

Comparison of Pima S-6 and S-7 Cotton Varieties

Guide A-225

Shane T. Ball, Extension Agronomy Specialist
Bob Hutmacher, Extension Cotton Specialist,
University of California, Davis

Cooperative Extension Service
College of Agriculture and
Home Economics



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Pima S-6 and S-7 are extra-long staple (ELS) cottons that have been developed and released for commercial production in the United States. The predominant variety is S-6, which is grown on more than 50% of total Pima acreage.

Until recently, the USDA Pima Improvement Program was the sole source of “improved” Pima varieties, or varieties with improved yield potential and quality. The Pima variety S-7 was developed by ARS breeders at the university of Arizona, Maricopa Agriculture Center. Experiments in Arizona and California show that the major advantages of S-7 over S-6 are earlier maturity, greater heat tolerance, higher yields, and earliness at high elevations.

Pima S-7 was developed from an F5 selection from a cross between two experimental strains (#6614-91-9-3 and #6907-513-509-501). This means that S-7 contains about half its genetics from S-6, a quarter from S-4, and a quarter from P-28 (an experimental strain).

The Supima Association, a grower-supported organization, has improved promotional support and shipping efficiency of Pima varieties for distribution world-wide. The Supima Association works together with the U.S. Department of Agriculture, the Material Cotton Council, Cotton Council International, and Cotton Incorporated to provide technical information to support the promotion and marketing of U.S.-grown Pima varieties.

KEY FEATURES

Pima S-6

- A mid-season variety; begins fruiting low on the plant and continues fruiting throughout the season
- Leafy, with a taller plant structure than S-7
- Adapted to areas where plant height is limited
- Higher percent lint than S-7

Pima S-7

- An early season variety; begins fruiting low on the plant and continues fruiting throughout the season
- Matures 4 to 5 days earlier than S-6
- Longer, stronger fiber than S-6
- Excellent heat tolerance

Table 1. Lint yield for Pima S-6 and Pima S-7 from Pima regional tests (Arizona), 1987–1990.

Elevation	Pima S-6 lint yield* (lb/acre)	Pima S-7 lint yield* (lb/acre)	No. of tests
Low (below 1,500 ft)	1083 b	1195 a	11
Intermediate (1,500 ft to 2,500 ft)	915 b	1011 a	08
High (above 2,500 ft)	932 a	896 a	17

* For a given elevation, yield means followed by the same letter are not significantly different at the 0.05 level according to a Duncan's multiple range test.

Table 2. Boll, fiber, and spinning data for Pima S-6 and Pima S-7 from Pima regional tests, 1987–1990.

Trait	Pima S-6*	Pima S-7*	No. of tests
Grams/boll	3.16 a	3.15 a	36
Percent lint	39.50 a	38.60 b	36
Fiber/length			
2.5% span (in.)	1.34 b	1.36 a	36
50% span (in.)	0.65 a	0.66 a	36
Classer's Staple (1/32 in.)	45.70 a	46.00 a	06
T1 strength (mN/tex)	310.00 b	330.00 a	36
Micronaire (units)	3.99 a	3.94 b	36
Color			
Rd (% reflectance)	67.70 b	69.50 a	36
b (Hunter's b-yellowness)	11.30 a	11.00 b	36
Yarn strength			
22s count (mN/tex)	170.00 b	180.00 a	15
50s count combed (lb)	71.00 b	75.50 a	06
80s count combed (lb)	38.20 b	40.80 a	06
Yarn appearance (index)	95.00 a	97.00 a	06
Yarn imperfections—50s (no.)	174.00 a	157.00 a	06
Yarn imperfections—80s (no.)	332.00 a	331.00 a	06

* For a given trait, means followed by the same letter are not significantly different at the 0.05 level according to a Duncan's multiple range test.