

Phytochemical Investigation of *Jasminum Multiflorum* and Microscopic Studies

Gore Meghana* and Mohite Madhuri

Gourishankar Institute of Pharmaceutical Education & Research, Limb, Satara, India-41501

Date of Submission: 10-03-2025

Date of Acceptance: 20-03-2025

ABSTRACT:

The *Jasminum multiflorum* commonly known as Kaunda. In the pharmacognostic study of *Jasminum multiflorum* (leaf) was carried out the some major pharmacognostic study includes macroscopic, microscopy, phytochemical screening highest valves presences of phenols, terpeoids and saponins.

KEY WORDS: *Jasminum Multiflorum* , Phytochemical Screening , Pharmacognostic Study

I. INTRODUCTION:

Jasminum multiflorum is a species of jasmine in the family oleaceae and is commonly known as winter jasmine, Indian jasmine, downy jasmine (English) kundah or meghamallika (Sanskrit) and kundphul (Hindi) ,kund (Marathi)

It is an evergreen twinner shrub with young branches clotted with vevley pubescence leaves are simple, ovate, opposite, base rounded or chordate; flowers are fragrant seen in terminal and axillary cymes. It is also sources of fragrant oil for perfume making and cosmetic. *Jasminum multiflorum* is an evergreen ornamental plant of sprawling shrub or climber of one foot or hedge of 5 to 6 feet. The flowers of *Jasminum multiflorum* are bitter refrigerant, laxative, cariotonic, depurative and digestive and useful in vitied conditions of pitta. The leaves and flowers are reported to passess coronary vasodilating and carditropic pharmacological properties .the direed leaves are used to treat indolent ulcer and juice to treat tyhoid and stomach ache secoiridoid lactones and their glycosides are the major compound leaves and stem are hairy or pubescent. Classification of the plant is given in table

Classification of *Jasminum Multiflorum*

| | |
|---------------|-----------------------------|
| Kingdom | Plantae |
| Subkingdom | Tracheobionta |
| Superdivision | Spermatophyta |
| Division | Magnoliophyta |
| Class | Magnoliopsida |
| Order | Scrophulariales |
| Family | Oleaceae |
| Genus | <i>Jasminum</i> |
| Species | <i>Jasminum multiflorum</i> |

The whole plant is having medicinal properties. The dried leaves are good for indolent ulcers, secoiridoid lactones i.e. jasmolctones A, B,C,D are also isolated which contains a novel bicyclic 2-oxo-oxepano [4,5,6] pyran ring from arial parts and secoiridoid glycoside multiflorosidemultiraside and 10- hydroxylcoside - 11 methyl ester have been isolated from *Jasminum multiflorum*. Hence in this work an attempt for standardization of *Jasminum multiflorum* to study the morphology, anatomical, physiochemical and preliminary photochemical analysis of leaf was done.

II. MATERIAL AND METHOD:

Plant Collection:

The leaf of *Jasminum multiflorum* was collected from local garden satara, Maharashtra. The leaf material was identified from Y.C.Institute of Science, Satara

Extraction method:

The dried leaves powder (25gm) was extracted in soxhlet apparatus by using 25 ml of different solvent having different polarities like ethanol, methanol, ethyl acetate, and acetone and n-hexane for 48 hrs.And then concentrated by evaporation these prepared extracts were used for phytochemical analysis.

Pharmacognostic studies:

Macroscopic characteristics:

For morphological observations fresh leaves were used. The macro morphological features of leaf were observed under magnifying lens.

Microscopic characteristics:

Free hand section of leaf was taken and stained by saffranins reagent to confirm its lignifications.

Physicochemical parameters:

The physicochemical parameters were like total ash value, loss on drying, water soluble ash, acid insoluble ash, petroleum ether, methanol, acetone and water soluble extractive value, pH value, heavy metal analysis, solubility, etc were determined as per WHO guidelines.

Phytochemical analysis:

The qualitative phytochemical tests of crude powder and Ethanol, Methanol, acetone, n-Hexane, Ethyl Acetate extract were carried out to identify different phytoconstituents.

III. RESULTS AND DISCUSSION:

Macroscopic characteristics:

Macroscopically it is an evergreen twinning shrub with young branches clothed with velvety pubescence leaves are simple, ovate, opposite, base rounded or cordate.

Microscopic characteristics:

It consists of single layered epidermis, on either side, upper epidermis composed of single layer closely arranged elongated cells externally covered with striated cuticle. Leaf surface contains simple, multicellular covering trichomes and normocytic type of stomata. Below the upper epidermis 3-4 layers of well developed more or less isodiametric collenchymatous tissue were observed.

Midrib contains centrally located vascular bundle which is collateral surrounded by some parenchymatous cells filled with dark content. Xylem is well developed and the phloem consists of strands of sieve tubes and small celled parenchyma.

Lower epidermis consisted of single layer elongated cells with cuticle and just above the lower epidermis 2-3 layers of parenchymatous cells followed by the layers of collenchymatous cells were present. Calcium-oxalate crystals were found in spongy parenchyma. Lower epidermis contains more number of covering trichomes as compared to upper epidermis.



Fig1:-leaves of *Jasminum multiflorum*

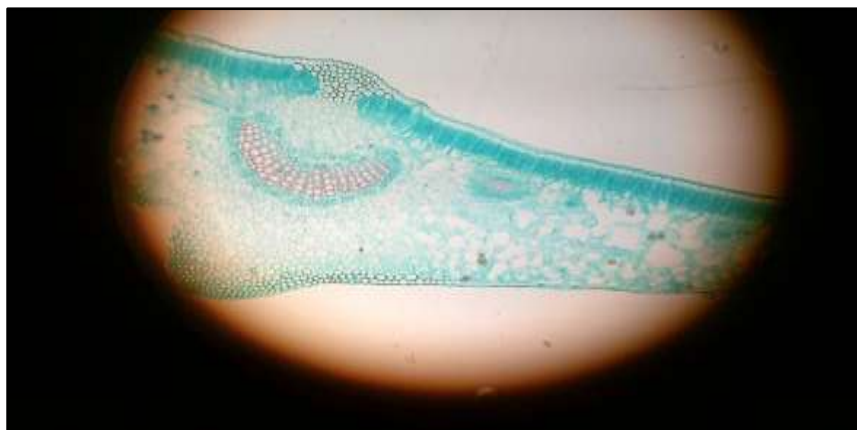


Figure No 2:- Microscopy of leaf ofjasminummultiflorum

Physicochemical parameters:

The Loss on Drying, Ash Values likes (Total Ash, Acid insoluble ash, Water soluble ash),

Loss on drying, Methanol soluble extractive, Water soluble extractive of leaf powder are given in table-2.

| Sr. No. | Physical Constants | Result |
|---------|--|---|
| 1. | Ash Value (% w/w) <ul style="list-style-type: none"> • Total Ash • Acid Insoluble Ash • Water Soluble Ash | 12.67 5.24 4.50 |
| 2. | Loss on Drying (% w/w) | 86.8 |
| 3. | Extractive Values (% w/w) <ul style="list-style-type: none"> ➤ Ethanol Soluble Extractive. ➤ Methanol Soluble Extractive ➤ Ethyl Acetate ➤ Acetone ➤ n- Hexane | 0.200 0.249 0.260 0.235 0.254 |

Phytochemical analysis:

| Phytochemical | ethanol | Methanol | Ethyl acetate | Acetone | n- hexane |
|--------------------|---------|----------|---------------|---------|-----------|
| Phenol | + | + | + | - | - |
| Flavonoid | - | - | - | - | - |
| Quinones | - | - | - | - | - |
| Tannins | - | - | - | - | - |
| Saponins | - | + | - | - | - |
| Cardiac glycosides | - | - | - | - | - |
| Terpenoids | - | - | + | + | - |
| Steroids | - | - | - | - | - |

IV. CONCLUSION:

The results revealed the presence of medicinally important constituents' in the plant. The traditional medicines practices are recommended strongly for this plant as well as it is suggested that further work should be carried out to isolate purify and characterize the active constituents responsible for the activities.

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