

## COTTON PLANT CELL CULTURE

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The objectives of this project are to make an in-depth study of cells and tissue culture of the cotton plants for plant breeding purposes. Once nutritional needs for growth and differentiation are determined, an attempt will be made to fuse cotton plant cells with plant cells from different species, genera, and families. Research on manipulation of the hybrid cells with hormones and growth regulators to cause them to proliferate and eventually to differentiate into plantlets will be carried out. If successful, this approach will add a new tool to plant breeding which will bypass the normal sexual stage in plant reproduction.

Research on this project started with attempts to develop techniques in aseptic cultures of plant tissues. Results have been good. Callus tissues have been grown from cotton plants by first soaking the explant materials in a 25% solution of commercial chlorox for an hour and then placing them in a modified White's media containing 2,4-D and Chloromycetin. Cell growth in this media has been good, and callus tissues have been grown, transferred several times and kept alive for over six months.

Plans are now under way to grow callus tissues of the 26 different species of Gossypium for morphological comparison, examination and study.