IJPPR
INTERNATIONAL JOURNAL OF PHARMACY & PHARMACEUTICAL RESEARCH
An official Publication of Human Journals
ISSN 2349-7203
HUMAN

Human Journals
Research Article
November 2022 Vol.:25, Issue:4

Macroscopic and Microscopic Evaluation of *Phyllodium pulchellum* Leaf

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Submitted: 30 October 2022
Accepted: 5 November 2022
Published: 30 November 2022

HUMAN JOURNALS
www.ijppr.humanjournals.com

Keywords: *Phyllodium pulchellum*, *Fabaceae*, Folklore, Medicinal plant.

ABSTRACT

Phyllodium pulchellum is an important medicinal plant belongs to Fabaceae family. Most of the plants in Fabaceae family are having good medicinal value and also included in API. *Phyllodium pulchellum* is also from the same family, having more ethnobotanical uses, distributed more in the middle area of Kerala. Many plants existing in India have not been mentioned in any Ayurveda samhitas and nighantus. *Phyllodium pulchellum* is reported to be used a fodder and an edible plant. The plant is used as insect repellent and is used for treating cancer, haemorrhages, fever, oedema, liver injury and viral infections. The plant is reported to contain secondary metabolites such as antimicrobial, antioxidant, antidiabetic, analgesic, anti – inflammatory, antidepressant, enzyme inhibitory, antiviral, hepatoprotective, cytotoxic and antihelmentic activities. Growing civilization, urbanization and industrialization threatened the wealth of plant species. Many important species are declared endangered now. Codified information regarding plants of folklore origin is not documented in the classical texts of Ayurveda. A good number of such medicinal plants have been discretely mentioned. Scientific study and documentation of folklore and exotic plants of medicinal importance becomes need of hour not only to eradicate the scarcity of this problem but also to get a deeper insight of their knowledge. This review gives a brief compilation of macroscopy and microscopy of *Phyllodium pul chellum's* leaf.

1. INTRODUCTION

Phyllodium is a widespread legume genus of more than 350 species occurring throughout tropical and subtropical regions in open woodland and forest. Origin in South - East Asia. The genus includes commonly perennial herbaceous plants or subshrubs.

Phyllodium pulchellum (L.) Benth.

The plant is distributed in the tropical areas and widely distributed in India, Srilanka, Bangladesh and Southern regions of China.

Ayurveda is an art and science of life, explains the principle for the maintenance of health and eradication of disease. Most of our medicines are plant based. Plants have been used for medicinal purposes long before prehistoric period. Recently WHO estimated that 80% of people worldwide rely on herbal medicines for their primary health care needs. As per data available over three-quarters of the world population relies mainly on plants and plant extracts for their health care needs.

Of nearly 10,000 plants used for medicinal purposes in the Indian subcontinent, only 1200 to 1500 have been incorporated into the official Ayurvedic Pharmacopeia. Our Acharya's warn against the use of substance that are not adequately understood. Due to the innumerability of plant species, many drugs were not recorded in classical treatises though they have medicinal properties. Such undocumented and newly introduced herbs are not evaluated scientifically till date. Codified information regarding plants of folklore origin is not documented in the classical texts of Ayurveda. A good number of such medicinal plants have been discretely mentioned at numerous medicinal plants in terms of their Pharmacodynamic properties are not available in the Ayurvedic texts. Therefore, there is an urgent need to first demarcate, identify, name these plants and analyse them scientifically in terms of rasa, guna, virya, vipaka etc. Simultaneously, the plants should be described botanically and evaluated for their chemical composition so that they can be successfully utilised therapeutics and documented by incorporation into Ayurvedic Materia Medica for future reference. Identification and using of Anukta Dravya is the need of the hour, since most of the drug that we commonly using are in the face of extinction, so that we can met the raw materials need to some extent.

2. MATERIALS AND METHODS

2.1 Taxonomic Classification

Kingdom - Plantae;

Division - Phanerogame;

Class- Magnoliopsida;

Sub class - Polypetalae;

Series- Calyciflorae;

Order- Rosales;

Family - Leguminosae;

Sub family – Fabaceae (Papilionaceae)

2.2 Vernacular Names

Hindi - Jatsalpan.

Sanskrit- Lodhrah, Lodram.

Malayalam - Paccotti.

Telugu - Kondontinta, Karrantinta.

Kannada- Kadunhuralite, Jenukkadi, Kadumuduru.

Oriya - Salaparni.

Tamil - Vellalothi.

2.3 Morphology[1]

Phyllodium pulchellum is an erect stoutish shrub 1.2m to 1.5m height, characterised by its finely grey- downy branches.

Leaves - trifoliate, stipules - narrowly triangular, base - round, margin - repand, apex- obtuse, mucronate. Lower surface tomentose. Younger leaves are coppery brown colour. Terminal

leaflet - large with length 10-12.5cm and breadth 3.5-4.5cm. Lateral leaflet 2 to 3cm length and 1.5-2cm breadth.

Inflorescence: Long axillary/terminal racemose inflorescence with length of 20-25cm. Orbicular persistent foliaceous bracts which conceals the flowers and fruits. Bract (length 2.5-3.5cm, breadth 2.5 to 3cm) Flower: Pappilloneous flower, corolla white enclosing 5-8 flowers in bract.

Inflorescence of *Phyllodium pulchellum*

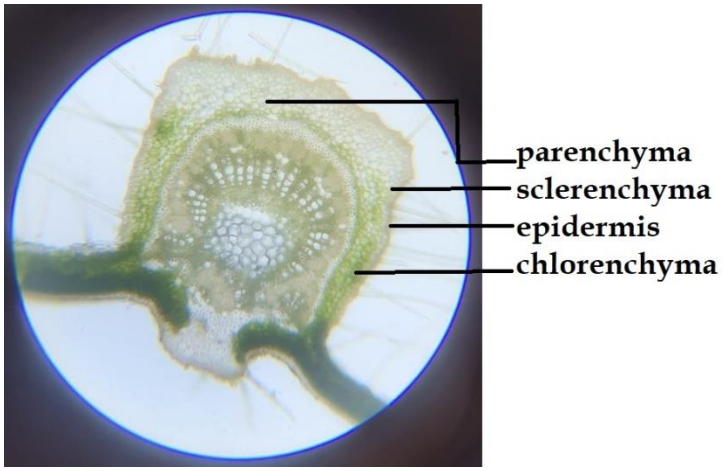
Fruit: Lomentose 10 to 15 in one bunch with 3-5 segments in one pod (7 mm length) indented on both sutures.

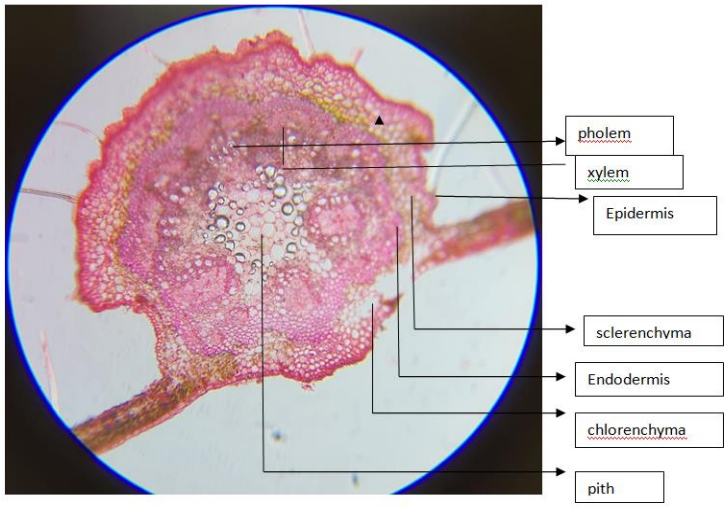
Seed: One seed, ellipsoid or orbicular, compressed seed, reniform.

Root: Taproot with nodules.

Root of *Phyllodium pulchellum*

2.4 Histology





T.S of *Phyllodium pulchellum* (a) Unstained (b) Stained

Epidermis

Irregularly margined upper epidermis formed of single layered parenchyma cells. Upper and lower epidermal layers possess both glandular and non – glandular hairs. The trichomes are uniseriate and 1-3 celled. Both epidermal layers show the presence of anomocytic stomato. Just below the epidermis parenchymatic cells are there. A sclerenchymatous bundle sheath covering the vascular bundle, seen inner to the upper and lower epidermis. In between the sclerenchyma and upper epidermis 4-5 layer irregularly arranged parenchymatous cells are present.

Vascular Bundle

The midribconsists of vascular bundle, which is almost U- shaped. Open end archvascular bundle with small pith. In all vascular bundles xylem is towards the ventral surface and phloem towards the dorsal surface, in a centrifugal pattern.

2.5 Ethnobotanical Uses

Phyllodium pulchellum is consumed as an edible plant in all seasons in cultural forests of northeastern Thailand. The plant is as an essential component of Suzen, a local rice beer of Deori tribe of Assam, which is consume in all the festive occasions and celebrations. In Philippines, the whole plant or leaf and stem of the plant, either by burning or hanging inside the house, are used as hematophagous insect repellent. The decoction prepared from the roots of *Phyllodium pulchellum* and *Phyllodium longipes* is used to cure cancer in Thailand. The plant decoction is used to reduce labour pain and to cure fever[2].

Paste of root mixed with sugar candy used for abdominal and chest burning.

In UP bark decoction used in haemorrhages, diarrhoea, poisoning and eye diseases.

Flowers used in biliousness and dental caries.

Leaves used for wounds.

The stem bark is given for headache.

3. CONCLUSION

Most of the plants in *Fabaceae* family are having good medicinal value and included in API. *Phyllodium pulchellum* is also from the same family, having more ethnobotanical uses and

seen more in the middle parts of Kerala. Many folklore and exotic plants existing in India have not been stated in Ayurveda *Samhitas* or *Nighantus* important medicinal plant belongs to *Fabaceae* family. The plant is widely used to treat various diseases such as anti-inflammatory, analgesic, antioxidant, haemorrhage, diarrhoea, poisoning and eye diseases.

Further, this study has revealed that the importance of Anukta Dravya, which will help the future generation to use these dravyas, having great medicinal value. It was also observed that the incorporation of very popular folk medicines and exotic plants into Ayurveda and in therapeutics would fill the gap in Ayurvedic Pharmacopoeia where the classical drugs are facing the problems of scarcity.

4. REFERENCES

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