

The Effects of Genetic, Environmental Interaction in Quantitative Trait Loci Analysis

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Abstract

Crop traits are affected by genotype, environment, and the interactions between genotype and environment. The genetic factors can be divided into three effects of the additive, dominance and epistasis. Quantitative traits include many polygenes, so the sympathetic effect is even more significant, therefore makes the analysis and mapping of QTLs difficult.

The researchers found that the impact of epistasis and genetic x environmental sympathetic role is very obvious. Some QTLs may perform and be detected in a particular environment. Therefore, in addition to focus on the main effect of the QTL, the researchers should pay attention to interaction effects by way of experimental design, and try to gather sufficient environmental information through a specific analysis method or under certain circumstances. Consequently, selection can be effectively controlled and the accuracy of QTL mapping can be improved.

Key words : quantitative trait loci(QTL), molecular genetic marker, epistasis, interaction

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