environmental sciences proceedings

MDPI

Proceedings

Standardization of Extraction of DNA From Silica-gel Dried Leaf Sample of Garcinia indica (Thouars) Choisy †

Anila M Sunny [1,*], Sreedevi C. N [1], Vilas Kumar Patel [2], Tresa Hamalton [1] and N. Ravi [1,*]

[1] Institute of Wood science and Technology Bengaluru, India-03; ccnsreedevi@icfre.org; tresa@icfre.org
[2] College of Forestry, University of Agricultural Science, Dharwad,India; vilascof05@gmail.com
* Correspondence: anilarachelsunny78@gmail.com; nravi@icfre.org
† Presented at the 3rd International Electronic Conference on Forests — Exploring New Discoveries and New Directions in Forests, 15 to 31 October 2022. Available online: https://iecf2022.sciforum.net.

Abstract: Garcinia indica, commonly known as Kokum is a vulnerable species and endemic to Western Ghats. The fruits are commercially important and have multifarious uses. Genetic variation within the species is studied using DNA finger printing for its commercial exploitation. Extraction of DNA from Garcinia indica is challenging due to the presence of high level of secondary metabolites like polyphenols and flavonoids. The present study focuses on extraction and estimation of DNA from silica-gel dried leaves. Leaf samples were collected from two different regions of Western Ghats viz., Kukke Subramanya (n=4) and Karwar(n=6). The leaf samples were stored in silica-gel during transportation to laboratory, dried well in silica-gel and later stored at -20ºC for long-term storage. The DNA was extracted with 4% Cetyl trimethyl ammonium bromide (CTAB). The concentration of polyvinyl pyrrolidone (PVP) and β–mercaptoethanol was modified in extraction buffer to reduce the interference of secondary metabolites. The determination of quality and quantity of DNA are essential for amplification of DNA in PCR. The DNA obtained showed absorbance ratio (A260/280) between 1.6-1.9 indicating the good quality of DNA and the quantity varied from 111.8 - 297.9 ng/µl in the silica-gel dried samples. In the present investigation, the modified method of extraction of DNA found to be best method for obtaining good quality and quantity of DNA from the silica-gel dried leaves of Garcinia indica.

Keywords: Garcinia indica, Silica-gel dried, DNA, CTAB

Citation: Sunny, A.M.; Sreedevi C. N; Patel, V.K.; Hamalton, T.; N. Ravi Standardization of Extraction of DNA From Silica-gel Dried Leaf Sample of Garcinia indica (Thouars) Choisy. Environ. Sci. Proc., 2022, 4, x. https://doi.org/10.3390/xxxxx

Academic Editor: Rodolfo Picchio

Published: date