HEXAPLOID COTTON

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Approximately two acres of hexaploid cotton plants were grown in 1970. The hexaploid population now includes germ plasm from the following: Acala 44-10-1, Hopicala, Super Okra, M-8, Del Cerro, F_4 materials from (Pima x M-8, Super Okra) and G. barbadense. The diploid parent is G. sturtianum, a wild species from Australia.

Selections in the hexaploid cotton population continued in 1970 with emphasis on fertility, which has been constantly improving, as evidenced by the selection of several productive plants. Cytological studies of second and third generation plants from the original colchicine treated plants showed that chromosome pairing in the third generation population was significantly greater than in the second generation.

Several plantings of hexaploid cotton have been made in fields heavily infested with Phymatotrichum omnivorum to test the diffused type of root system against this root rot disease organism. The tests at the Mesa field station and Marana showed the same type of dramatic results as in 1969. We have pictorial evidence showing the check rows dead from root rot, and brown in color; the hexaploid in adjacent rows, green and alive.

A sample of hexaploid cotton lint was sent to the USDA Cotton Spinning Laboratory at College Station, Texas for a standard spinning test. Tests on 22's and 50's yarns were requested but due to the short staple length of the hexaploid fibers, it was not possible to spin 50 count yarns. The highest count the laboratory was able to spin was 36's, and they did it without any difficulties, considering the staple length was only 7/8 inch.

The results of the test on 22's showed that it had good strength, equal to the standard short staple cotton varieties, and comparable in most other respects. This is very encouraging at this stage of the development of the hexaploid cotton.