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Genetic Variability of *Myrciaria dubia* in Peruvian Amazon

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Abstract

Camu-camu (*Myrciaria dubia* McVaugh) is one of the most important fruit species from South America. The production is focused in the Peruvian Amazon, Brazil and Bolivia. This species is particularly important for its high content of vitamin C and antioxidants. The breeding process begun in 1998. Most farmers use non-cultivated plants, usually taken from the wild or just make basic selections. The aim of this work was to characterise the genetic variability of wild and cultivated populations in the Peruvian Amazon. The analysis is focused on diversity within and between the populations. This work is based on a collection of 31 populations. 21 wild populations coming from the surroundings of the city of Iquitos, 2 populations as a representative of cultivated populations also from around that city, and the remaining 8 were collected from plantations nearby Pucallpa. For the genetic analysis, 10–15 individuals were randomly selected from each of the population and samples of leaves were taken from each one (n = 357). For the detection of genetic diversity, six SSR primers were used, which have already been developed and used for a previous study at our university. By using computer programs, the main variability indexes and the related dendrogram were created.

The results showed that the observed heterozygosity (0.50) was smaller than the expected heterozygosity (0.61) and the inbreeding coefficient reached higher values in wild populations than in the cultivated ones. Wild populations could be divided according to the dendrogram into different groups. Approximate origin of cultivated populations was determined. The results showed also that the genetic variability is high, on the other hand there is also a high degree of inbreeding. This can be caused by large distance between populations from each other or low number of individuals in the population. This high level of diversity gives us a lot of possibilities in selection and breeding of the most profitable individuals.

Keywords: Camu-camu, genetic diversity, PCR, population genetics

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