QTL Mapping of Low Temperature on Germination rate of Rice [PDF]

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摘 要：To investigate the low temperature on germination capacity (LTG) a double haploid rice (DH) population with 198 lines derived from anther culture of F1 hybrid with indica line Zhenshan 97B and a perennial japonica line AAV002863 was used to construct a linkage map with 140 SSR markers. The germination rate in Zhenshan 97B and AAV002863 was 79.7% and 30.1%, while in DH population it ranged from 0 to 100% at 15℃ after 6 days. Quantitative trait loci (QTLs) controlling low temperature germinability were identified on chromosomes 3 and 10. The percentage of observed phenotypic variance attributed to qLTG-3 and qLTG-10 was 12.6% and 12.9%, respectively. Allele from Zhenshan 97B increased the LTG at qLTG-3 region, while allele from AAV002863 increased the LTG at qLTG-10 region. One pair of epistatic interaction was detected between loci on chromosomes 3 and 10. The main-effect of QTL on chromosome 10 was also involved in epistatic interaction.

关键词：rice; low temperature germinability; quantitative trait locus
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