

## EXTRACTIVE VALUE DETERMINATION OF *NEOLAMARCKIA CADAMBA* (ROXB.) BOSSER

Swati Shikha\*<sup>1</sup>, Arun Kumar\*<sup>2</sup>

\*<sup>1</sup>Research Scholar, University Department Of Botany, Ranchi University, Ranchi,  
Jharkhand- 834001, India.

\*<sup>2</sup>Associate Professor, University Department Of Botany, Ranchi University, Ranchi,  
Jharkhand- 834001, India.

### ABSTRACT

*Neolamarckia cadamba* (Roxb.) Bosser is known to have various therapeutic properties. These are due to presence of various chemical compounds. This present study is about extractive value of leaves of *Neolamarckia cadamba* (Roxb.) Bosser in different solvents that is in aqueous (NCAQ), Benzene (NCBE), Ethanol (NCET), Chloroform (NCCH) and Methanol (NCMT). Leaves in NCMT (13±0.20 %) showed the highest extractive value followed by NCAQ (12.43±0.15 %) and NCCH (6.43±0.25 %). Least extractive value was observed in NCET (4.46±0.40 %) followed by NCBE (2.56±0.20 %).

**Keywords:** *Neolamarckia Cadamba*, Solvents, Extractive Value, Leaves, Methanol.

### I. INTRODUCTION

Plants are known as an excellent source of various chemical compounds and have been in use as therapeutic agents since ages. *Neolamarckia cadamba* is one of such ethno medicinally important plant which is commonly known as 'Kadam' and can be found all over India. *Neolamarckia cadamba* also has a cultural importance in India as it has been known to associate with lord Krishna. It is said that lord Krishna resides in Kadam tree. *Neolamarckia cadamba* has been mentioned in Ayurveda which shows its value both as traditionally and medicinally. Studies on biological activities of *Neolamarckia cadamba* has revealed it's antioxidant, antimalarial, antimicrobial, antidiabetic, anti- inflammatory, anti- hepatotoxic, analgesic and laxative properties [1]. This present work is carried out on extractive value of *Neolamarckia cadamba* which will be helpful in analyzing the nature of plant.

### II. MATERIALS AND METHODS

#### 2.1 Sample Collection

Leaves of *N. cadamba* were collected from Ranchi district of Jharkhand. Collected plant sample were cleaned thoroughly and left to dry in shade at room temperature [2]. After drying samples were grinded into powder by mechanical means. These sample powders were used for extractive value evaluations of *N. cadamba* as per standard protocols [3-6].

#### 2.2 Extractive Value

Powdered samples were extracted with different solvents, aqueous, benzene, chloroform, ethanol and methanol. 2 gm of each sample were weighed and then transferred into conical flask of 250 ml filled with respective solvents and kept in shaker for 24 hrs. Extracts were filtered and poured into petri plates and left for evaporation. Concentrated plant extracts were obtained and extractive value was calculated using the following formula [7]:

$$\text{Extractive value (\%)} = \frac{\text{weight of dried extract}}{\text{weight of plant sample}} \times 100$$

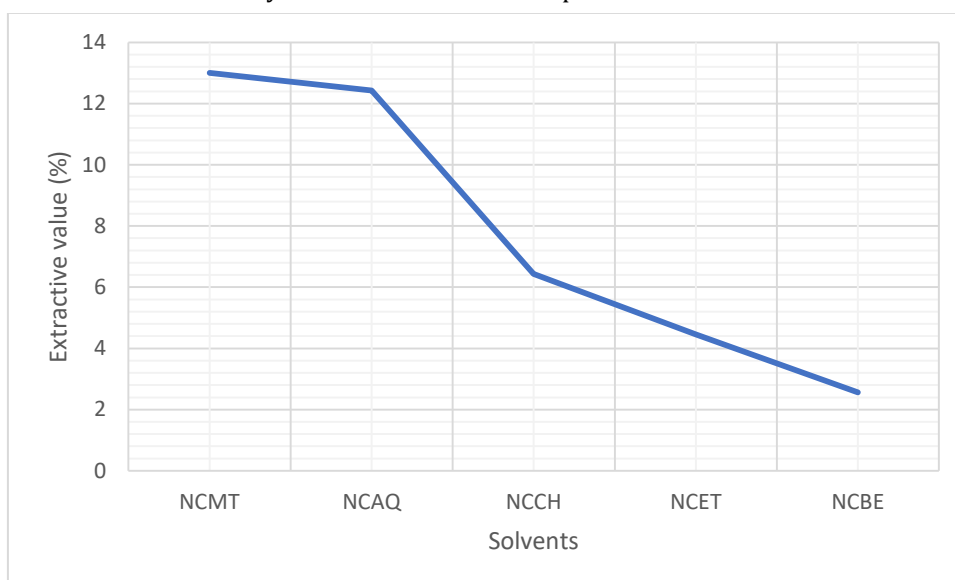
### III. RESULTS AND DISCUSSION

In physicochemical studies of plants, extractive value is a step which helps in determining the chemical nature of plants. Present study reveals the extractive value of NCMT was highest followed by NCAQ, NCCH, NCET and NCBE.

**Table 1:** Extractive Value leaves

Sl. No.	Solvents	Extractive Value
1.	NCMT	13±0.20 %
2.	NCAQ	12.43±0.15 %
3.	NCCH	6.43±0.25 %
4.	NCET	4.46±0.40 %
5.	NCBE	2.56±0.20 %

Pawar *et al.* (2016) studied extractive value of *Bacopa monnieri* (L) and Methanol showed the highest extractive value of 10.1 % followed by ethanol and aqueous. Petroleum ether showed the least extractive value followed by chloroform [8]. High extractive nature of methanol, ethanol and aqueous whereas low extractive value of chloroform was observed in our study as well which shows the poor extractive nature of chloroform as a solvent.



**Figure 1:** Showing extraction potential of different solvents

Avneet *et al.*, (2018) also studied extractive value of *Bacopa monnieri*, *Evolvulus alsinoides* and *Tinospora cardifolia* in petroleum ether and ethanol. It was observed that ethanolic extract of all the three studied plants performed well as compared to petroleum ether [9].

#### IV. CONCLUSION

Physicochemical properties of plant help in characterization study of indigenous medicinal plants of a respective region, helps in determining the medicinal aspects of plants and also helps in formulation of drug [10]. From this study, it can be concluded that extractive value evaluation of plant parts can be help in determining the extractive nature of different solvents to extract dugs from the plant samples leading an effective and smooth extraction process.

#### V. REFERENCES

- [1] S. Mondal, K. Bhar, A. S. Mahapatra, J. Mukherjee, P. Mondal, S. T. Rahaman & A. P. Nair, "Haripriya" God's Favorite: *Anthocephalus cadamba* (Roxb.) Miq- at a glance". Pharmacognosy Research, Vol. 12, Issue 1, February 2020, pp. 1- 16.
- [2] A. Pandey & P. S. Negi, "Phytochemical composition, in vitro antioxidant activity and antibacterial mechanisms of *Neolamarckia cadamba* fruits extracts", Natural product research, vol. 32, Issue 10, May 2017, pp. 1189-1192.

- 
- [3] U. C. Baragi, P. C. Baragi, M. K. Vyas, & V. J. Shukla, "Standardization and quality control parameters of Dashanga Kwatha ghana tablet: An Ayurvedic formulation", International journal of Ayurveda research, vol. 2, Issue 1, Jan- Mar. 2011, pp. 42- 47.
- [4] Government of India, Ministry of Health and Family Welfare. Ayurvedic Pharmacopoeia of India. Part-II (Formulations), Vol-II, 1st ed. Delhi: The Controller of Publications; 2008.
- [5] C. R. Chase & R. Pratt, "Fluorescence of powdered vegetable drugs with particular reference to development of a system of identification", Journal of American Pharmacists Association, vol. 38, Issue 6, Jun. 1949, pp. 324-331.
- [6] WHO. Quality Control Methods for Medicinal Plant material. Geneva, 1998.
- [7] Shikha S. & Kumar A., "Comparative determination of extractive value of some potential anxiolytic plants", Science and Technology, vol 7, Issue 1, January 2022, pp.- 9-10.
- [8] Pawar S. S. & Jadhav M. G., "Determination of extractive value and phytochemical analysis of *Bacopa monnieri* (L), Recent Advances in Life Sciences, vol. 8, 2016, pp. 1222-1229.
- [9] Avneet G., Pal M. S. & Siddhraj S., "Ash value and extractive value comparison between petroleum ether and ethanolic extracts of *Bacopa monnieri*, *Evolvulus alsinoides* and *Tinospora cardifolia*, Journal of Pharmacy Research, vol. 12, Issue 4 February 2018, pp. 477-479.
- [10] R. Kaushik, J. Jainendra, P. Pai, Y. Sharma, V. Kumar & A. Gupta, "Pharmacognostical. Physicochemical and Preliminary phytochemical studies of *Anthocephalus cadamba* (Roxb.) leaves", Research Journal of pharmacy and technology, vol. 11, Apr. 2018, pp. 1391- 1397.