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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. leaf, 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.
- *Mogoriumtrifoliatum* 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 and authentication

Sample material was collected and authenticated from Department of Botany, Sanjivani College of Arts, Commerce and Science. Different parts of sample was separated and dried by natural method and physicochemical parameter was checked for each parts. Further parts was send for extraction separately with solvents such as alcohol, dried extract was further investigated for phytochemical tests.

Preparation of extract

50 g of the each powdered material was extracted with 500 ml of alcohol in a macerator at a room temperature. Extract was filtered and concerted by evaporation to dryness at room temperature. A semisolid material was obtained. The yield of the each extract material was calculated. The stem, root, leaves and bark extract was then subjected to qualitative analysis and quantative analysis such as extractive value, moisture content, ash value Phytochemical tests etc.[11,12,13]

RESULT

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

Physico-chemical analysis

Physicochemical evaluation was carried out on sample and results were showed in table no.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
3	Extractive value	5	3	4	3.5

Phytochemical analysis

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

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

Sr. No	Chemical constituents	Test	Alcoholic extract			
			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, miscroscopic evaluation, physicochemical, phytochemical analysis of leaf, stem, root and bark extracts of *Jasminum auriculatum* Vahl. provides valuable information for the standardization 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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