

Comparison of Two DNA Extraction Methods in Dried, Fresh and Frozen Leaves of *Hibiscus rosa-sinensis* and *Jasminum sambac*

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ABSTRACT

The main concern involving DNA extraction of plant samples has always been the presence of certain secondary metabolites that may lead to several complications, such as interfering with the DNA isolation procedures, downstream processing, leading to inaccurate results, and having the need to use costly/ hazardous chemicals. These secondary metabolites may come in the form of phenols, quinones, terpenes, alkaloids, and several more. Thus, there is a need to look for effective extraction methods that are able to isolate DNA from plant samples with high yield and purity for amplification purpose. In this dissertation, the Edward's method was compared to the commercial kit from Invisorb, on the fresh, dried, and frozen plant samples of *Hibiscus rosa-sinensis* and *Jasminum sambac*. Spectrophotometric analysis did not manage to produce consistent and reliable results, such as negative absorbance values, along with extremely low or high absorbance readings. However, inspection on the agarose gel electrophoresis along with PCR amplification provided further data on which to base conclusions. Distinct bands were observed for all of the DNA samples extracted and successfully amplified with *rbcL* gene, except for 7 out of the 36 samples. They came from the second fresh *Hibiscus* sample, second and third dried *Hibiscus* sample, and first frozen *Hibiscus* sample extracted with the Invisorb kit. The remaining ones came from the first and second samples of fresh *Jasminum*, and first sample of dried *Jasminum* leaves extracted using the Edward's method. This study was not able to determine which of the two methods is more effective when it comes to extracting DNA with high purity and concentration due to limitations in the results obtained. Nonetheless, it can be concluded that both the Edward's method and Invisorb commercial kit are able to extract DNA sufficiently with ease from *Hibiscus rosa-sinensis* and *Jasminum sambac* regardless of in fresh, dried, or frozen state.