Molecular characterization of rubber tree clones (*Hevea brasiliensis*) using microsatellite markers

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The genus *Hevea* is part of the family Euphorbiaceae and is composed of ten rubber tree species. *Hevea brasiliensis* is the only species with economic potential to be source of natural rubber. There are a range of industrial applications for natural rubber, like fabrication of surgical gloves, shoes, automobile piece and pneumatic. Brazil has already been a producer of rubber, but due the action of *Microcyclus ulei* (agent phytopathological), the production has declined. The Asian countries have invested in crop breeding, and are currently the main producers of natural rubber. Molecular studies in rubber tree clones are efficient tools to identify and characterize without considering morphological traits, which are often close between the clones, subjective and have environmental influence. The genetic diversity characterized by molecular markers are source of genetic knowledge to access molecular variability. Microsatellite markers have generally high level of polymorphism at the DNA level as they are repeatedly throughout the eukaryote genome and are multi-allelic codominant. This study aimed to characterize 34 rubber tree clones widespread cultivated in Brazilian farms. Nine microsatellite markers available in literature were used. DNA was extracted according to CTAB protocol and it was PCR amplified. The amplified DNA was genotyped in polyacrylamide gel (5%) and silver staining. The genotyping results were analyzed in TFPGA software. From the nine microsatellite tested, four were genotyped and only one was monomorphic. The expected heterozygosity varied from 0.298 to 0.822. The observed heterozygosity ranged from 0.300 to 0.966. The number of alleles per locus ranged from four to 10. It was possible to discriminate 17 of 34 clones as unique profile using the set of polimorphic loci. Additional markers may discriminate the 17 remaining unidentified clones. These results indicated that the SSR markers constitute a useful tool for discriminating clones of rubber tree and complements morphological identification. The genetic studies provide molecular knowledge and it is directly applicable in cultivar identification in *Hevea brasiliensis*.

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