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论文

中国滇蔗茅种质资源遗传多样性的AFLP分析

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摘要：

利用10对AFLP引物对来自国家甘蔗资源圃的41份滇蔗茅(*Erianthus rockii*)无性系进行扩增, 获得860个片段, 多态性条带629个, 多态性条带比率0.73, 特异片段54个。遗传相似性系数、UPGMA聚类和主效应分析表明, 在相似系数0.52处做切割线，毛轴野古草、斑茅和滇蔗茅无性系分为3个类群；在相似系数0.715处做切割线时, 又将41份滇蔗茅无性系划分为3个大类群, 云滇07/23独自形成A类群, 鉴于其叶鞘背毛，有待做进一步的分析；B类群3份无性系, 主要来自云南西南部高海拔地区；C类群37份无性系, 其中30份来自云南西南方向的保山、德宏地区, 其他地区7份；在相似系数0.738处做切割时, 将C类群37份无性系划分为4个亚类群, 亚类群的划分反映出明显的地域分布规律, 来自同一地区的无性系多聚为一类；在相似系数0.765处做切割可将C4亚类群划分为4个亚类群(C4-1, C4-2, C4-3, C4-4), 其中C4-3亚类群中云滇07/9/1与云滇99/4分子聚类最为相似, 可作为复份材料保存；C4-3亚类群在相似系数0.773处切割又可以分为3个分支类群, 以上分析反映出同一地区无性系之间具有丰富的遗传变异；主效应分析反映的属间、种间、无性系之间的亲缘关系与分子聚类分析结果一致；由此可见, 丰富的地理生态条件造就了滇蔗茅丰富的遗传多样性和明显的地域性分布规律。

关键词： 滇蔗茅 AFLP 遗传多样性

Genetic Diversity Analysis for Germplasm of *Erianthus rockii* in China

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Abstract:

Erianthus rockii is the most important wild resource in sugarcane germplasm, which mainly distributes in Yunnan Province. To well utilize the germplasm in breeding program, it is necessary to understand its genetic background. In this research, 41 clones from national nursery of sugarcane germ were amplified with 10 informative AFLP primers. In total, 860 bands were detected, 629 of which were polymorphic, 36 of which were specific bands, and rate of polymorphic bands was 0.73. The results of genetic similarity coefficients, UPGMA cluster, and principal component analysis showed that 41 sugarcane clones were divided into three groups at 0.715 of genetic similarity coefficient:Yundian 07/23 was only grouped into group A and should be further identified due to its back hair on the sheath different from others, group B included three sugarcane clones from high altitude area, group C included 37 sugarcane clones, containing of 30 from southwest of Yunnan, and 7 from other region. Groups C was divided into 4 sub-groups at 0.738 of genetic similarity coefficient, and the cluster relation was obviouslyreflected the geographic distribution of the clones.Sub-group C4 was divided into 4 sub-sub-groups at 0.765 of genetic similarity coefficient. Yundian07/9/1 and Yundian99/4 in sub-sub-group C4-3 were the most similar, indicating that two clones were duplicate. Sub-sub-group C4-3 included three branches according to 0.773 of genetic similarity coefficient. Principal component analysis for all clones indicated same result obtained from genetic similarity coefficients analysis. Therefore, complex geographical ecological environment is important factor to the genetic diversity and geographical distribution of *E. rockii* clones.

Keywords: *Erianthus rockii* AFLP marker Genetic diversity

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