

研究论文

利用SSR标记评价普通菜豆种质遗传多样性

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摘要 利用36对SSR引物对332份国内普通菜豆、16份国外普通菜豆和29份野生菜豆的遗传多样性进行了分析, 等位变异数和多样性指数的计算结果显示, 3种生态型普通菜豆遗传多样性由大到小的顺序为国内普通菜豆、野生菜豆和国外普通菜豆; 我国贵州、云南、黑龙江等省普通菜豆的遗传多样性较为丰富。基于SSR数据, 对377份普通菜豆种质资源进行聚类分析, 结果聚为6组, 其中29份野生菜豆聚到第1组群, 与其他样品无任何交叉; 国外16份材料中的11份与我国25份材料聚在第6组, 说明国内外普通菜豆的遗传关系要比二者同野生菜豆的遗传关系近。

关键词 [遗传多样性](#) [SSR分子标记](#) [普通菜豆](#)

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The Genetic Diversity Assessment of Common Bean Germplasm Resources by Using SSR Markers

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Abstract 332 Chinese common bean, 16 alien common bean and 29 wild bean germplasm resources have been evaluated by using SSR markers. Genetic diversity of germplasm resources consists of genetic diversity indexes and average genetic richness. The results of the number of alleles showed that the average genetic richness of Chinese common bean germplasm resources was higher than that of wild common bean and the average genetic richness of wild common bean was higher than that of alien common bean germplasm resources. The results of genetic diversity indexes expressed by Shannon-weaver index corresponded to results defined by the average genetic richness. Both results confirmed that the genetic diversity of Chinese common bean germplasm resources was higher than that of wild common bean and the genetic diversity of wild common bean was higher than that of alien common bean germplasm resources. The results revealed by the number of alleles and Shannon-weaver index of different province's common bean germplasm resources showed that there was a higher genetic diversity for the common bean germplasm resources from Guizhou, Yunnan and Heilongjiang provinces while lower genetic diversity from Hebei and Liaoning province. Based on the SSR data, 377 accessions were clustered into 6 groups. 29 accessions of wild common bean germplasm resources were clustered into the first group with low similarity coefficient of 0.341 which had no any other type of common bean germplasm resources and 11 of 16 alien common bean accessions and 25 Chinese common bean accessions were clustered into the sixth group. The second, third, fourth and fifth group included 108, 105, 83 and 17 accessions respectively. The second group had high similarity coefficient of 0.525 while the third, fourth, fifth and sixth group had moderate level of similarity coefficient which was 0.434, 0.497, 0.472 and 0.467, respectively. It is suggested that the genetic relation of Chinese and alien common bean is closer than that each of them with wild common bean, with the usands of years' evolution and domestication, the genetic diversity of common bean has been improved largely and Guizhou province became possibly the secondary origin center of common bean.

Key words [Genetic diversity](#) [SSR molecular marker](#) [Common bean](#)

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