

Lowering Grain Amylose Content in Backcross Offsprings of indica Rice Variety 057 by Molecular Marker-Assisted Selection [PDF]

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摘要: To lower the amylose content (AC) of the indica rice restorer line 057 with high AC, backcrosses were made respectively by using four indica varieties (R367, 91499, Yanhui 559, Hui 527) as low AC donor parents and 057 as the recurrent parent. A molecular marker (PCR-Acc I) was used to identify the genotypes (GG, TT and GT) of the waxy (Wx) gene. Plants with GT genotype were selected and used as female parent and crossed with 057 to advance generation. The ACs of rice grains harvested from plants with different Wx genotypes were measured and compared to analyze the efficiency of marker-assisted selection. The ACs of the rice grain, harvested from the plants of Wx genotypes GG, GT and TT, were higher than 20%, in the range of 17.7–28.5%, and less than 18%, respectively. The PCR-Acc I marker could be used for efficiently lowering the AC of 057 through backcrossing, and there were some influence of parental genetic background on the AC of rice grains with the same Wx genotype.

关键词: molecular marker-assisted selection; indica rice; amylose content; grain quality

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