ISSN 0976-6901 ONLINE: ISSN 2456-6543
JOURNAL OF
BIODIVERSITY

Taylor & Francis
Taylor & Francis Group

J Biodiversity, 8(2): 88-93 (2017)
DOI: 10.1080/09766901.2018.1425081

Extraction of High Quality Genomic DNA for Genetic Diversity and Molecular Marker Studies from Leaves of Makhana (*Euryale ferox*)

Nitish Kumar[1*], Hemant Kumar[1] and Swati Kumari[1]

[1]Centre for Biological Sciences (Biotechnology), School of Earth, Biological and Environmental Sciences, Central University of South Bihar, Patna 800 014, Bihar, India
[2]Centre for Education (Life Science), Central University of South Bihar, Gaya Campus, Gaya 823 001, Bihar, India

KEYWORDS DNA Extraction. *Euryale ferox*. Molecular Diversity. Molecular Marker. Phenol

ABSTRACT Genetic diversity study of plants through molecular markers depends on both quality and quantity of DNA. The standard protocols and commercially available kits failed to isolate high quality DNA from leaf tissue of Makhana (*Euryale ferox* Salisb.) due to the occurrence of the high amount of polysaccharides, polyphenols and proteins. A cetyl trimethyl ammonium bromide (CTAB) protocol has been optimized for isolation of high quality genomic DNA from the leaf of *E. ferox*. The optimized protocol yielded up to 4081 ng per gram leaves tissue of good quality DNA, which was free of polysaccharide, polyphenols and protein. The problems of DNA degradation, contamination, and low yield due to irreversible binding of phenolic compounds and co-precipitation of polysaccharides with DNA were avoided by this method. The isolated DNA has excellent spectral qualities, and eûciently digested by restriction endonucleases and it is also suitable for development of molecular markers such as RAPD and ISSR.