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首页 | 期刊介绍 | 编委会 | 投稿指南 | 期刊订阅 | 下载中心 | 留言板 | 联系我们　　　　English

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利用SRAP标记分析我国甜菜三大产区骨干材料的遗传多样性

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Analysis of Genetic Diversity of Major Sugar Beet Varieties from Three Regions of China with SRAP Markers

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摘要 利用SRAP分子标记, 选用甜菜中SRAP的88对引物组合分别对4个经济性状差异较大的代表性品系(高产型、高产低糖抗丛根病型、标准型、中产高糖抗褐斑病型)进行扩增，筛选出有效引物组合33对。采用筛选的33对引物检测全国三大产区的241份甜菜材料及9份外国材料，扩增到719条带，其中多态性条带459条，多态性条带的比率平均为63.8%。利用MEGA3.1软件中的Compute over-all mean计算，组内品种间平均遗传距离为0.4165，平均遗传相似系数为0.6593。遗传相似系数平均值为外国品种(0.7528) >单胚品系(0.6945)>多胚四倍体品系(0.6816)>多胚二倍体品系(0.6612)。利用MEGA3.1软件，在遗传距离0.20处，将供试材料分为4大类群。结果表明，我国三大产区供试材料遗传多样性丰富，其中东北产区优于华北与西北产区。利用POPGEN32软件将供试材料与外国品种分为两类，表明我国材料与外国品种的遗传基础存在较大差异。

关键词： 甜菜　 SRAP标记　 种质资源　 遗传多样性

Abstract： Shortage ofsugar beet germlasm resources results in the lag in researches of breeding and molecular biology. It is necessary to analyze the major varieties from three major production regions of China. Eighty-eight primer pairs were used to amplify the genomic DNA from leaves of four types of sugar beet varieties with different economic traits, which contain high yield type; high yield, low sugar and Rhizomania resistant type; standard type; medium yield, high sugar and anti-brown spot type, and 33 of which were obtained to be with availability. Two hundred and forty-one varieties from three major regions of China and nine varieties from abroad were detected with 33 primer pairs of SRAP markers. A total of 719 unambiguous bands were obtained, 459 of which were polymorphic. The average ratio of polymorphic bands was 63.8%. Compute over-all mean showed that genetic distance was 0.4165, genetic similarity among varieties was 0.6593, the genetic similarities were 0.7528 among foreign varieties, 0.6945 among monogerm varieties, 0.6816 among polygerm tetraploid varieties, and 0.6612 among polygerm diploid varieties. A total of 250 varieties were divided into four cluster groups based on cluster analysis by MEGA3.1 (at intercept of 0.2). Each genepool from three major region showed the highest. The varieties from China and abroad were classified into two different groups by POPGEN32. This indicated definite difference in the genetic background between foreign and native varieties.s of sugar beet production in China showed high level of genetic diversity, of which the Northeast genepool

Keywords： Sugar beet　 SRAP marker　 Germplasm resource　 Genetic diversity

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