Czech Journal of GENETICS AND PLANT BREEDING

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Czech J. Genet. Plant Breed.

M., Ismaili H., Vrapi H., Jaupi A., Smýkal P.:

Genetic diversity of Albanian pea (*Pisum sativum* L.) landraces assessed by morphological traits and molecular markers

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In order to investigate the genetic diversity present in the pea germplasm stored in the Albanian genebank, we analyzed 28 local pea genotypes of Albanian origins for 23 quantitative morphological traits, as well as 14 retrotransposon-based insertion polymorphism (RBIP) molecular markers. The study of morphological characters carried out during three growing seasons (2010, 2011 and 2012) had the objective of characterization of traits useful in breeding programs. RBIP marker analysis

revealed the genetic similarity in range from 0.06 to 0.45. ANOVA, principal component analysis (PCA) and cluster analysis was used to visualize the association among different traits. Most of the quantitative morphological traits showed significant differences. PCA and cluster analysis (Ward ' s method) carried out for morphological traits divided the local pea genotypes into three clusters. Finally, the study identified the agronomicaly important traits which will facilitate the maintenance and agronomic evaluation of the collections.

Keywords:

clusters analysis; genetic similarity; landraces; morphological traits; pea, retrotransposon

[fulltext]