

研究论文

利用RFLP和SSR标记划分玉米自交系杂种优势群的研究

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摘要 利用RFLP和SSR标记对29个玉米自交系进行杂种优势群划分, 筛选出56个多态性RFLP探针酶组合, 66对多态性SSR引物, 分别在供试材料中检测到187个和232个等位基因变异。两种方法比较表明, SSR标记的平均多态性信息量(PIC, 0.54)高于RFLP(0.42); 但对供试材料的遗传多样性评价基本一致, 平均遗传相似系数(GS)分别为0.64和0.62。综合RFLP和SSR分析结果进行聚类分析, 将供试材料划分为四平头, 旅大红骨, LSC, BSSS和PA五个类群, 划分结果与系谱分析基本一致, 并把系谱来源不清的种质划分到相应的杂种优势群。其中PN群的确认, 进一步完善了我国玉米种质杂种优势群的基本框架, 为育种实践提供了有价值的信息。

关键词 [玉米](#) [RFLP](#) [SSR](#) [遗传相似系数](#) [杂种优势群](#)

分类号 [S513](#)

Heterotic Grouping of Maize Inbred Lines Using RFLP and SSR Markers

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Abstract Five heterotic groups were determined among 29 maize inbred lines using RFLP and SSR markers. A total of 56 polymorphic probe enzyme combinations and 66 polymorphic SSR primers were identified among the inbred lines, which produced 187 and 232 alleles respectively. Mean polymorphism information content (PIC) for RFLPs(0.42) was lower than that for SSRs(0.54), but mean genetic similarity (GS) were similar (0.62 & 0.64). The five heterotic groups based on both RFLPs and SSRs were Sipingtou, Luda Red cob, LSC, BSSS, and PA groups. They were consistent with the grouping based on the available pedigree data. Moreover, inbreds with unknown pedigree were assigned to the established heterotic groups. The identification of PA group provided a valuable guidance for maize hybrid breeding.

Key words [Maize\(Zea mays L.\)](#) [RFLPs \(Restriction Fragment Length Polymorphisms\)](#) [SSRs\(Simple Sequence Repeat\)](#) [Genetic similarity](#) [Heterotic groups](#)

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