

root system showed a large number of lateral roots with a small tap root as compared to the normal heavy tap root with few lateral roots of the tetraploid cotton varieties. Extrapolating from these data, an extensive planting of hexaploids was made on a field heavily infested with Texas Root Rot organism Phymatotrichum omnivorum in 1968 to test the hypothesis that this type of root system will survive root rot infection. Preliminary observations of the hexaploids on the Phymatotrichum infested field seem to indicate that the diffused root system may be the answer to overcoming the root rot problem. Many normal looking plants were found which upon uprooting, showed the tap root dead with the lateral roots sustaining the plants. More extensive plantings on fields heavily infested with Phymatotrichum are planned for next year.

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COTTON PLANT CELLS 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 plant; such as nutritional needs, the fusion of plant cells of different species, genera, and families, and to manipulate the hybrid cells causing them to proliferate and eventually to differentiate into plantlets, thus adding a new tool for plant breeding which bypasses the normal sexual stage in plant reproduction.

To start this new project, an extensive remodeling of Room 101B in the Agriculture Building into a cell Culture Laboratory has been going on since the beginning of the fiscal year.

No experiments have been conducted to date, because the laboratory is not yet completely remodeled. It is difficult to do any work in tissue or cell culture without aseptic conditions. The laboratory was designed to provide this condition to facilitate cell culture work. The time allocated to this project has been devoted to planning future experiments, the acquisition and building of equipment and literature search.

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