

Table 2. Average Fiber Properties from Six Pima Regional Tests, Arizona, 1975.

	Fiber span length			Fiber strength	Micronaire
	2.5%	50%	UR	T ₁	
Pima S-3	1.40	.70	50	28.5	3.65
Pima S-4	1.38	.70	51	30.4	3.85
Pima S-5	1.39	.71	51	31.2	3.86
P28	1.36	.71	52	30.8	3.78
P30	1.46	.73	50	31.1	3.91
P32	1.32	.70	53	32.3	3.93
P34	1.36	.72	53	32.0	4.12
P35	1.43	.74	52	32.1	3.93

PIMA COTTON GENETICS

E.L. Turcotte and Carl V. Feaster

The transfer of red plant color (R₁) to Pima is complete. Although showing poor yield potential, red Pima plants will be useful as a genetic marker. The transfer of several other genetic characters to Pima is a continuing process. Characters with potential economic value that are being transferred include frego bract, okra leaf, glandless, nectariless, and genetic and cytoplasmic male sterility.

Three of five single gene recessive Pima plant color mutants were found to be conditioned by the same gene, and 10 gene pairs were shown to be not linked. Two single gene dominant characters, a leaf mutant and a brown lint mutant, are similar to characters in Upland cotton, but they are conditioned by different genes.

Haploids and doubled haploids continued to be produced via semigamy. This procedure allows the development of pure lines from early generation materials, including F₁ plants. Segregation is stopped and combinations of characters are fixed as soon as possible after a cross. Fifteen doubled haploids were evaluated in the field for production potential, and ginning and fiber properties. Twelve haploids were doubled, and 76 haploids were isolated from four F₁ populations.

LONG-STAPLE COTTON BREEDING

H. Muramoto and W.E. Bryan

The objective of the long-staple cotton breeding program has been to determine the best method of breeding a variety using selection criteria such as high yields, good agronomic traits and superior spinning qualities.

The usual amount of segregating F₂ progenies were grown to provide materials for selection of desirable plants. Selections from a superior progeny, Experimental #5-1, were planted in an isolated plot for seed increase. The selections are early, productive, of a low plant type with fiber length greater than 1-3/8 inches, and a high Pressley Index in the range of 5.0 at 1/8 inch gauge. Flowering data were collected to plot the flowering curve of this progeny. Bulk harvest of progeny #5-1 were made so seed would be available for further testing in replicated strains tests under conventional and high plant populations cultures.

The incorporation of okra and superokra genes into all breeding population of Pima cotton is proceeding on schedule in our efforts to develop Pima cottons that will be suitable for high population cotton production systems.