Abstract

M. minima (L.) Bart. is a pasture legume native to the Mediterranean Basin and is present throughout the Algerian territory. The work reported in this study was conducted in the aim to evaluate the diversity of pheno-morphological and agronomic traits in some local populations of Medicago minima coming from a 2004 survey conducted by INRA Algeria throughout the Djelfa area. Two field experiments were conducted during two cropping seasons 2009/2010 and 2010/2011 at the experimental farm of the Research Center of Plant Science of Baraki (INRAA). Analysis of variance and Principal Components Analysis (PCA) were performed on the complete set of the data. The results obtained show high genetic differentiation among populations of M. minima for all of the recorded traits. Population from Oued Touil region was the earliest and has presented the best vegetative development in winter and in spring. On the other hand, population from Charef presented the best pod and grain yields. The PCA based on morphological and agronomic data clearly discriminated the M. minima populations. For morphological characterization, the two principal components (PC1 and PC2) explained 84.85% of the total variation and for agronomic evaluation, they describe 79.79%. The large variability observed in all traits studied gives the opportunity to select a suitable plant material to exploit to regenerate degraded rangeland and crop-livestock farming systems in Algeria.