

Morpho-Genetic Assessment of Guava (*Psidium guajava* L.) Genetic Resources in Pakistan

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Abstract : Guava (*Psidium guajava* L.) is an important commercial fruit crop of Pakistan. It is an allogamous crop having 25-40% cross pollination which on the one hand leads to clonal degradation and on the other hand can add variations to generated new cultivars. Morpho-genetic characterization of 37 guava accessions was carried out for study of the genetic diversity among guava accessions located in province Punjab, Pakistan. For morphological analysis, 17 morphological traits were studied, and strong positive correlation was found among the 7 morphological traits which included thickness of outer flesh in relation to core diameter, fruit length, fruit width, fruit juiciness, fruit size, fruit sweetness and number of seeds. For genetic characterization, 18 microsatellites were used, and the sizes of reproducible and scorable bands ranged from 150 to 320 bp. These 18 primer pairs amplified a total of 85 alleles in *P. guajava*, with an average total number of 4.7 alleles per locus and no more than two displayed bands (nuclear SSR loci). The phylogenetic tree based on the morphological and genetic traits showed the diversity of these 37 guava genotypes into two major groups. These results indicated that Pakistani guava is quite diverse and a more detail study is needed to define the level of genetic variability.

Keywords : *Psidium guajava* L, genetic diversity, SSR markers, polymorphism, dendrogram

Conference Title : ICAFNS 2017 : International Conference on Agrobiotechnology, Food and Nutritional Science

Conference Location : Paris, France

Conference Dates : December 28-29, 2017