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### 套作大豆农艺性状与产量的关系研究

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摘要: 通过模拟“玉米-大豆”带状套作, 分析了133份大豆材料的农艺性状与产量的关系。结果表明: 参试大豆材料表型性状的变异系数为 6.44%~52.49%, 各性状平均遗传多样性指数达到1.929 3, 说明参试大豆材料存在比较丰富的表型多样性。相关分析表明, 产量与主茎节数、有效分枝数、单株荚数、每荚粒数、分枝粒重、分枝粒重占比、营养生长期、生育期呈极显著正相关关系。多元线性逐步回归得到7个与产量呈极显著的农艺性状, 正效应因子排序为: 每荚粒数>分枝粒重>百粒重>主茎节数>单株荚数>营养生长期, 负效应因子为株高。对这7个农艺性状的通径分析表明, 综合效应排名为: 分枝粒重>单株荚数>主茎节数>营养生长期>每荚粒数>株高>百粒重。根据主成分得分并借助权重计算的综合得分把133份大豆材料聚类成4类, 其中第IV类大豆分枝数、单株荚数、每荚粒数和主茎节数较多, 营养生长期和生育期较长, 株高适中, 百粒重较小, 底荚较高, 适宜在套作模式中推广。

Abstract: A field experiment was conducted on 133 soybean germplasms by growing under shade (simulated the relay strip intercropping system) to analyze the relationship between agronomic traits and yield of 133 soybean germplasms. The results showed that: the coefficient of variation in phenotypic traits was between 6.44%-52.49% and the average Shannon' index was 1.929 3, which illustrated that the germplasms had a relatively rich morphological diversity. Correlation analysis showed that the yield was significant positive correlated with number of nodes on main stem, effective branch number, pods per plant, seeds per pod, branch seed weight, branch seed weight ratio, vegetative growth period and growth period. Multiple linear stepwise regression showed that the yield was significant positive correlated with seven agronomic characters, ranking of positive effect factor as follows: seeds per pod > branch seed weight >100-seed weight > number of nodes on main stem > pods per plant > vegetative growth period, negative effect factor was plant height. Path analysis showed that ranking of comprehensive effect to yield as follow: branch seed weight > pods per plant > number of nodes on main stem > vegetative growth period > seeds per pod > plant height >100-seed weight. According to the principal component score and the weight calculation of this composite score, 133 soybean varieties were clustered into four categories. The most suitable category for relay strip intercropping expressed more effective branch, more pods per plant, more seeds per pod, more nodes on main stem, longer vegetative growth period and growth period, moderate plant height, lower 100-seed weight, and higher bottom pod. Therefore, soybean varieties showing those traits can be selected in relay strip intercropping.

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