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Numerical taxonomy of the genus *Psephellus* Cass.in Turkey

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Aim of the study: This study aims to investigate the morphological variation and phenetic relationships of *Psephellus* Cass. Taxa in Turkey.

Material and Methods: Plant samples were collected from different localities in Turkey during 2010-2012. The samples were dried according to standard herbarium techniques and stored at the Selçuk University Konya Herbarium (KNYA). For numerical analysis, 89 characters for 30 *Psephellus* taxa were selected and used in this analysis. Numerical data were scored and the dendrogram was constructed by these data to show the relationship among the taxa. In addition, the principal component analysis (PCA) was used to demonstrate the presence of morphological variation.

Results: The phenetic relationships and morphological variations among *Psephellus* taxa were determined by the numerical analysis. The dendrogram obtained from numerical analysis showed that most of the taxa are clearly differentiated from the others by morphological characters. PCA analysis shows that *Psephellus* taxa have 95% of morphological variation. According to three-dimensional graphic constructed by PCA, *Psephellus* taxa have big variation and genetic diversity. *Ps. appendicigerus* and *Ps poluninii* are the most distinct species of the genus. *Psephellus* species should be taken into consideration in relation to evolutionary processes. Owing to the majority of studied taxa are thought to be local endemic or regional species, it will be easier to understand this wide variation, taking account of different habitats, microclimatic conditions and introgression as well as geographic isolation.

Keywords: Phenetic relationships, principal component analysis, Turkey.