**MOLECULAR CHARACTERIZATION AND ANALYSIS OF GENETIC DIVERSITY IN 75 AVOCADO ACCESSIONS USING SSRs**

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In this work, 75 avocado accessions maintained in the germplasm collection of the E.E. la Mayora (Spain) were characterized with 16 microsatellites previously developed in this species. This avocado collection includes local genotypes from continental Spain and genotypes obtained through exchange with different countries. A total of 156 different amplification fragments were detected ranging from 4 to 16 per locus with an average of 9.75 alleles per locus. All the microsatellites were highly informative with an expected heterozygosity higher than 0.5 and a probability of identity below 0.36. The total probability of identity was $2.85 \times 10^{-14}$. Fifteen of the 16 loci studied showed a positive Wright's fixation index (F) indicating a deficit of heterozygotes with an average for all the SSRs of 0.16. A dendrogram was generated using UPGMA (Unweighted Pair Group Method with Arithmetic Averages) based on the Nei and Li similarity index. This dendrogram classified most of the genotypes analyzed into three main groups which mainly differed in racial origin although with low bootstrap support probably due to the presence of many interracial hybrids in the collection. All the local Spanish cultivars seem to be of Mexican race or hybrids Mexican x Guatemalan. All the genotypes studied could be unequivocally distinguished with the combination of SSRs used except some putative mutations of 'Hass' and an additional group of two cultivars. The results obtained indicate that the set of SSRs used is highly informative and are discussed in terms of their implications for avocado germplasm characterization and management.