

**IDENTIFICATION OF RFLP LOCI LINKED TO RESISTANCE TO
MELOIDOGYNE INCOGNITA AND *ROTYLENCHULUS RENIFORMIS***

**D.T. Silvey, K. Ripple, C.W. Smith, and J.L. Starr
Texas A&M University
College Station, TX**

Presently, no known single germplasm has resistance to both *Meloidogyne incognita* and *Rotylenchulus reniformis*, the two nematodes causing the greatest economic loss on cotton. *Gossypium barbadense* (Tx110) is resistant to *R. reniformis* and *Gossypium hirsutum* (M315-RNR) is resistant *M. incognita*. Resistance to each nematode species in the F₁ generation of an M315-RNR x Tx110 cross were identical to the resistance of the parents and were inherited as dominant traits. Segregation of resistance to *R. reniformis* in the F₂ individuals indicates resistance was inherited as a quantitative trait that is controlled by multiple genes. Segregation of resistance to *M. incognita* in the F₂ individuals indicates resistance was inherited as two genes. Development of a marker-assisted selection (MAS) system for resistance to both *M. incognita* and *R. reniformis* would increase the efficiency of breeding. A RFLP map has been developed based upon progeny from a cross between *G. hirsutum* and *G. barbadense*. One hundred and ninety-two of the available 566 RFLP loci of this genetic map were screened using bulk segregant analysis (BSA). Twenty-one RFLP loci were found to be tentatively linked to resistance to either *M. incognita* or *R. reniformis* and were screened subsequently against the segregating F₂ individuals. To date, 2 RFLP loci have been found <30 cM and therefore linked to resistance for *M. incognita*. Additional RFLP loci will be screened for linkage to loci for resistance to each nematode species.