## HYBRID COTTON - POTENTIALS AND PROGRESS

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Interested cotton growers need to be alerted to the new in cotton research. Development of a hybrid cotton production system is progressing and made the following advances in 1973: (The program is much too preliminary and small at present to be statistically documented as to comparative performance.)

1. Increased environmentally neutral male steriles of two maturity groups--mid and early season.
2. Verified seed production feasibility by producing approximately 1,000 lbs/acre.
3. Initiated a program of transferring fertility restorer genes to lines or varieties that have potential use for heterosis in the $F_1$ (hybrid) generation.
4. Developed further information on insect management to secure necessary cross-pollination.

The cotton industry may ask "Why a hybrid anyway?" Some nice easy answers to this question are available depending on your point of view. The answers are:

1. If a grower wants to specialize as a seed producer, Arizona has the highest yield per acre of quality seed of any location in the United States and hybrid seed will be more valuable than presently produced commercial variety seed.
2. If a grower wishes to produce lint, heterosis or increased yields of 16% above Deltapine 16 have been recorded by hybrids (Mississippi Delta data).
3. If a disease problem is reducing the income, and resistance happens to be due to dominant genes, then a disease resistant hybrid can be "tailor made" for the problem much simpler than a variety can be developed.
4. The hybrid is usually earlier than either parent. The maturity date may be advanced (made earlier) by 15 days by choice of parents.
5. Etc.

## CYTOGENETIC STUDIES WITH THE DUPLICATE FACTOR LOCI $lp_1lp_2$ AND TELOCENTRICS FOR CHROMOSOMES 1 AND 15

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This study was discussed last year and is a continuation of the study of the linkage of the $lp_1lp_2$ duplicate loci with telocentrics of chromosomes 1 and 15. Previous results indicated that the $lp_1$ locus is located in the long arm of chromosome 1. Since chromosomes 1 and 15 are homoeologous, these data suggest that the $lp_2$ locus should be located in the long arm of chromosome 15. Crosses were made in 1972 between $lp_1lp_2$ and the telocentric for the long arm of chromosome 15 to develop stocks for the mapping of $lp_2$ in this chromosome. Cytological analysis this year revealed that the cross was unsuccessful in that the telocentric was not recovered. The cross was made again this year in order to continue the study.