

1843 QTLs conferring root architecture in an interspecific *Gossypium hirsutum* x *Gossypium barbadense* population

Dr. Peng W. Chee , University of Georgia, Tifton, GA
Mr. Muhammad Babar , University of Georgia, Tifton, GA
Mr. Sajid Rahman , University of Georgia, Tifton, GA
Dr. Xinlian Shen , University of Georgia, Tifton, GA

Root characteristics can be important in determining the response of plant to drought. Studies in rice (*Oryza sativa* L) have shown that root length, number of roots, and root density in in the 20 to 40 cm soil layer were positively correlated with drought tolerance. Therefore genetic modification of rooting system may lead to more drought tolerant cotton. This experiment was designed to evaluate root traits in interspecific *Gossypium hirsutum* x *Gossypium barbadense* F₂ population. Root length, fresh root weight, dry root weight, lateral root numbers, Plant height and root shoot ratio were measured in green house conditions. All measured traits were significantly and positively correlated. 186 primer pairs distributed across the whole genome were selected. So far 70 SSR markers were used to find the QTLs for root morphology. Analysis was performed using Mapmaker version 3.0b. Two QTLs were identified for Root length on chromosome 9, by using single marker analysis seven QTLs for Tap root length, 12 for root weight and 12 for lateral root numbers were find to be significant at $p \leq 0.05$.