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Title: Analysis for Genetic Effect and Heterosis of Agronomic Traits in Soybean under Different Ecological Environments

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摘要: 以不同生态区具有代表性的6个大豆品种为材料，按照NCII遗传交配设计（3×3），配置9个杂交组合。采用加性-显性与环境互作遗传模型及统计分析方法，分析不同生态环境下大豆农艺性状的遗传效应和杂种优势。结果表明：（1）F2代各农艺性状均以显性效应为主，环境对各性状后代选择和杂种优势利用有不同程度的影响；（2）各性状的普通广义遗传率均达到显著水平以上，单株粒重的普通广义遗传率最高，更适合在高世代选择，分枝数、单株荚数的互作广义遗传率达到极显著水平；（3）百粒重在各环境条件下杂种优势相对较稳定，在哈尔滨各性状表现明显的杂种优势，产量相关性状表现一定的杂种优势，形态性状群体超亲优势不明显。

Abstract: Six soybean varieties from different ecological region were selected and made 9 hybrid combinations according to NC II mating design.Genetic effect and heterosis of several agronomic traits under different ecological environments were analyzed by the models of genetic effects and genotype×environment interaction for additive-dominant epitasis.The results showed as follows(i)Dominant effect of all researched agronomic traits were significant,selecting and using heterosis of them were affected by environment to a certain extent.(ii) Broadsense heritability (BSH) were significant over 0.05 level for all tested traits.Seed weight per plant had highest BSH,which was suitable for selection in higher generation.The interaction of BSH between branch number and pods per plant were significant at 0.01 level.(iii)Heterosis of 100-seed weight was more stable than other traits in different environments.Heterosis of tested traits in Harbin were more obvious than the other three sites.Yield-related traits exhibited certain heterosis,the high-parent heterosis for configuration traits was not obvious.

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