

Assessment of genetic divergence using Mahalanobis D^2 and principle component analysis in strawberry (*Fragaria x ananassa* Duch.)

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ABSTRACT : Studies were carried out to assess the genetic divergence among 30 genotypes of strawberry using Mahalanobis D^2 and principle component analysis of 19 quantitative characters. Thirty genotypes of strawberry were grouped into six clusters. Maximum (9) genotypes were included in cluster I and minimum (2) in cluster VI. Maximum inter cluster distance (380.23) was observed between cluster I and VI and minimum (205.34) between the cluster V and cluster VI. Principle component analysis showed more than 85.59 per cent of variability for quantitative character in different genotypes. The genotypes of cluster II were observed with days to 50% flowering, days to first harvest, number of fruit per plant, fruit weight, fruit yield per plant, fruit diameter and genotypes of cluster VI for highest mean for petiole length, number of runners per plant, days to fruit set from flowering, pH of juice and ascorbic acid. Ascorbic acid, fruit length, fruit weight and plant height were observed significant variable components and Missionary, Lucunde, Wild Local (IC-319130) and Chandler were found with maximum value corresponding to these four variables. Selecting genotypes from divergent clusters and utilizing them in hybridization programme is likely to produce desirable recombinants, and may lead to improvement in strawberry for yield and its contributing traits.

Key Words : Strawberry (*Fragaria x ananassa*), genotypes, Mahalanobis average intra and inter-cluster distance (D^2), genetic divergence, quantitative characters, principle component analysis.