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摘要: 以黄淮地区具有代表性的4个野生大豆居群为研究试材,对百粒重、生育期、荚果长、荚果宽、株高、每荚粒数、分枝数、茸毛色、主茎、粒色、萌发时间、叶形12个重要农艺性状进行系统比较分析,运用变异系数、多重比较和巢式设计分析了居群间和居群内的表型变异;应用相关分析揭示了表型性状间及其与地理、气候因子间的相关性以及表型变异的地理格局;并且运用主成分分析、非加权配对算数平均分(UPGMA)聚类分析进行了居群分类。结果表明:居群间的变异远大于居群内的变异,居群分化较大,百粒重与纬度显著正相关、生育期与纬度显著负相关,粒色与经度、年降水量显著相关,其它9个性状没有特别明显的相关关系;表型性状的欧氏距离与地理距离相关不显著。百粒重、荚果长、荚果宽、茸毛色、叶形5个表型性状指标是造成表型差异的主要形态性状。分枝数与百粒重呈显著负相关,荚果宽与每荚粒数、萌发时间呈显著相关水平。利用群体间欧氏距离表明,在欧氏距离4.67处可以将居群分为3类,在欧氏距离5.12处可以将居群分为2类。

Abstract: A set of 114 *Glycine soja* covering 4 populations of Huang-Huai were selected to study the phenotype variability and relationships. Twelve morphological characteristics such as 100-seed weight, maturity, pod length, pod width, plant height, seeds number per pod, branch number, pubescence color, main stem, seed coat color, germination time, leaf shape were discussed by comparing and analyzing with the methods of nest design, multi-comparison, related analysis and hierarchical cluster analysis. The results indicated that there were significant differences in phenotypic variation among/within populations. In different individuals, simpson index ranged from 0.220 5 to 0.951 2, Shannon-Weaver index ranged from 0.067 7 to 3.591 6, and the F value varying from 0.53 to 18.68. In different individuals, the variation coefficient of seed colour was 68.93%, while the variation coefficient of maturity was only 5.52%. Most phenotypic traits were significantly correlated. 100-seed weight and maturity were significantly positive correlated with latitude, the correlation coefficient were respectively 0.984* and 0.929*. Seed color was significantly correlated with longitude and annual precipitation (0.981* and 0.968*). It also showed that there was no significant correlation of *Glycine soja* between phenotypic characteristics and geographic distance. 100-seed weight, pod length, pod width, pubescence color and leaf shape were the main morphological characters of phenotypic differences. The Huang-Huai populations could be divided into three groups according to the UPGMA cluster analysis when the euclidean distance was 4.67 and two groups when the euclidean distance was 5.12. Phenotypic variation within populations was greatly smaller than that between populations. Compared to other characters, the stability of seed was higher than that of other traits.

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