

研究论文

水稻苗期耐盐性遗传的世代平均数分析

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摘要 以耐盐品种Pokkali和盐敏感品种Peta为亲本配成一套9家系材料, 分别用60和100 mol/m³NaCl盐渍营养液对其4周龄秧苗持续处理4周后考察死叶级别和地上部鲜干重比值的世代平均数。多元回归分析表明, 2项指标都存在显著的遗传、盐浓度和遗传×盐浓度效应。其中遗传效应由基因加性、显性或加性×加性分量构成, 遗传×盐浓度效应含显性与盐浓度和显性×显性与盐浓度2种互作分量。研究认为: 基因加性效应是水稻苗期最重要和最稳定的遗传基础;盐胁迫强度的变化主要影响杂合位点的非加性效应。

关键词 [水稻](#) [耐盐性](#) [遗传](#) [世代平均数](#)

分类号

Analysis of Generation Means for the Inheritance of Salt Tolerance in Rice Seedlings

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Abstract Two sets of four-week-old seedlings of a nine-family materials, including two parents Pokkali and Peta (tolerant and susceptible to salinity, respectively) and their F1 to F3, B1, B2, B1s and B2s, were subjected to 60 and 100 mol/m³ NaCl salinized nutrient solutions, respectively, for four weeks. Ranking of dead leaves and shoot fresh/dry ratio for single plant were survived as salt-tolerance indices. Analysis of multiple regression revealed that the generation means for both indices could be divided into three groups of significant components, genotype, salinity and genotype×salinity interaction effects. The first group consisted of predominantly additive and dominance effects for both indices and additive X additive interaction effect for shoot fresh/dry ratio, and the third contained dominance X salinity and (dominance X dominance)X salinity interaction effects. The results suggested that the gene additive effect was the most important and comparatively stable component contributing to the tolerance of rice seedlings and that the changes of salinity levels principally affected the expression of genetic effects within on between heterozygous loci.

Key words [Oryza sativa L.](#) [Salt tolerance](#) [Inheritance](#) [Generation means](#)

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