

## **PSC 57 PIMA, THE NEW YIELD LEADER FOR THE SAN JOAQUIN VALLEY**

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### **Abstract**

PSC 57 Pima is a new, high yielding Pima cotton variety for California's San Joaquin Valley. Over five years of testing by Phytogen at sixteen locations, PSC 57 yielded more than Pima S7 (the San Joaquin Valley Cotton Board standard Pima variety) by one hundred pounds of lint per acre (an increase of more than ten percent). Over three years of testing by the San Joaquin Valley Cotton Board at nine locations, PSC 57 yielded more than S7 by nearly two percent. PSC 57 fiber and spinning properties were superior to those of S7 with greatly reduced manufacturing waste. PSC 57 planting seed will be readily available in 1999.

### **Introduction**

PSC 57 Pima is a new cotton variety, developed for California's San Joaquin Valley by Phytogen Seed Company, LLC. It was approved for commercial release by the San Joaquin Valley Cotton Board in March, 1998.

PSC 57 is a cross between H439 and H424, two selections from Pima S6. To introduce PSC 57, results of yield and fiber quality comparisons will be discussed.

### **Materials and Methods**

Sixteen performance trails were conducted by Phytogen between 1994 and 1998. At each location, PSC 57 was compared to S7, the SJVCB standard Pima variety, in a randomized complete block design with four replications. Yield and fiber quality data were collected. Fiber properties were evaluated on individual instruments at Phytogen's fiber laboratory. In addition, yarn and processing properties of combed Ne 80's count yarns were determined for samples from two of the 1997 locations. These tests were performed at the International Textile Center in Lubbock, Texas.

PSC 57 (tested as PHY 57) was also evaluated by the San Joaquin Valley Cotton Board (SJVCB). A total of nine trials were conducted in 1995, 1996, and 1997. At each location, PSC 57 was compared to S7 in a randomized complete block design with four replications.

### **Results and Discussion**

Results of Phytogen's 1994 Pima Lines Tests are shown in Figure 1. PSC 57 yields were higher than those of S7 at all locations.

Results of Phytogen's 1995 Pima Preliminary Strains Tests are shown in Figure 2. PSC 57 yields were higher than those of S7 at one of two locations as well as over locations.

Results of Phytogen's 1996 Pima Advanced Strains Tests are shown in Figure 3. PSC 57 yields were higher than those of S7 at three out of five locations as well as over locations.

Results of Phytogen's 1997 Pima Advanced Strains Tests are shown in Figure 4. Yields of PSC 57 were higher than S7 at all locations.

Results of Phytogen's 1998 Pima Advanced Strains Tests are shown in Figure 5. Yields of PSC 57 were higher than S7 at all locations.

An over years yield comparison of PSC 57 and S7 grown in all Phytogen trials from 1994 to 1998 is shown in Figure 6 (16 trials total). The mean yield of PSC 57 was higher than S7 by 100 pounds of lint per acre (1073 Lbs./Ac. and 973 Lbs./Ac., respectively).

An over years yield comparison of PSC 57 and S7 tested in all SJVCB Pima trials from 1995 to 1997 is shown in Figure 7 (9 trials total) (Bassett, 1998). The mean yield of PSC 57 was higher than S7 by 19 pounds of lint per acre (1282 Lbs./Ac. and 1263 Lbs./Ac., respectively). In these same trials, PSC 57 yielded 83 Lbs./Ac. more than HTO, another commercially available Pima variety.

Fiber quality results are shown in Table 1. PSC 57 fiber exhibited significantly higher uniformity, elongation, and fiber toughness than S7.

Spinning properties are shown in Table 2. PSC 57 showed significantly better combed Ne 80's count yarn tenacity, elongation, break factor, and evenness, with significantly fewer thicks, thins, and neps. In addition, combing waste and total waste were significantly reduced in PSC 57 versus S7.

### **Summary**

PSC 57 is a high yielding Pima cotton variety characterized by superior fiber and spinning properties. Manufacturing waste is significantly lower than with S7. PSC 57 planting seed will be readily available in 1999.

## References

Bassett, D. M. 1998. San Joaquin Valley Cotton Board, 1997 Season, Pima Variety Test Results.

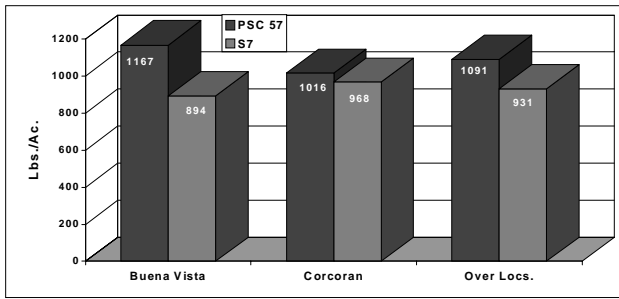


Figure 1. 1994 Phytogen Pima Lines Tests.

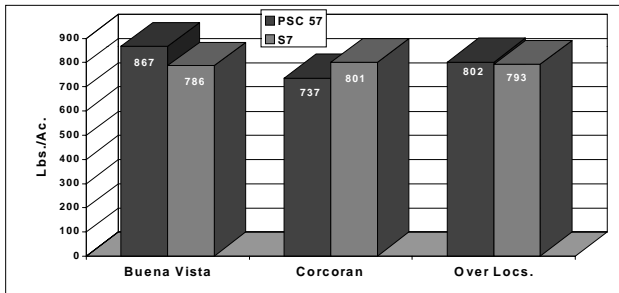


Figure 2. 1995 Phytogen Pima Preliminary Strains Tests.

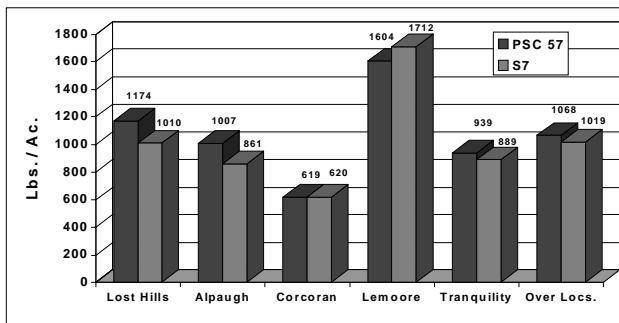


Figure 3. 1996 Phytogen Pima Advanced Strains Tests.

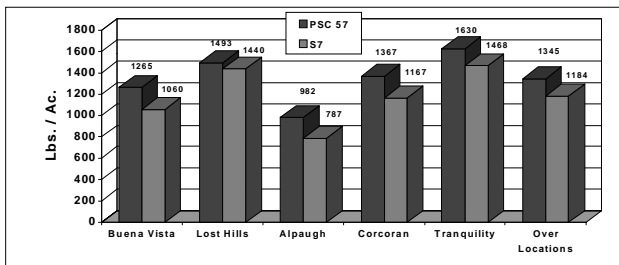


Figure 4. 1997 Phytogen Pima Advanced Strains Tests.

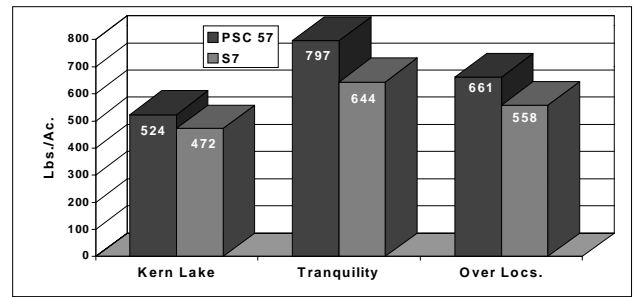


Figure 5. 1998 Phytogen Pima Advanced Strains Tests.

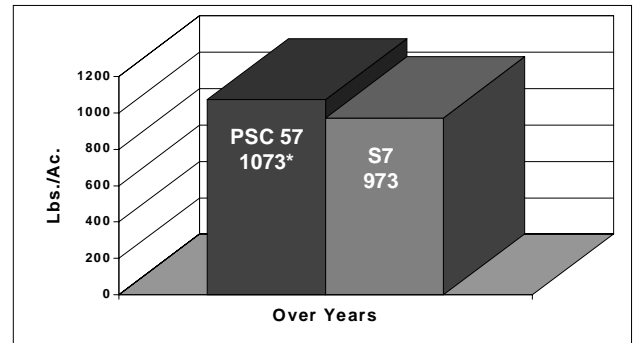


Figure 6. Phytogen Over Years Yield Comparison (16 Locations, 1994 to 1998).

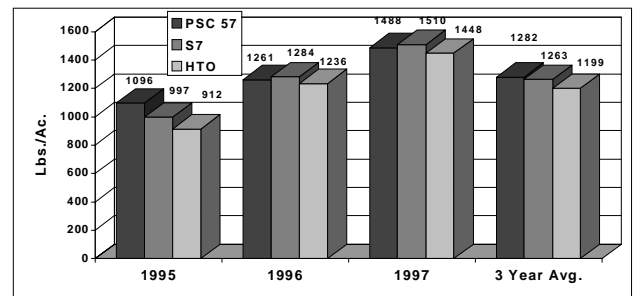


Figure 7. SJVCB Pima Variety Tests, Summary of Yields (9 Locations, 1995 to 1997).

Table 1. Fiber Quality Traits (Phytogen Lab, 14 Locations, 1994-97).

	S7	PSC 57
2.5% Span Length	1,409	1,412
Uniformity	48.3	49.4*
Strength T1 (g/tex)	30.8	30.5
Elongation	6.70	7.38*
Fiber Toughness (T1 X E1)/2	103.0	112.1*
Micronaire	3.77	3.67

\* Indicates a significant LSD value at alpha = .05.

Table 2. Spinning Properties (ITC Lab, 2 Locations, 1997).

Ne 80, Combed, Ring	S7	PSC 57
Tenacity (g/tex)	22.8	23.5*
Mean Strength (g)	170.9	173.9
Elongation (%)	4.87	5.55*
Break Factor	3673	3893*
Evenness (CV%)	17.8	16.8*
Thick Places / 1000 yds.	258	189*
Thin Places / 1000 yds.	214	118*
Neps / 1000 yds.	248	189*
Appearance Index	125	129

\* Indicates a significant LSD value at alpha = .05.