

DIVERSITY ANALYSIS OF TOMATO GERMPLASM (*LYCOPERSICON ESCULENTUM* MARKERS) USING SSR

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ABSTRACT

Study of phenotypic and genetic diversity in landrace collections is important for germplasm conservation. In addition, the characterization of much diversified materials with molecular markers offers a unique opportunity to define significant marker-trait associations of biological and agronomic interest. A collection of twenty four determinate and indeterminate cultivars of Tomato were screened with twenty SSR (simple sequence repeat) primers and four lycopene gene specific primers in order to determine genetic identities, genetic diversity and genetic relationships. On the basis of resolving power, primer T-45, T-62 and T-106 were most significant as they are able to recognize all 24 genotypes. The gene diversity was varied from 0.65 to 0.97 values with a mean diversity of 0.84. On an average, 54 scorable and reproducible alleles were amplified using all primers. UPGMA based dendrogram grouped the cultivars into two main cluster with two individual separated at one end of the dendrogram. Cluster analysis clearly showed that some genotypes are closely related while some are significantly distinct. The genetic distance information obtained in this study might be useful to breeder for planning the breeding programs.

KEYWORDS: Diversity, SSR, Microsatellites, Tomato