

Facilitating Breeding Cotton for Reniform Nematode

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We have selected germplasm that shows significant resistance to reniform nematode resistance, and developed F2 populations of crosses of these lines with commercial varieties. We now have developed F3 lines derived from F2 individuals that will be tested for reniform nematode resistance as a means of assessing the resistance of the F2 individuals from which they were derived. Such a lengthy measure is required because of difficulties in reliably evaluating F2 individual plants. This effort has been ongoing using previous funding.

Much of our effort during this year focused on developing extraction techniques for total RNA from cotton root tissue and on establishing the timing of when we would expect gene expression to change during nematode infection if resistance genes were being expressed. We have produced root viewing chambers that allow us to observe cotton plant roots during nematode application. Subsequently, we are trying to establish exactly when we should look at samples to determine whether plants are expressing resistance determinants. We expect to begin analysis of samples early in 2008.