



ISSN : 0973-7057

Organoleptic and proximate investigation of *Neolamarckia cadamba* (Roxb.) Bosser leaves

Swati Shikha* & Arun Kumar

University Department of Botany, Ranchi University, Ranchi, Jharkhand, India

Received : 08th January, 2024 ; Revised : 09th February, 2024

DOI:-<https://doi.org/10.5281/zenodo.14403726>

Abstract- Proximate analysis of drugs is an important step in herbal formulations to detect the qualitative parameter of herbal drugs. *Neolamarckia cadamba* (Roxb.) Bosser is an important medicinal plant of an Indian ayurveda. This present paper deals with the organoleptic parameters such as color, odor and texture of leaves. Proximate parameters like moisture content, total ash value, swelling index and foaming index of *Neolamarckia cadamba* leaves were investigated.

Key words: *Neolamarckia cadamba*, leaves, organoleptic, standardization, parameters

INTRODUCTION

Neolamarckia cadamba (Roxb.) Bosser is a both culturally and medicinally important plant of India. Tree is mentioned in Hindu mythology and is believed to be associated with Lord Krishna. Tree is also mentioned in Ayurveda due to its numerous medicinal properties such as analgesic, anti-inflammatory, antidiabetic, antifungal, antibacterial, anticancer and antihelminthic.¹ *Neolamarckia cadamba* (Roxb.) Bosser is a rich source of natural antioxidant contents like vitamin C, polyphenol, lycopene, flavonoid and carotene.² High iron and calcium contents along with various secondary metabolites has been also reported in leaves.^{3,4}

MATERIALS & METHODS

Organoleptic analysis

Leaves of *Neolamarckia cadamba* (Roxb.) Bosser was collected from Ranchi, Jharkhand. Collected leaves

were dried in the shade at room temperature. Shadowed dried leaves were then grounded into fine powder. The fine powder was then extracted with methanol using a cold maceration method. Both fine powder and methanolic extract of *Neolamarckia cadamba* (Roxb.) Bosser leaves were used for organoleptic parameter analysis.⁵ Proximate parameters were calculated using standard methods (Quality control methods for herbal materials, WHO, Geneva, Switzerland, Updated edition, 2011).⁶

Proximate analysis

a) Moisture content

Powdered plant sample were weighed and kept at 105°C in hot air oven till constant weight of powder was obtained and then the moisture content of each plant materials was calculated.

b) Total ash value

For total ash value, powdered plant sample were weighed (2 gm) in an empty crucible and spread evenly and incinerated at 600°C. When cooled down, ash of the respective plant material was weighed and calculated in terms of percentage.

*Corresponding author :

Phone : 8210101446

E-mail : swatishikha95@gmail.com

c) Swelling index

A powdered plant sample was taken into a measuring cylinder of 25 ml and water was poured to top and left for 24 hrs at room temperature. After 24 hrs, the volume occupied by powder was measured in ml, which gives the swelling Index.

d) Foaming index

In a conical flask plant sample and distilled water (1:100 w/v) was taken and boiled for approximately 30 min. The mixture was then poured into test tubes in different quantities and water was added to make up the total final volume of 10 ml. The mixture was shaken till foam appeared and then the foaming index was calculated with the help of foam height.

and 8.6 ± 0.45 % of total ash value. Swelling index and foaming index were found to be of pharmacognostic standards.

Table 3: Proximate parameters of *Neolamarckia cadamba* (Roxb.) Bosser leaves

Sl. No.	Parameters	Leaves
1.	Moisture content	8.68 ± 0.55 %
2.	Total ash value	8.6 ± 0.45 %
3.	Swelling index	3 ml
4.	Foaming index	< 100

RESULTS & DISCUSSION

Adulteration is a major problem in the pharmaceutical and food industries. Proximate analysis helps in investigating the composition of herbal drugs which may be helpful for drug formulations and in prevention of chronic illness.⁷

Table 1: Organoleptic parameters of powdered *Neolamarckia cadamba* (Roxb.) Bosser leaves

Sl. No.	Parameters	Leaves
1.	Color	Light green
2.	Odor	Bitter
3.	Texture	Rough

Table 2: Organoleptic parameters of methanolic extract of *Neolamarckia cadamba* (Roxb.) Bosser leaves

Sl. No.	Parameters	Leaves
1.	Color	Dark green
2.	Odor	Pungent
3.	Texture	Smooth

In this study, sensory aspects of powdered and aqueous extract of *Neolamarckia cadamba* (Roxb.) Bosser leaves were investigated. Powdered sample showed a light green color with a bitter smell and a slightly rough texture, whereas the methanolic extract of plant sample showed a dark green color. The bitter smell was faded, and a pungent smell was detected, and texture was found to be smooth.

Moisture content and ash value provides information on the amount of water quantity and amount of inorganic minerals present in drugs. Low water quantity shows high durability. Proximate parameters of *Neolamarckia cadamba* (Roxb.) Bosser showed 8.68 ± 0.55 % of moisture content

REFERENCES

- Kamal A. T. M., Chowdhury K. A. A., Rana M. M., Islam A., Khan E. A., Haque M. A. & Chy M. M. H. 2015.** Study of cytotoxic, thrombolytic and anthelmintic activity of extract of *Neolamarckia cadamba* (Roxb.) leave. *European J. Med. Plants.* **10(2):** 1-9.
- Pal I., Majumdar A., Khaled K. L. & Datta S. 2014.** Quantitative estimation of some essential minerals in the fruit of *Neolamarckia cadamba*. *IOSR J. Pharm. Biol. Sci.* **9(6):** 20-22.
- Batta K. & Rajput H. 2021.** Chemical and Phytochemical properties of Fresh and Dry Kadam (*Neolamarckia cadamba*) Leaves. *Chem Sci Rev Lett.* **10(39):** 330-335.
- Shikha S. & Kumar A. 2022.** Comparative Phytochemical Evaluation of the Aerial Parts of *Neolamarckia cadamba* (Roxb.) Bosser. *J. Stress Physiol. Biochem.* **18(3):** 60-68.
- Koroma L., Kpaka J. & Kpaka A. 2022.** Organoleptic Evaluation and Physiochemical Characteristics of Powdered Plant Organs of the Traditional Medicinal Plant *Caloncoba echinata*. *Int. J. Eng. Technol. Innov.* **2(3):** 14-22.
- World Health Organization. 2011.** Quality control methods for herbal materials. World Health Organization.
- Tyagi S., Gupta V., Jain P. & Tripathi R. 2022.** Comparative Pharmacognostical and Phytochemical Account of the Peel and Pulp of the Fruit of *C. pepo*. *Lett. Appl. Nano. BioScience.* **12(4):** 1-16