



Field of Pima S-1 Cotton showing height and productiveness of the plants. At the University of Arizona farm at Tucson, 1954.

PROSPECTS FOR PIMA S-1 COTTON

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Lint yield per acre both in plot tests and in commercial fields, extending well over the entire Egyptian long-staple-cotton district of the Southwest indicates that Pima S-1 yields satisfactorily. Also, the spinning tests show that Pima S-1 can be used for spinning most of the fabrics for which Pima 32 and Egyptian Karnak are used. It is, therefore, believed that if yield and spinning quality can be maintained at levels which have been obtained up to the present time with Pima S-1, this variety will be able to compete with the best imported long staples.

This article sets forth the origin and both merits and limitations of Pima S-1 as seen now.

Yield Tests

The following table shows the lint yield in pounds per acre as an average of four years (1951-1954). (From data furnished by Dr. R. H. Peebles of the U.S. D.A.)

Location	Lint per acre in pounds	
	Pima S-1	Pima 32
Sacaton, Arizona	640	580
Mesa, Arizona	850	615
State College, New Mexico	535	384
Ysleta, Texas	778	712
Average	701	573
Average difference	128	
Percent excess of Pima S-1	22.3	

Spinning Tests

The following tabulation shows the results of a laboratory spinning test conducted by the United States Department of Agriculture Spinning Laboratory. The results are averages from samples grown at Brawley, Calif., Yuma, Ariz., Sacaton, Ariz., State College, N. M., and Ysleta, Texas. (From data furnished by Dr. R. H. Peebles of the U.S.D.A.)

	Skein Strength		Yarn App.	Comber Waste
	36's	60's		
Pima S-1	109.6	57.2	115	10.84
Pima 32	110.3	57.6	109	13.84

In skein strength, the two cottons are very similar. In yarn appearance, Pima S-1 is about 1/2 grade better than Pima 32. In comber waste, Pima S-1 is significantly less wasteful in the spinning process than Pima 32, due to a smaller amount of short fiber in Pima S-1.

In 1954, the National Cotton Council of America conducted a commercial spinning test with 11 spinning mills in the United States comparing Pima S-1 with Pima 32 and Egyptian-grown Karnak. In 1954 the Council summarized the results of this test as follows:

1. The processing efficiency of Pima S-1 was equal to that of Karnak and Pima 32, and Pima S-1 produced 1-2 percent less waste than Karnak from opening through combing.
2. Pima S-1 produced 25-50 percent less neps than Karnak when carded at the same rate.
3. For a given twist Pima S-1 consistently made a stronger yarn than Karnak with the amount of twist required to obtain maximum strength being approximately the same for all three varieties.
4. For a given draft, yarns made from Pima S-1 were consistently stronger than those made from Karnak when processed under the same conditions.
5. Pima S-1 yarns were consistently more uniform than Karnak or Pima 32 regardless of processing variables.
6. Regardless of twist or draft, yarns made from Pima S-1 exhibited a higher elongation than Karnak or Pima 32 when processed under the same conditions."

Origin

Pima S-1 originated as a single plant selection from crossing the following varieties:

Pima (original)

Stoneville 4 (upland)

Sea Island (later type, with low plant)

Tanguis, from Peru of South America.

Crossing was begun in 1934 and in 1947 a single plant selection was made which gave rise to the Pima S-1 variety. The population from which this single plant was selected was the result of six basic crosses between the original varieties and selected plants within the crosses, each of which had one or more desirable characters. The characters used as a basis of selection were low plant, productiveness, large well-opened bolls, medium length of lint, and higher lint percentage. After three years of testing at Tucson the selection was transferred to the United States Field Station at Sacaton, Arizona, for further testing and seed increase by the United States Department of Agriculture. At this time when it became apparent that the selection might have possibilities as a commercial variety it was given the name Pima S-1 in order to identify it with the Egyptian long staple cotton varieties, since "Pima" has become somewhat of a generic name for this class of cottons.