

# DNA Barcode in identifying two distinctive *Jasminum*; *Jasminum grandiflorum* and *Jasminum multiflorum*

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## ABSTRACT

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*Jasminum* comes under the family of Oleaceae which can easily be found anywhere; particularly in its natural environment or on to the shelves of many existing stores in the form of fragrance and tea. This particular flora is beneficial in both garden-fresh and dried form; as it is enriched with a high content of valuable essential oil extract that can be used as a precious primary resource. *Jasminum* are classified into various types of species such as *Jasminum grandiflorum* and *Jasminum multiflorum*. It becomes a great obstacle in identifying them accurately without the presence of its flower, especially after being transformed into an end product; perfume. DNA barcoding is the solution in determining its purity in a mixture of ingredients as this method is accurate and dependable besides having a pro in saving time as well as the overall cost; as this barcode requires only a short portion of the nucleotide sequencing of genetic material. Therefore in this dissertation, two distinctive *Jasminum* were selected; *Jasminum multiflorum* and *Jasminum grandiflorum* to be barcoded using ITS2 and *trnH-psbA* marker. The process began with DNA extraction process using Edward's buffer solution and Invisorb Spin Plant Mini Kit. The extracted DNA was then quantified using UV spectrophotometer reading. Gel electrophoresis was also performed to analyze the DNA quality as well as to estimate its concentration which was subsequently amplified via polymerase chain reaction; utilizing ITS2 and *trnH-psbA* markers. ITS2 and *trnH-psbA* genes were sequenced and used to perform multiple sequence alignment and tree building as well as BLAST. It seems that both markers have high discrimination power up to species level, however due to insufficient information available in the GenBank, NCBI the BLAST results obtained is mostly only up to the genus level. Still, the barcode had successfully been generated for both *Jasminum* using both of the markers chosen.