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ETHANOBOTANICAL USES AND PHYTOCHEMICAL ANALYSIS OF JASMINUM AURICULATUM VAHL.

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ABSTRACT

Jasminum auriculatum Vahl. is a species of jasmine, in the family Oleaceae. It is found in India, Nepal, Sri Lanka, Bhutan and the Andaman Islands. It is commonly known as 'Jasmine'. The plant having great ethnobotanical values. The present study deals with the ethnobotanical examination of morphological characters and phytochemical values. The preliminary study shows the presence of alkaloids, carbohydrates, tannins, steroids and glycosides. Phytochemical investigation of Jasminum auriculatum Vahl. leaves, stem, and root including determination of loss of drying, ash value and extractive value.

KEYWORDS: Species, Phytochemical value, Alkaloids, Ethanobotany.

INTRODUCTION

The medicinal plants are useful for healing as well as for curing of human disease because of the presence of phytochemical constituents. World Health Organization has reported that nearly 65-80% of world's population in developing countries depends on the traditional medicine for their primary health care and treatment of various diseases.[1] Medicinal plants are a rich source of bioactive phytochemicals or bio nutrients.[2] Which provide health benefits for humans further than those attributed to macronutrients and micronutrients Phytochemicals (from the Greek word Phyto, means Plant) are biologically active naturally occurring chemical compound in plants.[3] Phytochemicals are primary and secondary compounds. Primary Compounds contributing directly to growth and development, including

photosynthesis, respiration, and protein synthesis. Compounds such as carbohydrates, lipids and amino acids. Secondary compounds like Alkaloids, Tannins, Flavonoids, etc. they are not in role of plant growth and development.[4] They only for the protection from herbivores. In general, the plant chemicals that protect plant cells from environmental hazards such as pollution, stress, drought, UV exposure and pathogenic attack are called as phytochemicals.[5] More than 4,000 phytochemicals have been cataloged and are classified by protective function, physical characteristics and chemical characteristics and About 150 phytochemicals have been studied in detail.[6] The medicinal value of plants have assumed a more important dimension in the past few decades owing largely to the discovery that extracts from plants contain not only minerals and primary metabolites but also a diverse array of secondary metabolites with antioxidant potential.[7] *Jasminum auriculatum* Vahl. is a shrub used in traditional medicines, Ayurveda, Siddha and Unani.[8]

Jasminum auriculatum Vahl. is a species of jasmine, in the family Oleaceae. It is native to southern and south eastern Asia and distributed and cultivated more or less throughout South India, Shri Lanka, Pakistan, Nepal, Malaysia, Indonesia, and Australia. A scandent shrub more or less pubescent or velvety, sometime nearly glabrous. Leaves 3- foliolate, the 2 latral leaflets very small, often wanting, the central leaflet broadly ovate or sometimes nearly orbicular, acute, acuminate, or rounded, often apiculate at the apex, velvety – pubescent or glabrous, base usually rounded, main nerves few, inconspicuous, petioles very short. Flowers white in compound, many flowered, pubscent, lax, corymbose cymose, long, punscent, teeth minute, oblong, obtuse, corolla glabrous, long, 5-7 lobes, eliptic oblong, acute, carpel solitary, globose black.[9]

Taxonomical Classification

Kingdom : Plantae

Subkingdom : Tracheobionta – Vascular plants

Super division : Spermatophyta – Seed plants

Division : Magnoliophyta – Flowering plants

Class : Magnoliopsida – Dicotyledons

Sub class : Asteridae

Order : Scrophulariales

Family : Oleaceae – Olive family

Genus **:** *Jasminum*– jasmine

Species: *auriculatum* Vahl

Preferred Scientific Name

- Jasminum auriculatum Vahl.

Other Scientific Names

- Jasminum affine Wight
- Jasminum auriculatum Var. glabrior Haines
- Jasminum mucronatum Rchb. Ex Baker
- Jasminum ovalifolium Wight
- Jasminum trifoliatum (Lam.) Pers.
- Mogorium trifoliatum Lam.

Ethanobotanical Uses

Jasminum auriculatum Vahl. is a shrub used in traditional medicines, Ayurveda, Siddha and Unani.[8] Extensive literature survey has reveals that *'Juhi'* has a long history of traditional uses for wide range of diseases.[10] Root, leaves and flowers of *Jasminum auriculatum* are widely used to cure a number of diseases. The roots are useful in skin diseases especially for ring-worm. Flowers are fragrant but they are useful in burning sensation. Leaves, roots and flower are also useful in stomatopathy, antiseptic, emollient, anthelmintic, ulcers, leprosy, skin diseases, and wounds.[1]

MATERIALS AND METHOD

Collection of plant material

Fresh plants were collected from Matapur Tel- Shrirampur, District- Ahmednagar, and Maharashtra, India. The plant *Jasminum auriculatum* Vahl. it was identified and authenticated at Department of Botany, Sanjivani Arts, Commerce and Science College Kopargaon (Maharashtra). The leaves, root, stem and bark were separated from the plant washed, and shade dried then milled in to fine powder be a mechanical grinder.

Preparation of extract

5g of the each sample of powdered material were extracted with 50 ml of alcohol in a water shaker for 24h. Repeatedly extraction was done with the same solvent till clear colorless solvent is obtained. Obtained extract was evaporated to dryness at room temperature. A semisolid material was obtained. The yield of the each extract material was about 0.05gm. The extract was then subjected to qualitative analysis of stem, root, leaves and bark.[11]

Physico-chemical analysis

Percentage of total ash value and moisture content.[12]

Phytochemical screening

The dried powdered leaves were subjected to successive solvent extraction.[13]

RESULT

Physico-chemical analysis

In quantitative analysis, Alcoholic extract of *Jasminum auriculatum* Vahl. showed the following results were tabulated the percentage of ash value, and moisture content in stem, leaf, bark and root sample. (**Table. 1).**

Table 1: Ash values and Moisture content of Alcoholic extract of *Jasminum auriculatum* Vahl.

S. N.	Parameters	Values in percentage			
		Leaf	Root	Stem	Bark
1	Ash Value	12	2	2	3
2	Moisture Content	8	2	8	4

Phytochemical analysis

In qualitative analysis, Alcoholic extract of *Jasminum auriculatum* Vahl. showed the presence of secondary metabolites such as carbohydrates, glycosides, and alkaloids, steroids and tannins are absence in phytochemical screening which are depicted in table 2.

Table 2: Preliminary phytochemical screening of Alcoholic extracts of Jasminum auriculatum Vahl.

S. No.	Chemical constituents	Test	Leaf Extract	Root Extract	Stem Extract	Bark Extract
1	Carbohydrate	Molish's Test	+	+	+	+
2	Alkaloids	Dragendroffs Test	-	-	-	-
		Mayer's Test	-	-	-	-
		Hager's Test	-	-	-	-
		Wagner's Test	-	-	-	-
		Murexide Test	-	-	-	-
3	Glycosides	Legal's Test	-	-	-	-
		Keller- Killiani Test	+	+	+	+
		Test for Saponin	+	+	+	+
4	Tannins	dil. HNO_3 Test	-	-	-	-
		$FeCl_3$ Test	-	-	-	-
5	Steroids	Salkawski Test	-	-	-	-

CONCLUSION

The present study showed the pharmacognostical and phytochemical analysis the leaves, stem, root and Bark of *Jasminum auriculatum* Vahl. Pharmacognostical studies like organoleptic evaluation, powder microscopy, physicochemical analysis of leaf, stem, root and Bark extracts of *Jasminum auriculatum* Vahl. provides valuable information to the identification and authentication of this plant materials. Preliminary phytochemical investigation of the alcoholic leaf extract revealed the presence of glycosides, alcoholic stem and bark extract revealed the presence of carbohydrates and glycosides, alcoholic Root extract revealed the presence of carbohydrates, Tannins and glycosides.

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