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分子标记辅助选择改良武运粳8号的条纹叶枯病抗性

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Improving the Resistance of Wuyunjing 8 to Rice Stripe Virus via Molecular Marker-Assisted Selection

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摘要 本研究旨在改良武运粳8号的条纹叶枯病抗性。2004年，在扬州对江苏省1981—2002年间审定的25个迟熟中粳品种进行产量鉴定，从中筛选出直立穗高产品种武运粳8号作为条纹叶枯病抗性改良的受体亲本。利用抗条纹叶枯病品种葵风为供体亲本，通过杂交和回交，同时利用4个与条纹叶枯病抗性基因紧密连锁的分子标记STS11-31、STS11-71、STS11-19和STS11-43进行辅助选择，至2008年正季，共计获得 70个BC_3F_5以及115个BC_4F_4抗条纹叶枯病的稳定株系。经回交后代农艺性状、产量性状、品质性状和抗性的系统鉴定，从中筛选出10个BC_4F_5株系和2个BC_3F_6株系，这些株系综合性状与武运粳8号已十分相近，保持了武运粳8号的丰产性和优质，明显提高了条纹叶枯病的抗性。

关键词： 粳稻 条纹叶枯病 抗性 改良 分子标记辅助选择

Abstract: In this study, a molecular marker-assisted selection (MAS) strategy was used to improve Wuyunjing 8's resistance to rice stripe virus. The Wuyunjing 8 with high yield and erect head selected from 25 late-maturing varieties was used as accepter, and the variety Kuifeng with resistance to rice stripe virus as the donor. Four STS (sequence-tagged site) primers STS11-31, STS11-7, STS11-19, and STS11-43 anchoring the resistance genes were used for assisted selection in the backcross progenies. To 2008, seventy lines in BC_3F_5 and one hundred and fifteen lines of BC_4F_4 with stable agronomic traits were obtained with the result of molecular analysis. By appraising agronomic traits, yield , quality and resistance in backcross progenies, teen lines from BC_4F_5 and two lines from BC_3F_6, which all carried disease-resistant genes and were similar to Wuyunjing 8 on the integrated traits, were selected. These lines retain the characteristics of high yield and good quality of Wuyunjing 8 and have been prominently improved in resistance to rice stripe virus.

Keywords: Japonica Rice stripe virus Resistance Improvement Molecular marker-assisted selection

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