



Morphological Study of Genetic Variability of Banana Genotypes for Crop Improvement

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Abstract: Sixteen germplasms of *Musa* sp. (sub group- AAB) were assessed with an aim to describe the phenotypic diversity and the heterogeneity within morphological parameters, yield and quality attributes. A close relation between selection and uses of cultivars with the morphological, physico-chemical quality attributes and rheological specificities were highlighted for these germplasms and a significant variation among them was highlighted through Cluster analysis, Proximity Matrix for characterization of variables to identify major characters responsible for grouping of homogeneous cultivars. Dudhsagar genotype was the best for its high economic yield, high TSS and good sugar: acid ratio. The Sobri and Manohar had short crop duration, but late bunch harvesting at Manohar while, early at Amritpani, Martaman and Sobri. Nendran, Rasthali, Sobri, Martaman, Dudhsagar, Amritpani, Krishna Vazai, Malbhog and Kalibhog were found good in respect of plant height, petiole margin colour, empty nodes on peduncle, finger weight, pulp weight, pulp:peel ratio, TSS, total sugars, reducing sugar, non-reducing sugar and sugar-acid ratio. On the other hand Alapan, Champa, Poovan, Kanai Bansi and Chang Monua dominated by position of sucker, petiole length, bract base shape, colour of mid-rib dorsal surface, number of hands per bunch, number of fingers per bunch, fruit shape, fruit apex, flesh texture and acidity. Thus, it may be concluded that Dudhsagar may be taken as promising banana genotype for future breeding programme in respect of high economic yield, good TSS and sugar: acid ratio.

Keywords: Banana, Morphological study, Chemical characteristics, Cluster analysis
