

Table 2. Average fiber properties from eight Pima Regional Tests, Arizona, 1978.

	Fiber span length			Fiber strength	Micronaire
	2.5%	50%	UR	T ₁	
Pima S-5	1.37	.72	52	30.9	3.84
P34	1.36	.74	55	32.6	4.06
P37	1.36	.72	53	32.7	4.06
P39	1.38	.73	53	30.8	4.08
P41	1.43	.75	52	32.4	3.62
P42	1.40	.74	53	31.3	3.84
E9	1.36	.71	52	31.8	3.88
E10	1.40	.73	52	31.0	3.77
E11	1.35	.72	53	30.9	3.99
E12	1.40	.75	53	31.5	3.80

Pima Cotton Genetics

E. L. Turcotte and Carl V. Feaster
 Research Genetist and Research Agronomist, respectively

The phenomenon of semigamy, discovered in Pima cotton, has become an effective tool for the production of haploid plants. Fifty-one chimeral plants were produced via semigamy in 1978 for selection of haploid branches of paternal tissue. These will be treated with colchicine for chromosome doubling. Twenty-eight haploids from four F₁ sources were doubled. Fifty-nine doubled haploids from five sources were evaluated in the field for production potential, boll and fiber properties. Eleven were judged to have good production potential. Seven doubled haploids produced via semigamy were grown in a performance test for yield, boll, and fiber property determinations and comparison with Pima S-5. Two doubled haploids yielded similar and five yielded less than Pima S-5. Boll and seed properties of the doubled haploids were generally within acceptable limits. Fiber lengths of all seven doubled haploids were shorter than Pima S-5. Two doubled haploids had higher, four similar, and one lower T₁ values compared with Pima S-5. For micronaire, one doubled haploid was coarser, one similar, and five finer than Pima S-5. These results support prior evidence that large numbers of doubled haploids must be screened to locate those few that combine adequate yield and fiber properties.

The transfer of naked seed (N₁) to Pima was completed. The transfer of four dominant and 12 recessive traits was continued. Among these are the potential economic traits nectariless, glandless, frego bract, and genetic-cytoplasmic male sterility.

Naked seed (N₁) was indicated to be linked with glandless seed. Thirty-two gene pairs were shown to be not linked. A dominant Pima male-sterile mutant was named Male sterile-11 (Ms₁₁). A leaf mutant found in Pima S-4 in 1975 was inherited as a monogenic recessive.

Seed of 98 *Gossypium barbadense* L. germplasm stocks were renewed. Most of these are short-day stocks from South America.