Agro Morphological Characterization of Vicia Faba L. Accessions in the Kingdom of Saudi Arabia

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Abstract : This experiment was carried out at student educational farm College of Food and Agriculture, KSU, kingdom of Saudi Arabia; in order to characterize 154 V. faba accessions based on UPOV and IBPGR descriptors. 24 agro-morphological characters including 11 quantitative and 13 qualitative were observed for genetic variation. All the results were analyzed using multivariate analysis i.e. principle component analysis (PCA). First six principle components (PC) had Eigen-value greater than one; accounted for 72% of available V. faba genetic diversity. However first three components revealed more than 10% of genetic diversity each i.e. 22.36%, 15.86% and 10.89% respectively. PCA distributed the V. faba accessions into different groups based on their performance for the characters under observation. PC-1 which represented 22.36% of the genetic diversity was positively associated with stipule spot pigmentation, intensity of streaks, pod degree of curvature and to some extent with 100 seed weight. PC-2 covered 15.86 of the genetic diversity and showed positive association for average seed weight per plant, pod length, number of seeds per plant, 100 seed weight, stipule spot pigmentation, intensity of streaks (same as in PC-1) and to some extent for pod degree of curvature and number of pods per plant. PC-3 revealed 10.89% of genetic diversity and expressed positive association for number of pods per plant and number of leaflets per plant.

Keywords : agro morphological characterization, diversity, vicia faba, PCA

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