

研究论文

抗青枯病花生种质的遗传多样性

姜慧芳^{1, 2}, 廖伯寿², 任小平², 雷永², 傅廷栋¹, Mace E³, Crouch J H³

1华中农业大学植物科学技术学院, 湖北武汉430070 2中国农业科学院油料作物研究所, 湖北武汉430062 3International Crops Research Institute for the Semi-Arid Tropics, Patancheru 502324, India

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摘要 以栽培种花生2个亚种4个植物学类型的31份对青枯病具有不同抗性的种质为材料, 通过SSR和AFLP技术分析了其DNA多样性, 并与通过形态和种子品质性状揭示的表型多样性进行了比较。结果表明, 不同类型的抗青枯病花生品种之间存在丰富的DNA多样性, SSR揭示的品种间遗传距离大于AFLP揭示的品种间遗传距离, 基于二者的聚类分析结果趋势一致, 结合花生的植物学类型、地理来源和系谱分析, 以SSR的聚类结果与表型性状的聚类结果更为吻合。感病优质高产品种“中花5号”与密枝亚种的普通型和龙生型的抗病材料的差异很大, 与育种中被广泛利用的抗源“协抗青”和“台山三粒肉”的差异相对较小, 与“远杂9102”的差异更小。

关键词 花生 抗青枯病种质 DNA多样性 SSR AFLP 形态多样性

分类号 S565

Genetic Diversity Assessment in Peanut Genotypes with Bacterial Wilt Resistance

JIANG Hui-Fang^{1 2}, LIAO Bo-Shou², REN Xiao-Ping², LEI Yong², FU Ting-Dong¹, Mace E³, Crouch J H³

1Plant Science and Technology Colleague, Huazhong Agricultural University, Wuhan 430070, Hubei; 2Oil Crops Research Institute, Chinese Academy of Agricultural Sciences, Wuhan 430062, Hubei, China; 3International Crops Research Institute for the Semi-Arid Tropics, Patancheru 502324, India

Abstract Bacterial wilt disease is a serious threat to peanut production in China. Understanding the genetic diversity in peanut genotypes with bacterial wilt resistance and enhancing the germplasm resources are helpful for peanut breeding for disease resistance. In this study, the DNA polymorphism among 31 genotypes with various bacterial wilt resistance including 4 botanical types from 2 subspecies of cultivated peanut were assessed by SSR and AFLP analysis. Polymorphism in morphological characters and seed chemical composition were also analyzed. The results indicated that there was enough polymorphism in the peanut genotypes with bacterial wilt resistance based on SSR and AFLP analysis. The SSR-based genetic distance was bigger than the AFLP-based genetic distance among the 31 genotypes. But the cluster based on SSR data was very similar to that based on AFLP data. Considering the botanical type, origin and pedigree of the genotypes used in the study, the cluster based on SSR data was conformed with that based on morphological and seed quality characters. However, there were a few differences between the cluster through AFLP approach and that through morphological and seed quality characters. The distances between the high yielding varieties with bacterial wilt susceptibility “Zhonghua 5” and the genotypes of Var. Virginia and Hirsuta were big relatively. But the distances between “Zhonghua 5” and “Yuanza 9102” as well as the two donors used widely “Xiekangqing” and “Tanshan Sanlirou” were small.

Key words Peanut Germplasm with bacterial wilt resistance DNA polymorphism SSR AFLP morphological polymorphism

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