 10/14/68  
 Second Pick 11/21/68  
 Remarks: Slight Verticillium  
 wilt problem  
 Plot Size: Eight rows 40" wide,  
 2,458 feet long

Pinal County

Short Staple

Worth Bartlett Farm--Coolidge County Agent--Samuel Stedman

First Pick Only

<u>Variety</u>	<u>Lint Yield (Lbs./Acre)</u>	<u>Grade</u>	<u>Length</u>	<u>Micronaire</u>
Stoneville 213	2036	SLM	1 3/32	4.9
Deltapine 16	2032	SLM LTS Pot	1 1/8	4.7
Hopicala	1814	SLM	1 1/8	4.3
Stoneville 508	1782	SLM	1 1/8	3.9

Norm Pretzer Farm--Elov County Agent--Samuel Stedman

<u>Variety</u>	<u>1st Pick Lbs./Acre</u>	<u>2nd Pick Lbs./Acre</u>	<u>Total Lint Lbs./Acre</u>
Deltapine 16	1244	141	1385
Coker 413	1026	51	1077
Stoneville 508	943	66	1009

First Pick: September 25, 1968

Mohave County

Short Staple

Eldon Parish--Bullhead City

County Agent--James McDougal

Variety	% Harvest First Pick	Total Lint (Lbs. Per Acre)	% Lint <sup>1/</sup>	Length (UHM)	Strength (Pressley 1/8")	Micronaire
Deltapine 16	81	2036	37.0 35.9	1.10	3.18	4.40
Acala SJ-1	87	1938	36.4 33.3	1.15	3.73	4.35
Coker 413	83	1851	36.0 34.4	1.09	3.20	3.95
Hopicala	78	1692	38.0 39.0	1.05	3.74	4.00
Imperial Acala	81	1551	38.0 33.8	1.10	3.56	4.10
Stoneville 7A	88	1532	36.8 35.9	1.10	2.66	4.50

<sup>1/</sup> First number in the column for each variety is for first picking and second number is for second picking.

Elevation: 450 feet  
Soil Type: Sandy loam  
Previous Crop: Cotton for the past two years  
Planting Date: April 25, 1968  
Irrigation: Pre-irrigation and six other irrigations, row method, total seven acre feet per acre.  
Source of Water: Well, good quality  
Fertilization: 200 units NH<sub>3</sub> in water  
Weed Control: None  
Insect Control: Three applications of insecticide for pink bollworm control.  
Defoliation: Sodium chlorate  
Harvested: First pick 11/13/68, second pick 1/11/69  
Plot Size: Two 38 inch rows, 2500 feet long  
Remarks: Field was very weedy. Test was non-replicated. Two other varieties were not reported in the results because of excessive weeds and extreme soil conditions which caused very low yields.

Yuma County

Short Staple

North Gila Valley

County Agent--James Hazlitt

Variety	% Harvest First Pick	Seed Cotton Total Per Acre (Lbs.)
Deltapine 16	86	6907
Stoneville 213	85	6812
Deltapine Smooth Leaf	84	6781
Deltapine 6137	78	6750
Deltapine 5826	83	6563
Arizona 6218	80	6562
McNair 6416	84	5594
Stoneville 508	84	5563
Arizona 6401	80	5500
T.H. 149	73	5438
Dunn 56C	76	5032
Coker 413	82	4750

Planted: March 11, 1968  
Harvested: First Pick 10/25/68  
Second Pick 11/14/68  
Planting Pattern: Solid Plant

Growers--Mohawk Gin--Roll

County Agent--James Hazlitt

Variety	Seed Cotton At Each Harvest Per Acre (Lbs.)		Seed Cotton Total Per Acre (Lbs.)
	Rep 1	Rep 2	
Deltapine 16	2978	3223	3100
Deltapine Smooth Leaf	2961	3033	2997
Stoneville 508	2972	2799	2885
Coker 413	2749	2755	2752
Imperial Acala	2649	2286	2468

Harvested: October 14, 1968  
Planting Pattern: Solid Plant

Only first pick figures available.

Oral Hunter--Salome

County Agent--James Hazlitt

Variety	Seed Cotton Lbs/Acre	% Lint	Lint Lbs/Acre
Deltapine 16	3780	34.4	1304
Deltapine Smooth Leaf	3820	31.9	1222
Acala 1517V	3570	32.3	1166
Imperial Acala	3530	32.0	1130
Stoneville 508	3580	31.1	1116
Coker	3430	32.3	1108
Pima S-4	2970	35.6	1060
Dunn 560	2930	31.8	934

Harvested: January 4, 1969

SHORT STAPLE VARIETY TESTS - 1968

Harris Cattle Co., Queen Creek  
Cliff Douglas, Mgr.

Agr. Agent-C.R.Farr  
Maricopa County

Variety	Lint Lbs. per Acre		
	<u>1st pick</u>	<u>2nd pick</u>	<u>Total</u>
DPL 16	1887	351	1976
Hopicala	1434	628	1593

Elevation: 1320 Feet  
 Soil Type: Gila silt loam  
               Gila fine sandy loam  
 No. Replications: 22 of each variety, 4 rows 660 ft. long  
 Planting Date: March 19  
 Planting Pattern: 2 x 2  
 No. Irrigations: 7  
 Final Irrigation Date: Aug. 14  
 No. Insecticide Applic.: 17  
 Weed Control: Cultivation, hand  
 Fertilization: 236 pounds N, NH<sub>3</sub> water run  
 Harvest Date: First pick 11/1  
               Second pick 12/7  
 Turnout: DPL 16 - 32.27  
            Hopicala - 31.20