

A scientific review of the *Jasminum* species with reference to Ayurvedic and botanical literature

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Abstract:

Jasminum, commonly known as jasmine, encompasses a group of species widely recognized in Ayurvedic medicine for their diverse therapeutic potential, particularly in wound healing and skin conditions. This paper presents a comprehensive review of *Jasminum* species from ancient Ayurvedic texts to modern botanical classifications. Through historical analysis, taxonomy, morphological descriptions, and detailed reviews of synonyms, properties, actions, and vernacular names, this study aims to bridge classical knowledge with contemporary understanding. The review also highlights the chemical constituents and pharmacological relevance of key species, setting a foundation for future clinical applications and *pharmacognostic* research.

Keywords: *Jasminum*, Ayurveda, Nighantu, botanical review, pharmacognosy, wound healing, medicinal plants

Introduction *Jasminum* species, traditionally referred to as Jati and its *bhedas* (varieties), have been utilized in

Indian medicine since the Samhita period. These plants are known for their fragrance and medicinal properties, prominently mentioned in ancient texts like *Charaka Samhita*, *Sushruta Samhita*, and *Astanga Hridaya*. Across centuries, various Nighantus (Ayurvedic *materia medica*) such as *Dhanvantari Nighantu*, *Raja Nighantu*, and *Bhavaprakasha Nighantu* have elaborated on their types, actions, and therapeutic indications. This paper aims to consolidate such dispersed information with modern botanical classification for a scientific understanding of these species.

Materials and Methods This review is based on classical Ayurvedic texts and recent botanical references. Historical texts were systematically analyzed to extract descriptions of *Jasminum* species and their respective properties, synonyms, and indications. Cross-verification was performed using botanical databases such as The Plant List and e-Flora of India for taxonomic consistency.

Results and Discussion

1. **Historical Context and Varieties:** The term "Jati" has been used to denote various species of *Jasminum*, with classical texts documenting up to six varieties. Major references include:

- Charaka: Jati in Kushtaghna Dasaimani Gana¹
- Sushruta: Jati in shirovirechana and surgical applications²
- Bhavaprakasha: Classification into Jati, Swarnajati, Mallika, Varshika, Yuthika, and Peetha Yuthika³

Table 1. Varieties of Jati according to different Ayurvedic texts

Varieties	D.N	SH.N	M.N	R.N	K.N	BP.N	SHA.N	N.A	P.N
Jati/SwarnaJati	+	+	+			+	+	+	+
Malati					+				
Mallika	+		+	+	+	+	+	+	+
Yuthika/Swarnayuthika			+	+		+	+	+	+
Varshika	+			+		+	+		

2. Synonyms and Vernacular Names:

Table 2. Synonyms of Mallika in various Nighantus^(4,5,6,7,8,9,10)

Nighantu	Synonyms
D.N	Mallika, Shitabhiru, Madyanti, Pramodini, Madniya, Gavakshi, Bhupadi
M.N	Modani, Madyantika, Muktabandha, Mallika
R.N	Mallika, Modini, Shitabhiru, Bhadravalli, Gauri, Vanachandrika, Priya
K.N	Bhumandli, Mallika, Madniya, Viputa, Trunyashunya, Shitabhiru
BHA.N	Madyantika, Mallika, Bhupadi, Shitabhiru
N.A	Mallika, Varshika, Shitabhiru, Bhupadi
P.N	Mallika, Modyanti, Shitabhiru

Table 3. Synonyms of Jati in various Nighantus^(4,5,11,9)

Nighantu	Synonyms
D.N	Jati, Sumna, Rajputri, Priyamvada, Malati, Chetika, Tailbhavini
M.N	Jati, Sumna, Priyamvada, Malati, Peeta, Satyapra, Peetapushpa, Kanchanpushpika
SHA.N	Sumna, Jati, Malati, Chetika, Surpriya
N.A	Sumna, Jati, Malati

Table 4. Synonyms of Yuthika in various Nighantus^(4,12,8,11,9)

Nighantu	Synonyms
D.N	Balapushpa, Bahuganda, Gunaujjwala, Ganika, Charumoda, Shikhandi
MP.N	Shikhandi, Yuthika, Harini, Bala, Pushpagandha
BHA.N	Ambastha, Ganika
SHA.N	Yuthi, Vasanti, Shikhandi, Balpushpi, Harini
N.A	Sumna, Yuthika, Balpushpi, Punyaganda

Table 5. Vernacular names of *Jasminum* species in various Indian languages¹³

Species	English Name	Hindi	Mara thi	Beng ali	Kannad a	Tamil	Telugu	Malaya lam	Guja rati	Punj abi
<i>Jasminum officinale</i>	Common Jasmine	Champa	Chambeli	Chameli	Ajjige	Manmadabanam	Jati	Piccakamulla	Chambeli	Champa
<i>Jasminum grandiflorum</i>	Catalonian Jasmine	Chameli	Chameli	Chameli	Jati	Kotimalligai	Jati	Piccakamulla	Chameli	Champa
<i>Jasminum sambac</i>	Arabian Jasmine	Moghara	Mogri	Balphur	Mallige	Mullai	Malati	Pichkamulla	Dojar	Chameli
<i>Jasminum multiflorum</i>	Downy Jasmine	Kunda	Mogra	Kundphul	Magimalige	Magarandam	Gajari	Kundam	Malle	—
<i>Jasminum malabaricum</i>	Malabar Jasmine	—	Kundi	—	Kadumallige	Kotivakai	—	—	—	—
<i>Jasminum auriculatum</i>	Needle Flower	Juhi	—	Umbustha	Kadaramallige	Udigai	Adavi molla	Bolidda	—	—
<i>Jasminum humile</i>	Yellow Jasmine	Peela Chameli	Pivli Chameli	Holud Jui	Haladi Mallige	Manjal Malligai	Pasupu Malle	Manja Malli	—	—

3. Taxonomy and Botanical Classification:

Belonging to the Oleaceae family, *Jasminum* is a genus of shrubs and climbers. Key species include:

- *Jasminum officinale*
- *Jasminum grandiflorum*
- *Jasminum sambac*
- *Jasminum multiflorum*
- *Jasminum malabaricum*
- *Jasminum auriculatum*
- *Jasminum humile*

Table 6. Taxonomy of *Jasminum* species¹⁴

Taxonomic Rank	Classification
Kingdom	Plantae
Division	Tracheophyta
Class	Dicotyledonae
Suborder	Asteranae
Order	Lamiales
Family	Oleaceae
Genus	<i>Jasminum</i>
Species	<i>J. officinale</i> , <i>J. grandiflorum</i> , <i>J. sambac</i> , etc.

4. Morphology and Flowering: Botanical Descriptions of *Jasminum* Species:

- ***Jasminum officinale* Linn.¹⁵**
 - *Habitat*: Sub-tropical North-West Himalayas, Kumaon, Rajasthan, Central India
 - *Habit*: Large twining shrub, nearly glabrous
 - *Leaves*: Pinnate, 7–11 rhomboid-ovate leaflets
 - *Flowers*: Axillary/terminal cymes, white with pink tinge, 3–3.8 cm across
 - *Flowering Time*: June–October
 - ***Jasminum grandiflorum* Linn.¹⁶**
 - *Habitat*: Native to NW Himalayas, from Himachal Pradesh to Nepal
 - *Habit*: Large scandent shrub
 - *Leaves*: Pinnate, 7–11 glabrous leaflets
 - *Flowers*: Axillary/terminal cyme, fragrant, pedicel up to 2.5 cm
 - *Flowering Time*: June–October
 - ***Jasminum sambac* (Linn.) Aiton¹⁷**
 - *Habitat*: Cultivated throughout India
 - *Habit*: Scandent or suberect shrub, pubescent branches
 - *Leaves*: Oval to oblanceolate
 - *Flowers*: Solitary or 3–7 flowered cymes, fragrant, white
 - *Flowering Time*: Throughout the year
 - ***Jasminum multiflorum* (Burm.f.) Andrews¹⁸**
 - *Habitat*: Sub-Himalayan tract and moist forests of Western Ghats
 - *Habit*: Scandent or erect, tomentose young parts
 - *Leaves*: Oval, tomentose, up to 7.5 x 4 cm
 - *Flowers*: Dense terminal cymes, sessile
 - *Flowering Time*: Year-round
 - ***Jasminum malabaricum* Wight¹⁹**
 - *Habitat*: Konkan, Malabar, Nilgiris up to 1,200 m
 - *Habit*: Large climbing shrub
 - *Leaves*: Broadly oval, acuminate, glabrous
 - *Flowers*: Terminal cymes, fragrant
 - *Flowering Time*: February–March
 - ***Jasminum auriculatum* Vahl²⁰**
 - *Habitat*: Throughout India
 - *Habit*: Scandent shrub, velvety or pubescent
 - *Leaves*: Trifoliate with often missing lateral leaflets
 - *Flowers*: White, fragrant, paniculate cymes
 - *Flowering Time*: June–August
 - ***Jasminum humile* L.²¹**
 - *Habitat*: South India (e.g., Karnataka, Udupi region)
 - *Habit*: Semi-evergreen shrub, 1–3 m tall
 - *Leaves*: Pinnate, 3–7 ovate-lanceolate leaflets
 - *Flowers*: Yellow, mildly scented, in lax clusters of 2–10
 - *Flowering Time*: March–June
- Each species displays distinct morphological and phytochemical profiles. Their flowering times range

from specific months (June–October) to all year-round.

5. Phytochemical Composition: species^(15,16,17,18,19,20,21)

Table 7. Key chemical constituents of selected *Jasminum*

Species	Major Chemical Constituents
<i>J. officinale</i>	Resin, Salicylic Acid, Jasminine, Tannin
<i>J. grandiflorum</i>	Indole, Methyl jasmonate, Cisjasmone
<i>J. sambac</i>	Friedelin, Lupeol, Jasminin, Sesquiterpenes
<i>J. multiflorum</i>	Bioflavonoids, Minerals
<i>J. malabaricum</i>	Flavonoids, Tannins
<i>J. humile</i>	Alkaloids, Flavonoids, Phenolics, Glycosides, Saponins, Terpenoids

6. Rasa,Guna, and Veerya and Karma (Therapeutic Actions) of *Jasminum* Varieties according to Classical Texts.

Table 8 . Rasa, Guna, and Veerya of *Jasminum* Varieties according to Classical Texts

<i>Jasminum</i> Variety	Nighantu	Rasa	Guna	Veerya
<i>Jati / SwarnaJati</i>	BHA.N	Tikta, Kashaya	Laghu	Ushana
	SHA.N	Tikta, Katu	Laghu	Ushana
	A.N	Kashaya	Laghu	Ushana
	P.N	Tikta, Kashaya	-	-
<i>Malati</i>	K.N	Kashaya, Tikta, Katu	Laghu	Ushana
<i>Mallika</i>	D.N	Madhura	-	Ushana
	M.N	-	-	Ushana
	K.N	Tikta, Katu	Laghu	Ushana
	BP.N	Tikta, Katu	-	Ushana
	P.N	Katu	-	Ushana
<i>Varshika</i>	D.N	-	-	Sheeta
	BHA.N	Tikta	-	-
	SHA.N	Tikta	-	-
<i>Yuthika</i>	MP.N	-	Laghu	Sheeta
	R.N	Katu, Tikta	-	-
	BP.N	Tikta, Katu	Laghu	Ushana
	SHA.N	Tikta	-	-
	P.N	Madhura	-	Sheeta

Table 9. Karma (Therapeutic Actions) of *Jasminum* Varieties according to Classical Texts

<i>Jasminum</i> Variety	Nighantu	Karma / Indication
<i>Jati / SwarnaJati</i>	D.N	Mukharoha, Kustha, Vrana, Chakshusya, Kaphahara, Pittahara
	Sho.N	Sangrahini, Kaphahara, Pittahara, Vatakrit
	M.N	Murdha, Netra, Danta, Vranahara, Raktarogahara
	R.N	Kubja, Netra, Vrana, Vishaphota, Kusthahara
	BP.N	Shira, Mukha, Netra, Danta Roga

	P.N	Mukharoga, Varna, Kustha, Netraroga
<i>Malati</i>	K.N	Rakta, Hrudaya, Kustha, Aruchi, Visha, Vrana
<i>Mallika</i>	D.N	Netraruja, Pittavatahit
	M.N	Varshya, Vata-Pitta-Rakta Roga
	R.N	Kushta, Vishphota, Kandu, Visha, Vranahara
	K.N	Shira, Netra, Mukha, Danta, Visha, Kustha
	BP.N	Vata-Pitta, Mukha, Netra, Kushta, Aruchi, Visha, Vranahara
	P.N	Vata-Pittashamka, Netra, Mukharoga
<i>Yuthika / Swarnayuthika</i>	MP.N	Murdha, Akshi Roga, Kapha-Vatakrit
	R.N	Pitta, Daha, Trishna, Tvakvikarahara
	BP.N	Vrana, Visha
	P.N	Pittashamka, Jwara, Mutrala
<i>Varshika</i>	D.N	Hrudya, Pittashamka
	R.N	Vata-Kapha, Visha, Visphota, Krimi, Aamdoshanashana
	BP.N	Karna, Akshi, Mukharoga

Conclusion:

The *Jasminum* genus, particularly within the Ayurvedic pharmacopeia, represents a valuable group of medicinal plants with extensive historical, therapeutic, and botanical relevance. The integration of classical literature with modern taxonomy reveals the species' versatility in treating various ailments, especially skin and mucosal disorders. Future pharmacological studies are warranted to validate and utilize these traditional claims for therapeutic innovation.

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LIST OF ABBREVIATIONS

B.P	Bhavprakash Nighantu
R.N	Raja Nighantu
D.N	Danvantri Nighantu
SHO.N	Shodala Nighantu
K.N	Kaideva Nighantu
M.N	Madanpala Nighantu
P.N	Priya Nidhantu
SHA.N	Saligram Nighantu
N.A	Nidhantu Aadrsa