



Leaf age affects the quality of DNA extracted from *Dimorphandra mollis* (Fabaceae), a tropical tree species from the Cerrado region of Brazil

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Genet. Mol. Res. 10 (1): 353-358 (2011)

Received August 23, 2010

Accepted November 27, 2010

Published March 1, 2011

DOI 10.4238/vol10-1gmr1030

ABSTRACT. Isolation of high-quality DNA from plants, especially plants from the Cerrado, is notoriously difficult because of polysaccharides and secondary compounds produced by plants from this biome. DNA isolation and its quality may be compromised by chemical defenses such as tannins and phenols. Quantitative plant defenses tend to have a cumulative effect, increasing in concentration during leaf development, reducing DNA quality extracted in mature compared to young leaves. We report the effect of leaf age on DNA extraction of *Dimorphandra mollis*. Our working hypothesis was that the young leaves have more DNA than old leaves of the same individual because chemical defenses accumulate in older leaves. Young and old leaves were sampled from eight mature trees as well as leaves from eight seedlings in the north region of Minas Gerais State. Genomic DNA extraction followed the standard CTAB procedure. DNA isolation was very successful from young leaves of 16 individuals of *D. mollis*. The extracted DNA exhibited high quality and

the DNA quantity was also high, with an A_{260}/A_{280} ratio above 1.8, which is within the optimal sample range. In contrast, DNA isolation from old leaves was not successful. When the DNA was extracted from old leaves, the DNA was brownish, indicating contamination by phenolic compounds. These metabolites oxidize the DNA irreversibly, which hinders amplification of DNA by PCR by inhibiting the action of enzymes such as Taq polymerase. PCR performed with DNA from young leaves of *D. mollis* was successful and produced strong bands for RAPD markers.

Key words: “Fava d’anta”; DNA extraction; Cerrado; Metabolic compounds; *Dimorphandra mollis*