P483

Population Genetic Structure Based on Microsatellite Markers in Rubber Tree (*Hevea brasiliensis*) Germplasm Collection

Date: Monday, January 13, 2014
Room: Grand Exhibit Hall

***Livia Moura Souza** , State University of Campinas, Campinas - SP, Brazil*
Andre R. O. Conson , Unicamp, Campinas - SP, Brazil
Camila Campos Mantello , State University of Campinas, Campinas, Sao Paulo, Brazil
Carla Cristina da Silva , State University of Campinas, Campinas, Brazil
Vincent Le Guen , CIRAD, UMR AGAP, Montpellier, France
Dominique Garcia , CIRAD, UMR AGAP, Montpellier, France
Antonio A F Garcia , Esalq-USP, Piracicaba, SP, Brazil
Anete Pereira de Souza , University of Campinas, Campinas - SP, Brazil

Hevea brasiliensis is native to the Amazonian rain forest and an important source of natural rubber. All high-yielding cultivars of rubber tree in the world originated from breeding programs initially developed in Southeast Asia with a very narrow genetic basis. Germplasm diversity is the mainstay for crop improvement and genetic dissection of complex traits. Understanding genetic diversity, population structure, and the level and distribution of linkage disequilibrium (LD) in target populations is of great importance and a prerequisite for association mapping. A part of germplasm collection is used here and 192 accessions from Agronomic Institute of Campinas (IAC) and Eduard Michelin Plantation were screened with 15 microsatellite markers (SSR). Genomic DNA was extracted from young leaf tissues and was amplified by PCR. The Mean number of alleles per locus, mean expected heterozygosity and polymorphic information content across all accessions were 16.58, 0.90, and 0.89, respectively. The STRUCTURE analyses identified three subgroups among this population panel. The consensus neighbor-joining tree resulted in three clusters that generally agreed with three subgroups from the structure analyses. Overall, the results suggest that these populations can be exploited for assess the extent and genome-wide distribution of linkage disequilibrium (LD). Additional molecular markers, including more SSRs and single nucleotide polymorphisms (SNPs), should be used to provide better coverage of the genome and more genotyping should be initiated with the germplasm collection. In addition, the germplasm collection can also be used in the selection of parents for future crosses, based on genetic distance of the accessions.

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Meeting Information

When:
January 10 - 15, 2014
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