

GENETIC DIVERSITY ANALYSIS IN INDIAN MUSTARD [*BRASSICA JUNCEA* (L.) CZERN & COSS.]

URMIL VERMA¹, N. K. THAKRAL² & NEERU³

¹Department of Mathematics, Statistics and Physics, India

^{2,3}Oilseeds Section, Department of Genetics and Plant Breeding; CCS Haryana Agricultural University, Hisar, India

ABSTRACT

Genetic diversity plays an important role in plant breeding. Identification of diverse parents in any crop species like Indian mustard is the pre-requisite. Selection, which is the basis of every breeding programme operates only on variation which is of genetic nature and a wide range of variability present in any crop always provides the better chances of selecting the desirable types. The emphasis of this study was to study the genetic divergence in Indian mustard and grouping them into different clusters based on yield and yield contributing traits for the hybridization programme. Principal Component analysis (PCA) revealed that the first seven PCs explained about 74 % of the total variation and thus indicating that the traits viz., leaf width, leaf length, days to maturity, days to 50% flowering, no. of siliquae on main shoot, siliqua density, seed yield/plant, oil content, main shoot length, 1000-seed wt. and siliqua length are more useful i.e. the higher loading displaying variables. Genetic divergence analysis was performed on the basis of Discriminant analysis using Mahalanobis' D^2 -statistic. Based on the relative magnitude of D^2 -values ; 60 genotypes of Indian mustard were grouped into five clusters and plant height, no. of siliquae on main shoot and days to maturity were found the best discriminatory characters for the selection of diverse genotypes.

KEYWORDS: Genetic Diversity, Principal Component, Cluster Mean, D^2 -Value, INTER-Cluster Distances