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Physico and phytochemical evaluation of *Jasminum sambac* leaf extract

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Abstract

Objective: The present work attempts to carry out preliminary phytochemical screening and physicochemical evaluation of leaf of *Jasminum sambac*.

Methods: *Jasminum sambac* leaves were used to study for preliminary phytochemical screening of powder drug. Physicochemical parameters were also performed as per WHO guide lines.

Results: The preliminary phytochemical screening showed presence of carbohydrates, tannins, flavonoids, steroids, glycosides, phenolic compounds and triterpenoids in the ethanolic extract.

Conclusion: These studies provided referential information for correct identification and standardization of this plant material and detection of adulterants of this plant material.

Keywords: *Jasminum sambac,* Phytochemical screening, Physicochemical evaluation

Jasminum sambac Linn. (Family-Oleaceae) commonly known as Motia or lily jasmine is a scandent or sub-erect shrub with young pubescent branches, broadly ovate or elliptic, opposite leaves, white, very fragrant flowers cultivated nearly throughout the tropical and sub-tropical parts of the world [1]. Traditionally leaves are used in fever or cough, indolent ulcer, abdominal distension, diarrhoea, lowering the blood glucose level, regulating menstrual flow, to clean kidney waste, inflamed and blood shot eyes [2, 3]. The plant is reported to have to have antidiabetic, antitumor, antimicrobial, antioxidant, anti-acne [3]. In spite of the numerous medicinal uses attributed to this plant, pharmacognostic information about this plant has not been published. Hence, the present investigation involves the establishment of phytochemical screening and physicochemical evaluation of the ethanolic extract of the leaves that will assist in standardization for quality, purity and sample identification.

Leaves of *Jasminum sambac* were collected from the local market of Bhopal. The collected leaves were dried under shade at room temperature (25°C) for 10 days and powdered to a coarse consistency in a grinder mill. The powder was passed through 40 # mesh particle size and stored in an airtight container at room temperature.

2.5 kg of the fresh air-dried powered crude drug of *Jasminum sambac* was extracted with 95% ethanol by soxhelet apparatus at room temperature for 7 days. The extract was filtered and concentrated to dryness at room temperature to avoid the decomposition of the natural metabolites. The yield of the extracts was ethanol .The extract was preserved in a refrigerator till further use.

The moisture content, total ash, water soluble ash, acid insoluble ash, alcohol and water soluble extractive values were determined as a part of its physicochemical parameters [4, 5]. Petroleum ether, chloroform, ethanol and aqueous extracts were subjected to phytochemical analysis for the presence of various secondary phytoconstituents using standard procedures [6-8].

Phytochemical screening showed the presence of fats, glycosides, carbohydrates, flavanoids, steroids, saponins, proteins and amino acids, tannins and phenolic compounds (Table 2). Physicochemical parameters are important parameters in detecting adulteration and are adopted to confirm the purity and quality of drug. Ash values are particularly important parameter as it shows the presence and absence of foreign matters like metallic salts or silica etc. The percentage of total ash, acid insoluble ash, and water soluble ash were carried out. Extractive values are primarily useful for the determination of exhausted or adulterated drugs. The water soluble, alcohol soluble extractive values were calculated. The results are tabulated in Table 3. The present study on preliminary pytochemical and physicochemical evaluation of *Jasminum sambac* leaf could be used as the diagnostic tool for the standardization of medicinal plant. WHO parameters as per WHO guidelines discussed here, can be considered as the identifying parameters to substantiate and authenticate the drug.

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Table 1: Characterization and determination of percentage yield of the ethanolic extract

S. No.	Name of extract	Extract colour	Yield (in gms)	% Yield (w/w)
1	Ethanolic leaf extract	Dark green	12.51	9.86

Table 2: Phytochemical screening of *Jasminum sambac*

S. No.	Tests	Results
1	Alkaloids	-
2	Carbohydrates	+
3	Gum	-
4	Tannins	+
5	Flavinoids	+
6	Sterols	+
7	Saponins	-
8	Iridoidal glycosides	+
9	Phenolic compound	+
10	Triterpinoids	+

Table 3: Determination of physical constant of *Jasminum sambac*

S. No.	Particular	Report(%w/v)
1	Foreign organic matter	0.001
2	Loss on drying	0.82
3	Total ash	10.76
4	Acid insoluble ash	2.58
5	Water soluble ash	4.56
6	Petroleum ether	1.13
7	Chloroform	2.33

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