

研究论文

棉花耐盐性的双列杂交分析

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摘要 根据Hayman的方法, 对6个耐盐性不同的棉花品种(系)及其15个半双列杂交组合的F₁、F₂代的平均盐害级别进行了双列杂交分析, 结果表明, 耐盐和盐敏感品种的一般配合力效应差异达极显著水平, 耐盐×盐敏感组合的特殊配合力普遍低于盐敏感×盐敏感、耐盐×耐盐组合。因此, 棉花耐盐育种以配制耐盐×盐敏感组合为最佳。棉花耐盐遗传参数估计说明, 棉花的耐盐性存在着加性和显性效应, 以加性效应为主, 耐盐性呈不完全显性, 受一对主效基因控制。F₁和F₂代的广义遗传力接近, F₂代的狭义遗传力高于F₁代, 且狭义遗传力较高。因而, 在F₂代选择改良棉花的耐盐性是可能的。

关键词 [陆地棉](#) [耐盐性](#) [双列杂交](#) [配合力](#)

分类号 [S562](#)

A Diallel Analysis of Salt Tolerance in Upland Cotton

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Abstract The 3 salt tolerance varieties and 3 salt sensitivity varieties were used as parents to generate F₁、F₂ form a half diallel cross. It was employed to investigate the inheritance of salt tolerance by using Hayman's diallel cross analysis. The results suggested that the general combining ability (GCA) was highly significant difference between salt tolerance and salt sensitive varieties. The specific combining ability (SCA) of R×S crosses were significantly lower than those of S×S crosses or R×R crosses. It was suggested that R×S cross were more suitable for salt tolerance breeding. Estimate of genetic parameters for salt tolerance showed that both additive and dominant effects appeared to be important for the expression of variation under salt stress, but the effect of gene with additive properties was more pronounced. The salt tolerance was determined by one incomplete dominant gene. Broad heritability of F₁ generation was as much as that of F₂, but sense heritability of F₂ was higher than that of F₁. Estimates of h_N for salt tolerance were higher; suggesting that rapid improvement in salinity tolerance is possible using high selection pressures in F₂ population.

Key words [Gossypium hirsutum](#) [Salt tolerance](#) [Diallel analysis](#) [Combining ability](#)

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