

PP42: Phenotypic variability and characteristics of lentil (*Lens culinaris* Medik.) germplasm of Ethiopia by multivariate analysis

Fikru Mekonnen¹, Shiv Kumar², Seid Ahmed² and TR Sharma⁴

¹Wello University, Ethiopia; ²International Center for Agricultural Research in the Dry Areas (ICARDA), Rabat, Morocco; ³Chaudhary Sarwan Kumar Himachal Pradesh Agricultural University, Palampur, India.
⁴[*\(tiewoast@gmail.com\)](mailto:tiewoast@gmail.com)

Lentil (*Lens culinaris* Medik) is an important crop in Ethiopian highlands. Its productivity is very low due to low yielding landraces and other factors. The objectives of this study were to classify groups of genotypes based on morphological diversity, identification of the major traits contributing to the diversity and identify superior genotypes for breeding. Eleven variables analyzed by Mahalanobis's generalized distances (D^2), Principal Components Analysis (PCA), and a cluster analysis following the method of the Unweight Pair Group Method using Arithmetic Averages (UPGMA). The result showed the existence of considerable genetic diversity among lentil genotypes, for yield and yield components indicating the scope and guarantee for use in the breeding programmes. The most important traits that contributed to genetic divergence were above ground biomass, seed yield, number of seeds per plant, days to maturity and number of pods per plant. The lentil accessions were grouped into 6 major and 15 sub clusters characterized by distinct morphological feature irrespective of their origin.