New polymorphic nuclear microsatellites from aristotelia chilensis (Mol.) stuntz (elaeocarpaceae)

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Maqui (Aristotelia chilensis [Molina] Stuntz) is a dioecious small tree native to Chile and southwestern Argentina. This species has gained attention due to its high polyphenol content and anti-oxidant capacity. Nevertheless, genetics studies and information about A. chilensis population genetics are scarce and even contradictory. In fact, the available species-specific simple sequence repeat (SSR) markers are not informative at all, and so we decided to identify and characterize new ones able to trace individual genotypes, a basic tool intended for different genetic studies. We identified and characterized 15 new polymorphic SSR markers for A. chilensis. These markers were evaluated in three populations distributed along 1000 km of Central Chile, exhibiting up to 10 alleles per locus and a combined expected heterozygosity of 0.858. Markers were also informative in two related species, Aristotelia peduncularis (Labill.) Hook. f. and Crinodendron patagua Molina (Elaeocarpaceae), with 13 and six SSRs showing clear amplification patterns, respectively. This new set of SSR markers are highly polymorphic and informative, being the first ones available for the effective fingerprinting of maqui genotypes. A proof of concept of that was the differentiation of six maqui accessions that are under domestication for productive purposes, based on a subset of the polymorphic SSR markers.

Fingerprinting

Maqui

Maqui berry

Molecular markers

Patagonian endemics

SSR