International Journal of Botany Studies
www.botanyjournals.com
ISSN: 2455-541X
Received: 06-12-2025, Accepted: 05-01-2026, Published: 20-01-2026
Volume 11, Issue 1, 2026, Page No. 123-126

Medico-botanical evaluation of *Dendrophthoe falcata* (L.f) etting. (Loranthaceae) from Akole Tehsil of Maharashtra State

R K Waghmare
Department of Botany, Agasti Arts Commerce and Dadasaheb Rupwate Science College, Akole, Ahilyanagar, Maharashtra, India

Abstract
Dendrophthoe falcata is one of the semiparasitic plant found on the stems of certain host plants. Regardless of its parasitic nature, the plant is well known for its many medicinal properties. Its entire plant parts possess systemic action. Ethnic communities use the paste of such plant parts to set dislocated bones**.** The present investigation pertains to Macroscopy, Microscopy, Histochemistry and Phytochemistry of such plant. The study proves beneficial from medico-botanical point of view.

Keywords: *Dendrophthoe falcata,* semiparasitic plant, systemic action

Introduction

The plant *Dendrophthoe falcata* (L.f) Etting. (Loranthaceae) is commonly called as Bandgul in Marathi, Banda in Hindi and Vrukshadani in Sanskrit language. The plant is semiparasite, commonly observed on *Mangifera indica, Terminalia chebula* and *Ficus racemosa.* The plant is found abundant in Akole Tehsil of Maharashtra state. Ethnic communities like Bhill, Thakar, Vanjari, Mahadev-koli of Akole tehsil make use of such plant to cure certain diseases. Paste of entire plant is used to heal wounds, treat skin diseases. Some use the paste as excellent remedy to cure bone fractures of humans as well as cattels. Whole plant posseses anti-Inflamatory activity. It also posseses ant-microbial properties.

It is found located on *Mangifera indica, Terminalia chebula* and *Ficus racemosa* and *Diospyorus malanoxylon* (Kshirsagar and Singh, 2008) [1]. It is commonly called as Bandgul all over Maharashtra where as in Dhule district it is known as Munda, Lephade, Bendaval, and Bendguli (Patil, 2003) [2]. Leaves are narrow, linear oblong, broadly ellipitic, thick, leathery and coriaceous (Diwakar and Sharma, 2000) [3]. Flowering period is during September to May (Cooke, 1967) [4]. Flowers are arranged in in auxillar racemes, white to creamy white. Berries are ovoid, ellipsoid, pink, globose, and crowded. It is located on various plants throughout the Maharashtra state (Singh and Karthikeyan, 2000) [5]. In Sawantwadi it is found to be distributed in Ambodi, Malgaon, Chartha, Ramghat and Bhedsi (Almedia, 1990) [6]. The whole plant is used in indigenous system of medicine as cooling, bitter, astringent, aphrodiasic, narcotic and diuretic (Alekutty *et al*., 1993) [7]. Neurobehavioral activity of whole plant was studied along with wound healing, antimicrobial and antioxidant study (Pattanayak *et al*., 2009 and Pattanayak, 2008) [8]. Paste of the plant is applied for setting bones (Manandhar, 1986) [9]. Leaves along with *Urtica dioica* stem are made into paste and applied externally to cure bone fracture (Bhattaria, 1993) [10].

Material and Methods

Necessary requirements for medico-botanical study of *Dendrophthoe falcata* included Vasculum, Secateurs, Field press, Blotting papers Camera, etc. The herbarium of the selected plant was prepared in flowering and fruiting condition. This was further used to identify the plant from the authentic source. After the identification of plant as *Dendrophthoe falcata* (L.f) Etting. (Loranthaceae) the plant material (Stem) was harvested. Frequent field visits were arranged. Interviews of the Local tribes like Mahedev-Koli, Thakar were documented. Accordingly the plant specimens were collected from the host plant like *Cassia occidentalis.*

The outer color and inner color of stem, fracture, and external markings were recorded. The fresh stem was used for Microscopical and Histochemical study. For Phytochemical study the stem of the plant was dried in shade. The powder was prepared. It was used to carry out further phytochemical study. This included preliminary phytochemical study along with percentage extractives, ash analysis and fluorescence study. Microscopic evaluation of drugs was carried out and anatomical characters were studied. The percentage extractives were determined by the method given in Indian Pharmacopoeia. The percentage of acid insoluble ash was calculated with reference to air-dried drug. (Indian Pharmacopoeia, 1955) [11]. The fluorescence analysis of powdered drugs was carried as per the method of Chase and (Pratt 1949) [12]. Localization of chemicals such as starch, proteins, sugars, tannins, saponins, fats, alkaloids and glycosides was done following (Johansen, 1940) [13] and (Krishnamurthy, 1988) [14].

Results

Macroscopy: It is a large bushy stem parasite. Outer surface of the stem is glabrous and dichotomously branched. Outer surface is grey to brown colored where as internal color is whitish pale. Fracture is short and odor is characteristic with acrid to bitter taste. Fracture is short with characteristic odor and acrid to bitter taste.

Microscopy: Transverse section of *Dendrophthoe* stem showed spherical outline with lenticular openings and thick walled cuticle. Cork observed was 4-5 layered with rectangular cells and tanniferous contents which was not the case in other stem drugs. Hypodermis was 5-6 layered. Cortex recognized was 8-10 layered abroad along with stone cells filled with tannins. Pericycle was found surrounding the single layered cambium. Xylem occupied the maximum area and was found to be made up of parenchyma cells,

pitted vessels and tapering fibers very unique and different as compared to other drugs. Medullary rays were 1-2 seriate with elongated cells. Pith showed deposition of starch grains, tannins and sclerides.

Observation Tables

Table 1: Percentage extractives & Ash analysis

Tests	% Yield
Water	0.31±0.010
Alcohol	0.30±0.017
Petroleum ether	0.19±0.024
Solvent ether	0.21±0.010
Total Ash	0.034±0.002
Acid insoluble ash	0.03±0.011

[The values are the mean of triplicates (S.E.)]

Table 2: Fluorescence Study of Drugs

Treatment	*Observations*
Powder as such in visible light	Brown
Powder under U.V 254 nm short	Yellow
Powder under U.V 365 nm long	Violet
Powder mounted innitrocellulose under U.V 254nm short	Green
365 nm long	Dull Green
Powder + 1N NaOH in methanol and after drying for 30 min. mounted in nitrocellulose under U.V 254nm short	Fluorescent Green
Powder under U.V 365 nm long	Blue Green
Powder mounted in 1 N NaOH under U.V 254nm short	Blue Green
Powder mounted in 1 N NaOH under U.V 365 nm long	Purple Black

Table 3: Preliminary Phytochemical study of Drugs

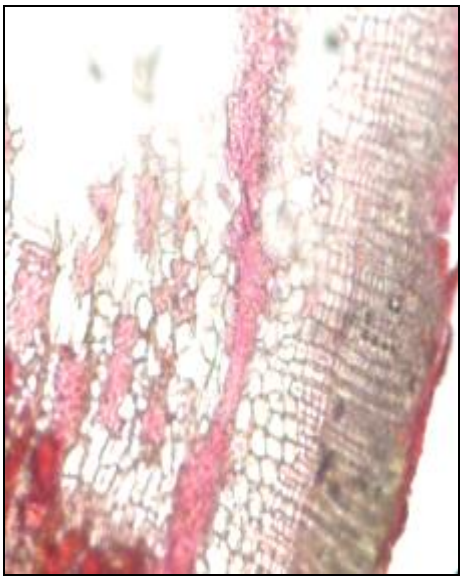
Tests	Reagents	*Dendrophthoe Stem*
A) Water extractives1) Starch	I_2 KI	+ve
2) Tannins	10% Aq. $Fecl_3$	+ve
3) Saponins	K_3 $FecN_6$ & $Fecl_3$	+ve
5) Proteins	Sudan III / IV	+ve
6) Red. Sug	Fluckger's tests	+ve
B) Alcholic extractives1) Alkaloids	Dragendorff's reagent	+ve
2) Glycosides	Guignard's reag	+ve
3) Flavanoids	Conc. HCl + Mg. turnings	+ve

Plate-I: Images of *D. falcata* (Figures a, b, c and d)

(Fig. (a) Photograph of plant)

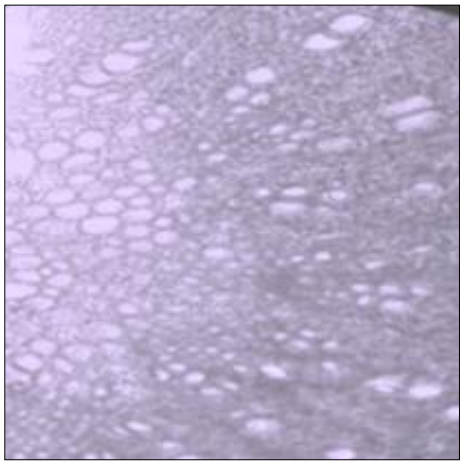
(Fig. (b)External Appearance of Stem)

(Fig. (c)Internal appearance of stem)

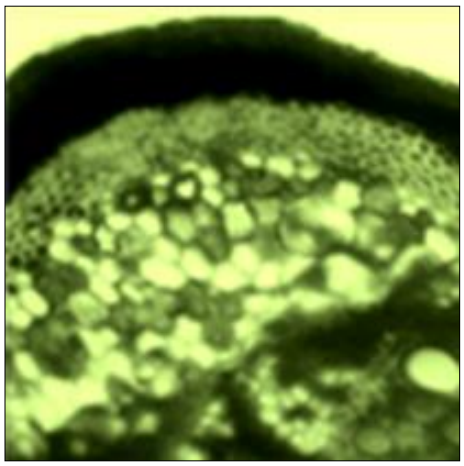


(Fig. (d)Transverse Section of Stem)

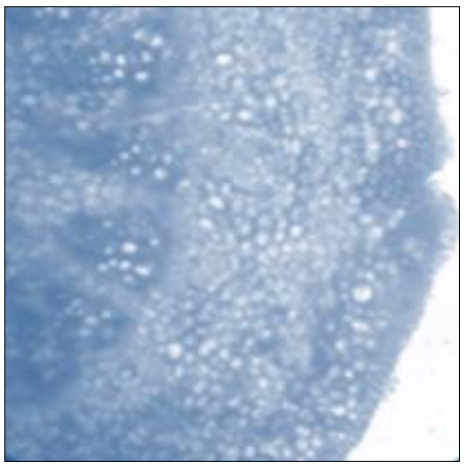
Plate-II: Histochemical Study of *D. falcata* Stem (Figures e, f, g and h)



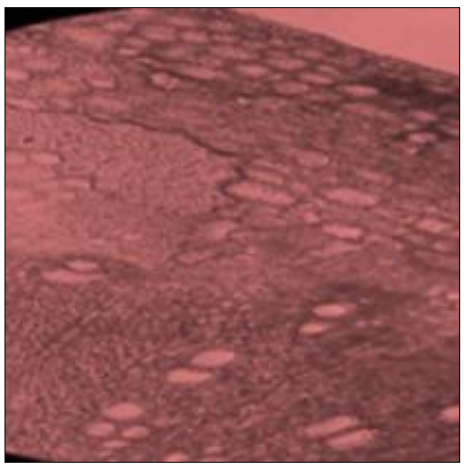
Starch



Tannins



Proteins



Alkaloids

Conclusions

The aqueous paste of the plant is key characteristic as binding material was proved very benefetial when harvested from *Cassia occidentalis* plant. Lenticels, outer and inner bark colours of stem found as markers. The stem possesses many phytochemical constitutes like Starch, Reducing sugars and Proteins along with active chemical constituents like Tannins, Flavanoids, Gycosides, Saponins, Alkaloids etc. These were also identified microscopically with the help of histochemical study. The pith was rich in Starch. Tannins were observed in Epidermis, Hypodermis, Pith. Proteins were localized in epidermis, cortex and pith. Alkaloids were detected in secondary xylem and medullary rays. The solubility of percentage extractive yield in case of water and alcohol was maximum as compared to solvents like Petroleum ether and Solvent ether. In the percentage

extractives study. Ash value and fluorescence analysis provides the data for quality standards.

References

1. Kshirsagar SR, Patil DA. Flora of Jalgaon District Maharashtra. Connaught Place Dehradun India, 2008, 283.
2. Patil DA. Flora of Dhule and Nandurbar District Maharashtra. 23-A Connaught Place Dehradun India, 2003, 521.
3. Diwakar PG, Sharma BD. Flora of Buldhana District. Botanical Survey of India Calcutta India, 2000, 276.
4. Cooke T. Flora of Presidency of Bombay, Botanical Survey of India Calcutta India,1967:3:43-44.
5. Singh NP, Karthikeyan S. Flora of Maharashtra State Dicotyledonous. Botanical Survey of India Calcutta, India,2000:1:838-839.
6. Almedia SM. Flora of Savantwadi Maharashtra India. Scientific Publisher Jodhpur,1990:1:361.
7. Pattanayak SP, Muzumder P. Assesment of neurobehavioural toxicity of *D.falcata* by functional observation after sub acute exposure Phcog.Mag,2009: 5:98-105.
8. Alekutty NA, Srinivasan KK, Gaud RP, Udupa AC, Keshava KR. Diuretic and antilithiatic activity of *D. falcata* Fitoterapia,1993:64(5):325-331.
9. Manamdhar NP. A contribution to the ethnobotany of Mushar tribes of Dhanusa Dist., Nepal, Journal of 1986, Natural History Museum,1986:10(1-4):53-64.
10. Bhattari NK. Folk herbal medicines of Dholaka district Nepal. Fitoterapia,1993:64(5):387-395.
11. Anonymous. Pharmacopeia of India. Government of India. Ministry of Health. Manager Publications. Delhi. Ist Edition, 1955, 82-83.
12. Chase CR, Pratt R, Fluorescence of powdered vegetable drugs with particular reference to development of system of identification, Jour. Amer.Pharm.Asso (Sci.ed),1949:38:324
13. Johansen DA. Plant Microtechniques 1st Edition, Mc. Graw Hill Book Company, Inc., Newyork, 1940, 151-154.
14. Krishnamurthy KV. Methods in Plant Histochemistry S.V. Vishwanathan Private Limited Madras, 1988.