in fiber strength of these two classes of plants were significant at the 0.01 level of probability. At the time that bolls began to open, plants in the rows with G. anomalum cytoplasm appeared shorter than those with G. hirsutum cytoplasm. The F values obtained

Discussion And Conclusions

The 1963 results for the D2 247 male-sterility material suggest that its male-sterility was associated with the production of a strain of senescent anthocyanins. These data raised the question of whether increased strength determined by genes linked with sterility, or does it result from a pleiotropic effect which produces sterility in anthers and females? The reciprocal hybrids with G. anomalum cytoplasm were grown in 1965 to see if such populations would produce any plants with strikingly high fiber strength. These progenies from five partially sterile plants. Even plants were far more fertile than the "partially sterile" plants with G. anomalum cytoplasm, those with sterile anthers and nearly-sterile flowers. Their classification as "fertile" plants showed five plants had high T1 values. Cultivars with normally high fiber strength only in their male-sterility classification as "partially sterile" plants favors interpretation of these data that the same physiological mechanism produces male sterility and high fiber strength.

Since this experiment was begun, a similar association between cytoplasmically controlled male sterility and fiber strength has been observed in experimental strains of cotton. 'Bobshoaw Hi.-Linter,' 'Del Cerro 169' differ strikingly from Stoneville D2 247 in plant and fiber properties. However, the introgressive genes from G. anomalum which produce male sterility increase T1 values in these varieties. Association between fiber strength and male sterility appeared in progenies from the crossing crosses: several strains of Acalypha decumbens; Deltapine 15, Deltapine Fox 4/9, Deltapine Smooth Leaf, Stoneville 7, and Stoneville 3202.

These data suggest that cytoplasmically controlled male sterility has little effect on properties of most varieties of Upland cotton. Strikingly high fiber strength in segregating populations from interspecific gene transfer programs should be checked for association between male sterility.

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