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CONFIRMATION OF A FIBER LENGTH QTL ON CHROMOSOME 1 OF COTTON

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Abstract

Earlier analysis of a backcross-self mapping population derived from a cross between *Gossypium hirsutum cv* 'Tamcot2111' and *Gossypium barbadense* 'Pima S6' resulted in the identification of a number of QTLs for fiber quality. A significant fiber length QTL was located on the chromosome 1 linked to RFLP markers PGH377 and A1485. Three plants which bear a recombination event in this QTL interval were selected to develop three BC_3F_3 populations. SSR markers near RFLP markers PGH377 and A1485 on Chromosome 1 were used to detect recombination breakpoints. All populations were genotyped with SSR markers between two breakpoints BNL1350 and JESPR56, resulting in 8 recombinants identified. Composite interval mapping showed that the QTL for fiber length on chromosome 1 explained from 10.8 to 43.1% of phenotypic variation in different populations based on four environments. Further fine mapping indicated this QTL to be located in the 1.5 cM interval flanked by markers BNL2921 and JESPR56.