

农学—研究报告

不同地理来源水稻品种的SSR分子标记遗传相似性分析

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摘要:

为了评价云南水稻品种与国内外水稻品种间的遗传相似性, 利用48个SSR分子标记对90个来自9个不同国家的水稻品种进行遗传相似性分析, 结果共检测到269个等位基因(Na), 平均每个SSR标记检测到5.604个, 变幅为3~10; 共检测到159.775个有效等位基因(Ne), 平均为3.329, 变幅为1.578~6.090; 每个SSR标记的多态性信息含量(PIC)变幅为0.366~0.836, 平均为0.661。90个水稻品种间的遗传相似系数(GS)变幅为0.021~0.875, 平均为0.328。90个品种在相似系数0.212处分为籼、粳两亚种类群; 聚类树形图能划分品种的地理来源; 亚种内, 粳型品种较籼型品种的遗传相似度高。云南粳稻育成品种的遗传相似性较高, 云南水稻地方品种的遗传多样性较高, 应加强对云南水稻地方品种的有效保护和籼粳分化等研究。

关键词: 分析

Analysis of Genetic Similarity Based on SSR Markers of the Rice Varieties from Different Geographic Regions

Abstract:

The study was conducted to evaluate the genetic similarity between the major commercial and the landraces rice varieties in Yunnan and the rice varieties from different geographic regions. The genetic similarity and cluster of 90 accessions of tested rice variety from 9 countries were analyzed using 48 SSR markers. The results showed that totally 269 numbers of allele (Na) were detected among these tested rice varieties with the average number of alleles per pair of primers was 5.604, with a range from 3 to 10. Totally 159.775 effective number of alleles (Ne) were detected with the average number of effects per pair of primers was 3.329, with a range from 1.578 to 6.090. The average value of locus polymorphism information content (PIC) was 0.661, with a range from 0.366 to 0.836. The range of genetic similar index among tested rice varieties from different countries was from 0.021 to 0.875, with the average of 0.328. Cluster analysis results showed that 90 tested varieties could be distinguished as indica and japonica at the similarity coefficient level of 0.212. Cluster analysis could be classified better into groups according to geographical regions also. The genetic similarity of japonica was higher than that of indica among the subspecies. On the basis of the above data, the genetic diversity of the landraces was higher, but the genetic similarity was higher among the improved japonica rice varieties from Yunnan province. It is suggested that more attention should be paid to both conservation of rice landraces as well as to the study of differentiation between *Oryza sativa indica* and *japonica* subspecies in Yunnan province.

Keywords: analysis

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