

Characterization of Simple Sequence Length Polymorphisms (SSLP) in a Sample of *Coffea* spp. Germplasm

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SUMMARY

To assess usefulness of microsatellites to discriminate *Coffea* genotypes, thirty-four fluorescently labeled microsatellite markers were used in a set of 30 *Coffea* accessions from the CENICAFE germplasm bank in Colombia. The plant material included seven east African accessions representing five diploid species (*C. canephora*, *C. liberica*, *C. eugenioides*, *C. kapakata*, *C. congensis*), and 23 wild and cultivated tetraploid accessions of *C. arabica* from Africa, Indonesia and South America, using one sample per accession. Similarity coefficients, number of alleles, and PIC values were estimated. The similarity coefficients between all possible pairs of genotypes, ranged from 0 to 0.84. The average similarity coefficients were 0.18, 0.34 and 0.59 among diploids, wild tetraploids and cultivated tetraploids. These values show that the cultivated tetraploids are the most closely related and that diploids are the most diverse accessions. The allele number ranged from 1 to 8 for all genotypes, with an average of 4 alleles per locus for diploids, 3 for wild tetraploids and 2 for cultivated tetraploids. The PIC value ranged from 0 to 0.86, with 0.60 for diploids, 0.35 for wild tetraploids and 0.22 for cultivated tetraploids.

The microsatellites showed fifty-five percent of the alleles from the wild tetraploids not shared with cultivated tetraploids, suggesting that these wild ancestors from Ethiopia could be used productively as a source of novel genetic variation to expand the gene pool of elite *C. arabica* germplasm. It was concluded that microsatellites are a very useful tool to discriminate genotypes, especially among tetraploids that present lower genetic variability than the diploids and therefore have a great potential to be utilized on breeding of *C. arabica*.