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Genetic fingerprinting using AFLP cannot distinguish traditionally classified baobab morphotypes

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Abstract Baobab (*Adansonia digitata* L.) is one of the predominant tree species in West African agroforestry systems. A local morphological classification system is used by farmers, identifying trees with desired or undesired combinations of traits. This study evaluates the genetic significance of these morphotypes by comparing local identification with AFLP marker information. Eight morphotypes were recognized by seven ethnic groups from Benin, Ghana and Senegal, among 182 sampled baobab trees. Five primer pairs were used for DNA fingerprinting, resulting in a total of 254 scored bands, of which between 94.1% and 100% was polymorphic within morphotypes. Generally, genetic fingerprinting did not correlate with the traditional morphological identification of *Adansonia digitata*. Probably, AFLP markers are not directly linked to the differences in phenotype or the traits used for the traditional classification are largely dependent on environmental factors. Since no genetic differentiation is found between the morphotypes, a morphotype-based approach in the collection of genetic variation for conservation programs is not advisable.

Keywords *Adansonia digitata* · Local classification · AFLP · West Africa

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Introduction

The multipurpose baobab tree (*Adansonia digitata* L.) is expected to play a major role in future crop diversification programs and in the development of West-African agroforestry systems (IPGRI 1999). This was also expressed by the rural people in