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Review Article

Analysing the Impact of *Jasminum sambac* in Cosmetic Applications: A Comprehensive Review

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ABSTRACT

Cosmetics play an important role in enhancing our appearance and supporting self-care. They encompass a wide variety of products for skin, hair, and dental health, reflecting personal and cultural preferences. The industry is increasingly embracing natural ingredients, which many consumers prioritize for their safety and effectiveness. Ayurveda promotes a holistic approach to beauty, often incorporating herbal ingredients. One key herb is *Jasminum sambac*, or "mogra," known for its delightful fragrance and beneficial compounds like glycosides and flavonoids. Jasmine is commonly found in products such as facial oils, serums, and moisturizers, where it helps hydrate the skin and regulate oil production. It is particularly effective in soothing the skin and addressing acne. Ongoing research into jasmine's properties further emphasizes its significance in both cosmetics and traditional medicine.

INTRODUCTION

Herbal plants play a vital role in the discovery and development of new drugs, serving not only as direct sources of therapeutic agents but also as precursors for approximately half of the clinical drugs available on the market. In many developing countries, herbal plants are extensively utilized for the prevention and treatment of various ailments, largely due to their accessibility and the high costs associated with conventional pharmaceuticals. The term "jasmine" is derived from the Arabic word "Yasmin." The genus *Jasminum*, which

belongs to the Oleaceae family, includes several species, with *Jasminum sambac* being particularly prominent. This multifunctional plant is valued for its ornamental attributes, traditional medicinal uses, and as a source of essential oil. *Jasminum sambac* has a rich history within various cultural practices and remains an important element in both traditional and contemporary therapeutic formulations. Its diverse applications highlight the significance of herbal plants in promoting health and wellness.

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Figure 1 jasmine flower

1.1 HISTORY:

Jasmine has a rich and diverse history across cultures. Originating in ancient Persia (modern-day Iran), it reached Egypt by 1000 BCE, where it was valued for its fragrance in baths and funerary practices. In Arab mythology, jasmine is linked to a nomadic figure named Jasmine. In India, jasmine cultivation dates back to at least 300 BCE, featuring prominently in Tamil poetry, the Vedas, and the Kamasutra, and it remains significant in weddings and religious rituals.

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Jasmine arrived in China during the Han Dynasty (206 BCE – 220 BCE) and became popular among the elite by the Tang Dynasty. By the Song Dynasty (960 – 1279 CE), jasmine tea was documented for royalty .

In the 1500s, jasmine was introduced to Europe through Arab trade, becoming a key component of the perfume industry in Grasse, France. The variety *Jasminum sambac* was brought to the Philippines in the 1700s and became the national flower in 1935, later adopted by Indonesia in 1990 . In Tunisia, jasmine was introduced by Andalusians in the 1600s and became a symbol in the Jasmine Revolution. Similarly, it represented the 2011 pro-democracy protests in China, highlighting its enduring cultural significance .

BIOLOGICAL SOURCE

Table 1 Biological source of jasmin species

PLANT NAME	<i>Jasminum grandiflorum</i> Linn
SUB KINGDOM	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
SPECIES	Grandiflorum Linn.
CLASSICAL NAME	Jati, Sauanasyayani, Sumama, Chetika, Hridyagandha, Malati, Rajaputrika
VERNACULAR NAME	Hindi- Jati, Cameli Tamil Jatimalli, Kotimalligai, Pitchi Sanskrit- Jati, Malati English- Spanish jasmine, common jasmine, Catalanian jasmine

Table 2 Species of Jasmin

Name	Description	Special feature	Image
ARABIAN JASMINE (Jasminu sambac)	Arabian jasmine, also known as "sampaguita," features waxy, white, star-shaped flowers. Its intoxicating fragrance is renowned and used in perfumes and teas.	It blooms throughout the year and can be grown as a shrub or a vine.	
STAR JASMINE (Trachelospermum jasminoides)	Star jasmine showcases clusters of small, white, star-shaped flowers with a sweet fragrance. It is a vigorous vine that adds elegance to fences, trellises, and walls.	The shiny, deep green leaves of star jasmine offer visual appeal throughout the entire year.	
WINTER JASMINE , (Jasminum nudiflorum)	Winter jasmine is distinctive among jasmine species for its winter flowering, which enhances the garden with vibrant yellow blooms. This deciduous climbing vine is characterized by long, arching branches.	Its tendency to bloom in winter adds a touch of brightness to the garden during the colder months.	
JASMINE POLYANTHUM	Commonly referred to as pink jasmine, this species is characterized by an abundant display of small, star-shaped flowers that are pink in color. Its fragrance is notably strong and sweet.	Jasmine polyanthum is a vigorous climber that requires sturdy support to display its abundant blooms effectively.	
CAPE JASMINE (Gardenia jasminoides)	Cape jasmine, although not a true jasmine, is highly esteemed for its large, white, and fragrant flowers. This compact evergreen shrub is adorned with glossy dark green leaves, which contribute to its attractive appearance.	The captivating fragrance of Cape jasmine brings an opulent element to gardens and floral arrangements.	

MICROSCOPY:**SCANNING ELECTRON MICROSCOPIC STUDY OF ADAXIAL SURFACE:**

The adaxial petal surface of both the bud and open flower of *Jasminum sambac* cv. Gundumalli

features papillose conical cells that display striations and a pentagonal shape. Notably, there is no variation in cell shape across the basal, middle, and tip portions of the petals. Each conical cell is equipped with a glandular duct at its tip. Previous



research has indicated that the formation of these conical cells is regulated by a Myb factor called Mixta in *Antirrhinum majus*. The unique shape of these conical cells plays a vital role in guiding pollinating insects.

The morphogenesis of conical papillate epidermal cells in the adaxial epidermis of jasmine flowers closely resembles found in species such as *Arabidopsis*, *Rosa*, *Erysimum cheiri* and *Mirabilis jalapa*. This characteristic is observed in approximately 80% of the angiosperm species.

In C. bewari, RNA in situ hybridization has revealed that certain enzymes involved in scent production are expressed uniformly and exclusively in the epidermal cells of the petals. S-adenosyl-L-methionine: benzoic acid carboxy methyltransferase (BAMT), an enzyme crucial for scent biosynthesis, is localized in the conical cells of the epidermal layer. This suggests that the shape of papillate cells may enhance the emission of volatile compounds in *Jasminum sambac*.

Notably, the adaxial surface of the petals lacks stomata. This absence is consistent with findings indicating that the MIXTA transcription factor, which is crucial for the differentiation of conical cells, reduces stomatal density in tobacco leaves when overexpressed. Although trichomes and conical papillate cells share a common developmental pathway, the pathway for stomatal development is distinct and mutually exclusive from that of trichomes and conical cells, Figure 2 shows the transverse section of Jasmin.

SCANNING ELECTRON MICROSCOPIC STUDY OF ABAXIAL SURFACE:

The abaxial petal surface of jasmine buds features tabular rugose cells (TRS) that are generally isodiametric and display dense longitudinal striations. Stomata are present at the tips of the flower, observed in both bud and open flower stages. In the bud stage, the stomata remain closed, while they open fully in the mature flower. Notably, at the onset of scent release, the stomata on the abaxial epidermis are predominantly open, highlighting their role in facilitating gas exchange during the increased metabolic activity associated with volatile production. Figure 2 shows the epidermal cell of abaxial surface microscopy.

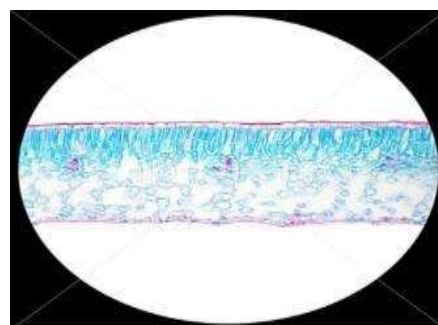


Figure 3 transverse section of epidermal cells of adaxial surface

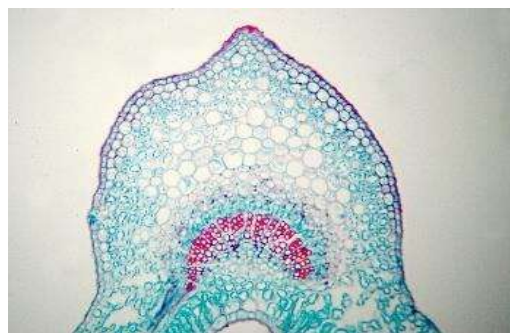


Figure 2 Transverse section of epidermal cell of Abaxial surface

1.4 Chemical Constituents:

Table 3 Detail list of chemical constituent

Parts	Chemical Constituents	Uses
Seed	Arbortristoside A&B, Glycerides Of Linoleic Oleic, Lignoceric, Stearic, Palmitic And Myristic Acids, Nyctanthicacid, 3-4 Secotriterpeneacid.	Scurvy Hair tonic
Leaves	D-mannitol, β -Sitosterole, Flavanol Glycosides-Astragaline, Nicotiflorin, Oleanolic Acid, Nyctanthicacid, Tannic Acid, Ascorbic Acid, Methyl Salicylate, Carotene, Friedeline,	Skin disorders

	Lupeol, Mannitol, Glucose Andfructose	
Flower	Essentialoil,nyctanthin, d-mannitol, tannin and glucose, carotenoid, β -monogentiobioside- β -Dmonoglucosideester of α -croctin, glycosidesviz β - monogentiobioside ester of α -croctin(orcroc-3), β - digentiobiosideesterof α -croctin.	Turning Gray of hair Sparseness
Volatile oil	A-pinene, p-cymene, 1- hexanolmethyl heptanone, phenylacetaldehyde,1- deconolandanisaldehyde.	As perfume Massage oil Attar Hair oil

COLLECTION & CULTIVATION

GEOGRAPHIC DISTRIBUTION

Jasmines are primarily native to the tropical and subtropical regions of Eurasia, Africa, and Australasia, with only one of the approximately 200 species found in Europe. The center of diversity for jasmine species lies in South Asia and Southeast Asia.

Several jasmine species have become naturalized in Mediterranean Europe. For instance, *Jasminum grandiflorum*, commonly known as Spanish jasmine, originally hails from West Asia, the Indian subcontinent, Northeast Africa, and East Africa, but is now established in the Iberian Peninsula. *Jasminum fluminense*, often mistakenly referred to as Brazilian jasmine, and *Jasminum dichotomum*, known as Gold Coast jasmine, are invasive species in Hawaii and Florida. Additionally, *Jasminum polyanthum*, or pink jasmine, has become an invasive weed in Australia .

CLIMATIC CONDITIONS

The ideal conditions for their successful cultivation are warm summer and mild winter. *Jasminum* spp. is usually grown in the open field for commercial flower production. The Cool house species should be kept in a temperature of 45-55° F (7-13° C). *J. grandiflorum* and *J. sambac* are sensitive to frost.

COLLECTION & CULTIVATION:

Preparation of field.

Propagation

- Jasmine can be propagated by cuttings, layering, sucker, grafting, budding and tissue culture.
- Growth regulators: Quick dipping (of the basal cut end) in IAA (or) IBA 1000 ppm for terminal cuttings and 2500 ppm for semi hard wood cuttings is done.
- Best rooting medium-sand: vermiculite: moss at 1:1:1 ratio.

Table 4 Details prapogation of species

SPECIES	SPACING	DENSITY	SEASON	CUTTING METHOD
J auriculatum	1.5*1.5 cm	4400	June to November	Terminal cutting
J grandiflorum	2.0*1.5m	3350	-do-	Terminal and semi Harwood cutting
J sambac	1.25*1.25m	6400	-do-	Semi hard wood cuttings

Time of Planting

Planting jasmine is ideal during the monsoon season in most regions of India, but it may be grown year-round in climes like Bangalore. Jasmine persists in the field for 10-15 years after it is planted.

- Choose land with good drainage, irrigation, and sunlight.
- Dig 45 cm pits one month before planting and expose them to sunlight.



- Before planting, fill the pits with a mixture of 2 parts farmyard manure, 1-part fresh earth, and 1 part coarse sand, then water to settle.

Nutrition- Jasmine responds to intensive manuring. Too much of manuring encourages vegetative growth and hampers quality and quantity of blooms.

Foliar Nutrition - Spraying a solution of 0.25% zinc and 0.5% magnesium before flowering can enhance flower yield. For iron deficiency, apply FeSO_4 at a concentration of 5 g per liter, spraying at monthly intervals until chlorotic symptoms are eliminated.

Irrigation-Flooding should be done once a week or once every 10 days, depending on soil and climatic conditions.

Weeding- Manual weed control is commonly practiced; however, it can be costly. Chemical

weed control methods are both effective and economical. Applying Oryzalin in one or two applications is effective, and mulching can also reduce weed populations.

Harvesting- Jasmine gives economic yield only from the third year and up to 12-15 years and then the yield starts declining. The stage of harvest depends on the purpose of flowers to be harvested. For fresh flowers. Fully developed unopened flower buds are picked in the early morning, while for extraction of concrete only fully opened fresh picked flowers are required. Picking of flowers after 11 a.m. will considerably reduce the yield and quality of the concrete. Damage to flowers during harvest and transit will affect shelf life of fresh flowers and concrete recovery.

Table 5: Harvesting time for Jasmin

SPECIES	TIME OF PRUNING	FLOWERS YIELD	CONCRETE RECOVERY
J.auriculatum	Last week of January	4733 to 9152	0.28 to 0.36
J.sambac	Last week of November	739 to 8129	0.14 to 0.19
J.grandiflorum	Last week of December	4329 to 919152	0.25 to 0.32

Grading and Packing

- Jasmine flowers lack standardized grading; however, they can be assessed based on corolla tube length, bud size, shape, and freshness.

- It is essential to apply cold treatment to harvested flowers prior to packing.

- Packaging should be functional, cost-effective, and visually appealing to comply with market standards; corrugated cardboard boxes are advisable for long-distance shipping.

- Wholesalers typically utilize bamboo baskets for packing.

- The packing process is designed to retain moisture and ensure adequate air circulation within the baskets.

- Water is sprinkled on the newspapers lining the interior of the baskets, and an additional layer of paper is placed on top, secured with either a bamboo basket cover or a stitched gunny sack .

2.4 Extraction of jasmine concrete.

Jasmine concrete, derived from Jathi Malli (*Jasminum grandiflorum*), is a wax-like substance that contains the natural fragrance of the flower, along with plant waxes, albumin, and coloring agents. The natural perfume is present in very small quantities (approximately 0.25%) as volatile oil within the jasmine flowers. Traditional steam distillation methods for extracting volatile oils are not applicable in this case, as jasmines do not yield perfume oil through this technique. Therefore, the solvent extraction method is employed, whereby



the fragrant compounds of the flower are absorbed by a highly volatile solvent. The solvent is subsequently evaporated, leaving behind the aromatic constituents .

The extraction process involves two main steps: solvent treatment and evaporation. Initially,

flowers are soaked in food-grade hexane to dissolve aromatic substances, followed by evaporation to remove the solvent. The final product, floral concrete, is collected as molten wax and stored appropriately .

SUBSTITUTE / ADULTRATION

Table 6 Substitution of Jasmin Species.

Sr No	Subject	Adulteration
1	Oils	Jasmine absolute has a rich, complex floral profile. To replicate this scent, ylang ylang can provide an exotic floral note, while vetiver and patchouli add earthy grounding elements. Combining these with geranium, which offers a rosy, green nuance, results in a well-rounded and fragrant substitute for jasmine.
2	FLOWER	Gardenia flowers, known for their rich, sweet, and creamy fragrance, are often compared to jasmine and roses due to their lush aroma. They are highly valued in perfumery for their intoxicating scent. Additionally, affordable and long-lasting substitutes for jasmine include tubular rose-like flowers, artificial Kanikonna (golden shower), and other floral varieties.
3	Other	Some plants that can be used as a substitute for jasmine include winter jasmine, Jasminum nudiflorum, Snow N Summer Asiatic jasmine, and Trachelospermum asiaticum Hosns.
4	ABELIA MOSANENSIS SWEET EMOTION	This deer-resistant shrub has tubular pink buds that open to pinkish-white flowers that have a jasmine-like fragrance.

Phytoconstituents:

Phytochemical analysis of various extracts from *Jasminum* species (leaves and flowers) revealed the presence of several secondary metabolites. Among the different extracts, the ethanol extract of jasmine leaves exhibited the highest diversity of phytoconstituents, including alkaloids, tannins, flavonoids, cardiac glycosides, proteins, and amino acids. The methanol extract of leaves contained tannins, sterols, terpenoids, flavonoids, and cardiac glycosides. Extracts using other solvents showed fewer components: ethyl acetate contained alkaloids, flavonoids, and cardiac glycosides; chloroform yielded flavonoids, carbohydrates, sterols, and terpenoids; petroleum ether contained tannins, flavonoids, proteins, and

amino acids; and aqueous extract was rich in tannins, flavonoids, sterols, and terpenoids .

For the flower extracts, the ethanol extract again demonstrated the most diverse profile, containing alkaloids, tannins, flavonoids, cardiac glycosides, proteins, and amino acids. The methanol extract of flowers included alkaloids, tannins, cardiac glycosides, proteins, and amino acids. Petroleum ether extracts of flowers showed carbohydrates, sterols, terpenoids, flavonoids, proteins, and amino acids. In comparison, the ethyl acetate, chloroform, and aqueous extracts of flowers contained fewer phytochemicals.

Additionally, volatile compounds such as pentane, benzene methanol, linalool, acetic acid, eugenol, cis-jasmone, α -farnesene, benzoic acid, benzyl benzoate, palmitic acid, isophytol, nerolidol,



methyl linolenate, phytol, phytol acetate, squalene, and solanesol/neophytadiene were identified in jasmine flower extracts. These findings indicate a wide range of bioactive compounds in jasmine, including terpenoids, flavonoids, steroids, glycosides, tannins, and saponins, which contribute to its medicinal and aromatic properties.

COSMETICS USE

1. Jasmine Flowers

- **Aesthetic & Ritual Uses:** Jasmine flowers are commonly used in garlands, bouquets, and religious offerings due to their pleasing appearance and fragrance.
- **Aromatic Products:** The flowers of Spanish jasmine (*J. grandiflorum*) are used to produce jasmine oil, a key ingredient in perfumes, soaps, and cosmetics.
- **Culinary & Medicinal Uses:** In China, Arabian jasmine (*J. sambac*) is used to flavor tea and as a substitute for saffron.
- **Traditional Medicine:** Jasmine flowers are used in folk medicine for treating liver disease, hepatitis, and dysentery.

2. Jasmine Leaves

- **Topical Applications:** Jasmine leaves are used to create a paste that is applied to the skin for conditions such as scabies, itching, and open wounds, promoting healing.
- **Pain Relief:** Extracts of jasmine leaves have shown antinociceptive properties in animals, suggesting potential use in pain management.

3. Jasmine Roots

- **Bladder and Menstrual Health:** The roots are used in traditional medicine to make a paste applied to the bladder for issues like painful urination (micturition) and dysmenorrhea (painful menstruation).
- **Erectile Dysfunction:** Jasmine root paste is also applied to the penile region to support treatment for erectile dysfunction.

4. Jasmine Oil and Its Benefits

- ❖ Jasmine oil, extracted from the flowers of the plant, is celebrated for its numerous skincare and wellness benefits.

❖ Skincare Benefits :

- **Acne Treatment:** Jasmine oil has antiseptic and anti-inflammatory properties that help treat acne by reducing inflammation and eliminating harmful bacteria on the skin.
- **Deep Hydration:** Known for its moisturizing qualities, jasmine oil deeply hydrates the skin, leaving it fresh, smooth, and radiant.
- **Antioxidants for Skin Protection:** Rich in antioxidants, jasmine oil protects the skin from free radicals and environmental stressors, helping to slow down the skin's aging process.
- **Anti-Aging:** By combating oxidative stress, jasmine oil helps to reduce the appearance of fine lines and wrinkles, making it a valuable anti-aging ingredient.
- **Improved Skin Tone:** Jasmine oil boosts the production of collagen and elastin, essential proteins that maintain skin elasticity and firmness, leading to a smoother and more even complexion.
- **Scar & Stretch Mark Reduction:** The oil aids in the regeneration of skin cells, helping to fade scars and stretch marks over time.
- **Soothing Inflammation:** Thanks to its anti-inflammatory properties, jasmine oil is perfect for calming irritated or inflamed skin, making it suitable for those with conditions like eczema and dermatitis.
- **Oil Balance:** Jasmine oil helps regulate natural oil production in the skin, making it beneficial for all skin types, including oily and combination skin. It prevents excess oil buildup while ensuring the skin doesn't dry out.

❖ ADVERSE EFFECTS :

Jasmine is generally considered safe for most people when used in food amounts. However,



there are important safety considerations when using jasmine in medicinal or topical forms, as well as some potential side effects to be aware of.

Oral Use:

- Food Amounts: Jasmine is likely safe for most individuals when consumed in typical food quantities.
- Medicinal Doses: There is insufficient reliable information on the safety of jasmine when used medicinally in larger doses. Therefore, its safety as a medicinal remedy is not well-established.

Topical Use:

- There is limited information regarding the safety of jasmine when applied to the skin as a medicinal treatment. Allergic reactions are possible, and some individuals may experience skin irritation or sensitivities, particularly with jasmine oil.

Pregnancy and Breastfeeding:

- Due to a lack of reliable information, it is recommended that pregnant or breastfeeding women avoid using jasmine in medicinal amounts.

It is safer to consume jasmine in food amounts during these times.

Allergic Reactions:

- While many people benefit from using jasmine oil, it may cause mild allergic reactions in some, especially due to the presence of benzyl acetate, a compound found in jasmine oil. In such cases, discontinuing use is advised.

Jasmine Flower Tea:

- Jasmine tea generally poses few health concerns. However, when jasmine is blended with caffeinated tea (such as green or white tea), the caffeine content can cause side effects like headaches, insomnia, irritability, diarrhoea, and heartburn. While rare, topical application of jasmine tea may also cause skin irritation.

Aromatherapy:

- Jasmine aroma has been shown to increase breathing rate, blood oxygen saturation, and blood pressure, which may promote alertness. However, it can also reduce relaxation for some individuals. Those using jasmine in aromatherapy should be mindful of these effects.

MARKETED FORMULATIONS:

Table 7 Marketed Formulations

TYPE	COMPANY NAME	ACTIVE INGREDIENTS	PRICE (INR)	IMAGE
ATTAR	Ashan	Jasmione Fruity Accord Ylang Green Leaves Middle: White Flowers Orange Blossom Honey Base: Peach White Musk	350	
OIL	MARICO INDIA	Coconut. Jasmine; Vitamin E	229	
PERFUMES	A.A. ATTARWALA & CO. PVT. LTD	Alcohol Denat, Aqua, Parfum, D.E.P. Amyl Cinnamal, Benzyl Alcohol, Cinnamyl alcohol < Citral, Isoeugenol, Benzyl Salicylate, Citronellol, Evernia Furfuace Extract	320	
SOAP	GODREJ	Jasmine, Honey	235	

CREAM	RUBZ	Avocado Oil, Almond Oil, Aloe Vera Extract, Coconut Oil, Olive Oil, Jasmine Extract, Shea Butter, Vitamin E, Perfume, Cream Base Q.S.	524	
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HOME MADE REMEDIES:

Jasmine Tea for Relaxation

Brew a calming cup of jasmine tea by steeping dried jasmine flowers in hot water. The soothing aroma and mild sedative effects can help reduce stress, promote relaxation, and ease anxiety. It's an ideal drink to unwind after a long day or before bedtime.

Jasmine Oil Scalp Massage

Warm jasmine oil can be massaged into the scalp to promote hair health and relieve headaches. The gentle massage stimulates blood flow, while jasmine's calming properties help relax the nervous system, making this a great self-care ritual for both hair and mind.

Jasmine Bath for Skin Health

Add fresh jasmine flowers or a few drops of jasmine essential oil to your bath to enjoy a soothing, skin-nourishing soak. Jasmine has hydrating and anti-inflammatory properties that can leave your skin feeling soft, smooth, and refreshed. Jasmine and Aloe Vera Skin Gel- Mix a few drops of jasmine essential oil with aloe vera gel to create a cooling, soothing balm for inflamed or irritated skin. This combination works wonders for calming redness, sunburn, or minor skin irritations, while also hydrating the skin. Jasmine Incense for Aromatherapy- Burning jasmine incense can help cleanse the air, elevate your mood, and create a tranquil atmosphere in your home or office. The natural fragrance promotes mental clarity, stress relief, and a peaceful environment.

Jasmine Flower Paste for Wounds

Crush fresh jasmine flowers into a paste and apply it directly to wounds or cuts. The antimicrobial

properties of jasmine can speed up healing, reduce inflammation, and lower the risk of infection, making it an effective natural remedy for minor injuries.

Jasmine and Essential Oils for Antibacterial Benefits

For a potent antibacterial treatment, combine jasmine oil with Roman chamomile and sandalwood oil in a warm bath. This blend has powerful antibacterial properties and can help reduce harmful bacteria in the body, promoting overall health and relaxation.

DISCUSSION AND CONCLUSION

The jasmine plant is a highly versatile and valuable species, widely recognized for its diverse applications across various industries and cultural contexts. Its fragrant flowers are primarily sought after for their use in the perfume industry, as well as in the production of essential oils and cosmetics, where they impart a distinctive, sweet aroma that is both soothing and uplifting. The therapeutic properties of jasmine further enhance its value; it is renowned for its anti-inflammatory and antioxidant effects, which contribute to its potential health benefits. Research indicates that jasmine's bioactive compounds may help mitigate oxidative stress and inflammation, offering promising applications in natural medicine.

Beyond its utilitarian uses, jasmine holds significant cultural and symbolic importance in numerous societies. It is often associated with themes of love, purity, and beauty, and is frequently incorporated into rituals, ceremonies, and traditional practices. Its presence in art and literature reflects the plant's enduring cultural resonance across time and geography.



In horticulture, jasmine is prized for its aesthetic qualities. The plant's elegant vines, glossy foliage, and aromatic blooms make it a popular choice for landscaping and ornamental purposes, commonly used to adorn trellises, fences, and garden structures. Its adaptability to a range of growing conditions further adds to its appeal as a decorative element in both private gardens and public spaces. In conclusion, the jasmine plant is an exceptional species that offers a wide array of benefits, from its aromatic and medicinal properties to its cultural significance and ornamental value. Its continued use and appreciation across various sectors underscore its enduring relevance and importance in human life.

Abbreviations:

Myb- Myeloblastosis viral oncogene homolog transcription factors, BAMT- adenosyl-L-methionine benzoic acid carboxy methyltransferase, TRS-Tabular rugose cells, IAA- Indole-3-acetic acid, IBA- Indole-3-butyric acid.

Conflict of Interest:

There is no conflict of interest with this article

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