

# Short Staple Variety Trials, Greenlee County, 1991

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## **Abstract**

*Fourteen acala and four delta varieties were tested in two separate field trials in Greenlee county in 1991. Yields at both sites were about 1000 pounds per acre (seed cotton yields) than the 1990 yields. Cool weather and wet grounds delayed planting one to two weeks compared with 1990. The highest yielding varieties, both acala and delta type, produced around 2300 pounds per acre of seed cotton. An experimental New Mexico acala, B510 and Stoneville 506 were the top varieties.*

## **Introduction**

Several new varieties were available that needed to be tested at 3500 to 3600 foot elevation. They included acalas from California, New Mexico and ChemBred and new delta-type varieties from Delta Pine, Stoneville and ChemBred. These variety trials are a continuation of the varietal testing that has taken place in Greenlee county over the past several years. One trial is reserved for cotton varieties that are of acala quality, the second trial was set up to evaluate the acalas against Delta varieties which would probably have higher micronaire values than the acalas.

## **Materials and Methods**

**Location 1:** Stan Jones Farm, Virden, NM  
Soil type: Pima sandy loam  
Elevation: 3600 feet  
Previous crop: Milo  
Planting date: 29 April 1991      Rate: 19 pounds per acre  
Herbicide: Treflan, preplant  
Fertilizer: 150 pounds of 18-46-0 per acre, preplant  
Irrigation: furrow irrigated, approximately 2.5 ac feet  
Insecticide: None  
Pix: None  
Defoliation: None  
Harvest: 19 November  
Plot size: Two 38 inch rows 1251 feet long  
Replications: Four, two

**Location 2:** Ray Tyler Farm, Duncan, AZ  
Soil type: Pima gravelly clay loam  
Elevation: 3575 feet

Previous crop: Cotton  
Planting date: 25 April 1991                      Rate: 17 pounds per acre  
Herbicide: Treflan and caparol  
Fertilizer:            300 pounds per acre of 16-20-0 preplant  
                          200 pounds per acre of  $\text{NH}_4\text{SO}_4$   
Irrigation: Furrow irrigated 5 times, approximately 2.5 ac feet  
Insecticide: None  
Pix: 1 pint  
Defoliation: Sodium chlorate  
Harvest: 27 November  
Plot size: Two 38 inch rows approximately 1700 feet long  
Replications: Four

Both trials were planted into moist beds using plate type planters and treated throughout the year by the farmers normal cultural practices. At harvest time, cotton from each plot was weighed separately using electronic weighing pads under cotton trailers. Samples were taken to determine quality and lint turnout. Stand counts and plant height measurements were also taken at harvest time. Both trials were harvested late, after the crops were terminated by hard frosts and little lint remained in the field to justify a second pick.

## Results and Discussion

Table 1 contains data from the trial on Stan Jones farm in Virden, NM. Because of space limitations the trial was divided into two portions, the main body of the trial had four replications and the remainder having only two. Because of natural field variation and the nature of the experimental design, it is impossible to say whether Acala B510 is a stronger variety than CB 1135 or 1517-91, but these cultivars were significantly better than the other varieties in their respective tests. We haven't tested the ChemBred hybrid before in the county and the results of this test look promising. PREMA, which yielded in the middle of the pack last year, did the same this year. The other two varieties from California, MAXXA and ROYALE, didn't yield as well as PREMA. In Cochise county (2) where yields were higher than last year, MAXXA, yielded higher than its two California brothers. The yields in Greenlee county were down considerably from 1990 (1) because of the weather, so further testing will be needed to verify yield capabilities under better weather conditions.

Table 2 contains the results of the study on the Tyler farm in Duncan. The hard frost that hit the entire high desert in the southeastern part of the state on the 29th of October, terminated the cotton. With the delayed harvests in both sites in Greenlee county, only one harvest was made, thus, no information is available to judge the relative maturity of the varieties. Plant heights were shorter than last year and the yields were also short. Stoneville 506 showed its strength in producing the best of the varieties under conditions on the Tyler field.

## References

1. Clark, Lee J. and Mike Schneider. 1991. Short Staple Variety Trials, Greenlee County, 1990. Cotton, A College of Agriculture Report, The University of Arizona, Tucson. Series P-87, pp.83-85.
2. Clark, Lee J. 1992. Short Staple Variety Trial, Cochise County, 1991. Cotton, A College of Agriculture Report, The University of Arizona, Tucson, AZ. (In this volume).

Table 1. Yield and crop characteristics of acala cotton varieties grown on the Stan Jones farm in Virden, 1991. The upper portion of the table is a four-rep trial, the bottom portion is a two-rep trial located at the south side of the larger trial.

Variety	SC <sup>1</sup> Yield	Plant <sup>2</sup> Height	Plant Population	Percent of 1517-88
CB 1135	2184 a	35.6 ab	43111 c	111.4
1517-91	2178 a	29.1 c	46041 c	111.1
1517-75	2027 b	38.1 a	50372 bc	103.4
PREMA	1999 b	31.4 c	50372 bc	102.0
1517-88	1960 b	38.0 a	65348 a	100.0
ROYALE	1780 c	32.0 bc	54910 b	90.8
MAXXA	1759 c	30.3 c	56952 b	89.7
1517-SR3	1676 c	32.3 bc	42431 c	85.5
Average	1945.4	33.3	51195	
LSD(05)	138.7	3.5	7253	
C.V.(%)	10.8	12.7	16.9	
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Acala B510	2284 A	37.0 A	47195 A	
1517-SR1	2165 B	36.3 A	53095 A	
1517-SR2	2115 B	35.5 A	47195 A	
1517-V	2112 B	40.5 A	54910 A	
Average	2169.0	37.3	50599	
LSD(05)	69.5	7.2	12141	
C.V.(%)	3.9	9.6	9.6	

1. Seed cotton yield in pounds per acre.
2. Plant height in inches.
3. Values followed the same letter are not significantly different at the 5% level of probability using the Duncan Multiple range test.

**Table 2. Yield and crop characteristics of acala cotton varieties grown on the Ray Tyler farm north of Duncan, 1991.**

Variety	SC <sup>1</sup> Yield	Plant <sup>2</sup> Height	Plant Population	Percent of 1517-88
STV 506	2326 a	25.5 e	49011 b	131.6
1517-77BR	2206 a	24.0 f	47876 b	124.8
CB 1135	2087 ab	24.0 f	36304 g	118.0
1517-91	1914 bc	22.4 f	44473 d	108.3
CB 219	1892 bcd	25.0 e	47876 e	107.0
STV 907	1876 bcd	28.0 d	56272 a	106.1
PREMA	1870 bcd	30.5 c	40842 e	105.8
Acala 6658	1854 bcd	32.4 b	35397 g	104.9
<b>1517-88</b>	<b>1768 cde</b>	<b>33.5 a</b>	<b>48103 b</b>	<b>100.0</b>
DP 5415	1631 cde	30.5 c	46288 c	92.2
MAXXA	1613 de	25.4 e	38800 f	91.2
ROYALE	1552 e	23.4 f	30859 h	87.8
Average	1882.0	27.0	43508	
LSD(05)	251.9	0.8	1407.6	
C.V.(%)	15.4	13.7	16.1	

1. Seed cotton yield in pounds per acre.
2. Plant height in inches.
3. Values followed the same letter are not significantly different at the 5% level of probability using the Duncan Multiple range test.