

BREEDING RESEARCH WITH LONG STAPLE COTTON

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The objective of the long staple cotton breeding program has been to develop breeding methodology for the incorporation into one strain such desirable characteristics as high yields, good agronomic traits and superior spinning qualities.

Experimental 126-1 has shown considerable promise and potential. It was extensively tested in 1968. In a replicated test at Marana, preliminary results show that 126-1 is earlier maturing than Pima S-4, the commercial variety recommended for this elevation. Although there was no difference in total yield between 126-1 and Pima S-4, 69% of the cotton on 126-1 was harvested by the end of the second picking (Oct. 22, 1968) as compared to only 55% of the crop harvested for Pima S-4 on the same date.

Fiber and spinning data gathered over the last few years indicate that there is no difference in lint quality between Experimental 126-1 and Pima S-4. Yield data showed no difference in yield between Pima S-4 and Experimental 126-1 in the last two years.

Since it is desirable to have an earlier maturing cotton to combat the present Pink Bollworm problem, we are preparing a recommendation that Experimental 126-1 be considered for release as a commercial variety.

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HEXAPLOID COTTON

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Hexaploid cotton plants (n=78) were made by hybridizing an Australian wild cotton G. sturtianum (n=26) with American cultivated cottons G. hirsutum (n=52) and doubling the chromosome number of the sterile hybrid with colchicine.

The hexaploids now in the fourth generation of selection are doing very well. Fertility is improving and a sizeable planting of approximately two acres was made in 1968. Based on preliminary observation of general growth characteristics, the hexaploids seem to have more cold tolerance as compared to G. hirsutum or G. barbadense varieties of cotton.

In 1967 it was noticed that the hexaploids had a more diffused type of root system as compared to the normal tap root of tetraploid cottons. The hexaploid