



## Genetic differentiation in *Aspidosperma polyneuron* (Apocynaceae) over a short geographic distance as assessed by AFLP markers

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Genet. Mol. Res. 10 (2): 1180-1187 (2011)

Received October 25, 2010

Accepted December 9, 2010

Published June 21, 2011

DOI 10.4238/vol10-2gmr1126

**ABSTRACT.** Studies on intraspecific variation can contribute to the development of conservation strategies by identifying units of conservation for threatened species. *Aspidosperma polyneuron* is a tropical tree of seasonal semideciduous forests that is currently endangered and protected because it has been heavily logged for lumber, although it was once common in Brazil and neighboring countries. We investigated genetic structure in two samples of *A. polyneuron* collected from steep hillsides and from flat areas of a natural forest fragment in northern Paraná State, Brazil. Seven AFLP primer combinations yielded 200 markers, with a polymorphic rate of 88.5% for samples from the flat area and 99% for samples from the high declivity area. Total genetic diversity ( $H_T$ ) was 0.387, while the genetic diversity

within the populations ( $H_s$ ) was 0.307 and 0.372, for samples from the flat and the high declivity areas, respectively. Genetic differentiation between samples was high, with a mean  $F_{ST}$  of 0.265 and a genetic distance of 0.148, indicative of a high degree of genetic structure over a short distance. Principal coordinate analysis separated the samples into three groups of individuals; the first group included individuals from the high declivity area, the second group consisted of individuals only from the flat area, and the third group had individuals from both areas. Bayesian analysis also showed  $K = 3$  clusters. The unexpected high level of intraspecific variation of *A. polyneuron* in this small forest fragment should be taken into account when evaluating the genetic impact of forest degradation on this species in other semideciduous forest fragments.

**Key words:** Conservation genetics; AFLPs; Genetic variability; Tropical forest fragment