

# SUSTAINABLE USE OF INDIGENOUS PLANTS IN COSMETICS: TRADITIONAL KNOWLEDGE AND FUTURE PROSPECTS

<sup>1</sup> Jyothi Kanchan A.S. and <sup>2</sup> Sandhya P.

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## Abstract

For centuries, indigenous plants have been an integral part of traditional beauty and skincare practices, offering natural healing and cosmetic benefits. This review explores the significance of these botanical treasures in the cosmetics industry, highlighting their unique properties and historical significance. Plant ingredients in cosmetics are gaining popularity owing to their lack of side effects and ability to enrich the body with nutrients and minerals. Herbal cosmetics made purely from herbs and shrubs are safer to use than synthetic alternatives. Cosmeceuticals, which contain functional ingredients, provide medicinal benefits that affect the biological function of the skin and improve texture and health. Plant-based skincare products, derived from fruits, vegetables, legumes, whole grains, seeds, nuts, and herbs, are becoming increasingly popular. The objectives of this study were to document the use of indigenous plants in cosmetics and strengthen the knowledge of herbal cosmetic products. This review also discusses the historical use of plants and highlights their therapeutic properties and potential for use in modern cosmetic formulations. The growing interest in herbs and the movement towards a natural lifestyle further emphasize the importance of exploring the vast potential of indigenous plants in the cosmetic industry.

**Keywords:** Indigenous plants, Cosmetics, Traditional, Herbal

## Introduction

Plants are natural assets of great significance and play a crucial role in the primary healthcare systems of remote, developing, and underdeveloped regions worldwide. For centuries, indigenous plants have played a vital role in traditional beauty and skincare practices. These plants, cherished by indigenous cultures for their natural healing properties and cosmetic benefits, offer a wealth of knowledge that transcends modern trends (Thibane et al., 2018). From the lush forests of South America to the dense jungles of Southeast Asia, the use of these botanical treasures has been an integral part of daily life, rituals, and self-care routines. Plants play a crucial role in the cosmetic industry. Plant ingredients in cosmetics are continually gaining popularity. The demand for herbal cosmetics is rapidly increasing owing to the lack of side effects. The most important aspect of herbal cosmetics is that they are

made purely of herbs and shrubs. The natural content of herbs does not have any side effects on the human body; instead, they enriches the body with nutrients and other useful minerals. Herbal cosmetics have a growing demand in the world market and are an invaluable gift from nature. Herbal formulations have attracted considerable attention because of their good activity and comparatively fewer or no side effects than synthetic drugs. Herbs have been used to maintain and enhance human beauty since time immemorial. The name suggests that herbal cosmetics are natural and free from all harmful synthetic chemicals that may otherwise be toxic to the skin (Muyima et al., 2002). The use of botanical materials such as essential oils in cosmetic formulations at relatively high concentrations is likely to provide skin benefit.

Compared with other beauty products, natural cosmetics are safer to use. Numerous herbs are

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<sup>1</sup> Department of Botany, Christian College, Chengannur, Alappuzha, Kerala, India (Affiliated to University of Kerala, Thiruvananthapuram Kerala India) *email:* jyothicc@gmail.com (Corresponding Author)

<sup>2</sup> Post Graduate Department and Research Centre of Botany, N.S.S. College, Pandalam, Pathanamthitta, Kerala, India (Affiliated to University of Kerala, Thiruvananthapuram, Kerala, India), India. *email:* drsandhyamanoj@gmail.com

naturally available with different uses in cosmetic preparations for skincare, hair care, and antioxidants. The latest review highlights the importance of herbal cosmetics used, and their advantages over their synthetic counterparts. Cosmetics have medicinal benefits that affect the biological function of the skin depending upon the type of functional ingredients they contain. These cosmetic products are used not only for beautification but also for different skin ailments. These products improve the functioning/texture of the skin by boosting collagen growth by eradicating the harmful effects of free radicals, maintaining the keratin structure in good condition, and making the skin healthier. Plant-based skincare products are made entirely from plant derived ingredients, such as fruits, vegetables, legumes, whole grains, seeds, nuts, and herbs. In this review, we explore a diverse array of indigenous plants used in cosmetics, highlighting their unique properties and historical significance. The present study aims to highlight the growing popularity of herbal cosmetic items and the need to strengthen knowledge about the use of indigenous plants, which have long been utilized for their natural, effective, and sustainable beauty benefits.

Plants are widely utilized for the development of new and restorative drugs. Items that consolidate spices in their crude or separated structure are alluded to as homegrown beauty care products (Joshi and Pawar, 2015). Herbs are crucial, especially in modern civilizations where the dangers of overmedication and food processing have reached dangerous levels. They are increasingly being used in alternative medications, meals, teas, and cosmetics. In India, *Ocimum sanctum* or Kovil Tulsi is one of the sacred herbs (Leyel, 1987) which is grown in houses and temples in all areas of the subcontinent. It is a powerful medicinal plant and much has been done to validate its medicinal activity, and *Ocimum sanctum* extracted in methanol and fed to rats was found to exert an immune-stimulatory effect (Savitri *et al.*, 1988). When basil oil was tested in trials in In-

dia as an antibacterial treatment for acne, it produced good result (Jain and Jain, 1972), which could be due to the antibacterial activity of this family. The movement toward a change in lifestyle includes the growing interest in herbs. This movement's foundation is the conviction that plants have enormous potential for use as therapeutic agents (Sumit *et al.*, 2012) It is safe to be using natural cosmetics. They have been dermatologists-tested and dermatologist-proven hypoallergenic, making them safe to use anytime, anyplace. People don't have to worry about developing skin rashes or itching because they are made of natural substances (Kumar *et al.*, 2016).

*Aloe vera* has been used for many centuries for its curative and therapeutic properties and although over 75 active ingredients from the inner gel have been identified, therapeutic effects have not been correlated well with each individual component (Habeeb *et al.*, 2007). *Allium cepa* has been used externally as a poultice for acne, chilblains and arthritis (to draw out inflammation) and the juice applied to blemished skin (Morelli, 1983). Onion poultices are used on boils, abscesses and blackheads to draw out the infection, decrease inflammation and speed healing. In Africa onion juice has been applied to burns and scalds to prevent blistering and infection (Castro 1990) and the natives of East Africa sometimes use the skin of the onion as a sticking plaster on facial and body sores (Eddie *et al.*, 1984).

The huge tree *Azadirachta indica*, often known as "Neem," is native to India and was investigated as a biopesticide, anticancer, antiseptic, anti-inflammatory, and agent for treating infections. Additionally, it has been noted that differentiated cell tissue grown from *A. indica* produces active metabolites with a variety of uses. Only a small number of research, meanwhile, have been conducted on its potential application in cosmetics. The majority of research, for instance, described the antibacterial characteristics (Baby *et al.*, 2022).

## Materials and Methods

In this study, we selected a list of plants present in the courtyard. After collecting the plants, we found their botanical name, English name, local name, and its uses with the aid of reference books. Photographs of the plants were taken, and a herbarium was also prepared. Our study included a list of approximately 23 courtyard plants that are used for cosmetic purposes. In the present study, the plants were arranged alphabetically. The plants were grouped into 24 families. A table containing plants, their scientific names, common names, use, cosmetic items was also prepared..

## Results and Discussion

### 1.Onion

Scientific Name: *Allium cepa* L.

Common Name: Onion

Family: Liliaceae

Habit: Perennial plant

Cosmetic uses: It keeps the skin purified, healthy, and glowing by flushing out the harmful toxins from the body, reduces infections and boosts skin regeneration. Gives protection from sun damage – Onion is rich in vitamins A, E, and C, along with minerals, and antioxidants.

### 2.Aloevera

Scientific Name : *Aloe barbadians* Miller

Common Name : Aloe vera

Family : Liliaceae

Habit : Shrub, perennial, xerophytic .

Cosmetic Uses: Help moisturize skin , treat acne and sunburn . Helps in hair growth, keeps dandruff at bay, and acts as a conditioner to hair and scalp .

### 3.Neem

Scientific name : *Azadirachta indica* A.

Juss.

Common name : Neem

Family : Meliaceae

Habit : Evergreen perennial tree,

Mesophytic .

Cosmetic uses : Reduce post- acne scars and minimize skin inflammation . Moisturize Skin, used as shampoo for treating dandruff.

### 4.Brahmi

Scientific Name : *Bacopa monnieri* (L)Pennell

Common Name : Brahmi

Family. : Plantaginaceae

Habit. : Perennial , creeping herb

Cosmetic Uses : Effective in preventing hair loss . Helps with thicker and better hair growth .

They cleanses, softens, and protect themselves. skin, cures acne .It brighten the skin and enhances it's complexion.

### 5.Centella

Scientific Name : *Centella asiatica* (L.)urban

Common Name : Hydrocotyle

Family : Apiaceae

Habit. : Herbaceous , Perennial

.Cosmetic Uses : Increase hair growth and strengthen the hair. Decrease redness, inflammation and itchy skin.

### 6.Cofee

Scientific name : *Coffea Arabica* L.

Common name : Coffee

Family : Rubiaceae

Habit : Small tree

Cosmetic uses : Coffee is highly antioxidant that protects the skin from damage , prevents wrinkles and saggy skin, increase collagen formation , minimize hyper – pigmentation , reduces dark circles and puffy eyes and makes the skin glow.

### 7.Corriander

Scientific name : *Coriandrum sativum* L.

Common name:Coriander

Family :Apiaceae

Habit :Herb

Cosmetic uses :Control acne and black heads, also use to remove tan, regular use of coriander • on lip will lighten lips, absorbs excess oil from the face.

### 8.Turmeric

Scientific name : *Curcuma longa* L.

Common name : Turmeric

Family : Zingiberaceae

Habit : Herb.

Cosmetic uses : It inhibit the production of melanin, the pigment responsible for dark spots

and other types of hyper pigmentation and regular uses of a turmeric based product can help these blemishes fade away naturally to give the skin a more even-toned appearance.

### 9. Tea Plant

Scientific name: *Camelia sinensis* (L.)Kuntze

Common name : Tea Plant

Family: Myrtaceae

Habit : Shrub

Cosmetic uses : It is used for skin health and possesses anti-aging ,ant-inflammatory, antibacterial and astringent properties. It also aids in skin hydration and it's white tea variety is beneficial for acne prone skin.

### 10. Poovankurunnila

Scientific Name : *Cyanthillium cinereum* (L.)

H. Rob.

Common Name : Poovamkurunnila

Family : Asteraceae

Habit : Perennial plants

Cosmetic uses : Used in Kajal making

### 11. Bhringraj

Scientific Name: *Eclipta prostrate* L.

Common Name: False daisy

Family: Asteraceae

Habit: Short lived herb

Cosmetic uses: Bhringraj oil can promote hair growth and improve dandruff and benefits hair:

### 12. Hibiscus

Scientific name : *Hibiscus rosa-sinensis* L.

Common name : Hibiscus

Family : Malvaceae

Habit : Perennial shrub ,

Cosmetic uses: Stop hair loss. Prevent premature graying of hair, hydrate skin well . Fighting aging Signs. Moisturizes skin . Cleanses skin pores .

### 13. Jasmine

Scientific Name : *Jasminum officinale* L.

Common Name : Jasmine

Family. : Oleaceae

Habit. : Shrubs, Climbers

Cosmetic Uses : Improve skin tone, moistur-

izes the skin , minimize s hair breakage, treat scalp infections. Jasmine is used to add fragrance to creams, lotions, and perfumes..

### 14. Henna

Scientific name : *Lawsonia inermis* L.

Local name : Henna

Family : Lytheraceae

Habit : Tropical shrub or small tree

Cosmetic use: It can be directly applied to the affected area for dandruff, eczema, scabies, fungal infections, and wounds. Also used to dye hair and dying skin.

### 15. Mint

Scientific Name : *Mentha spicata* L.

Common Name: Mint

Family : Lamiaceae

Cosmetic uses : It is used to clear black heads, dark circles, hydrate skin, remove dandruff, preventing premature ageing, and remove fade acne scars .

### 16. Moringa

Scientific name : *Moringa oleifera* Lam.

Common name : Drumstick tree

Family : Moringaceae

Habit : Small woody tree

Cosmetic uses : Due to its antibacterial properties moringa is helpful in preventing acne breakout on skin and help in removing blemishes , dark spot , pimple and black head , improve skin texture and reduce wrinkle , oleic acid in moringa help the skin and hair get moisturized.

### 17. Curry leaves

Scientific name : *Murraya koengi* L.

Common name : Curry leaves

Family : Rutaceae

Habit : A shrub . .

Cosmetic uses: Curry leaves paste on wounds, mild burns or rashes to help heal them. Curry leaves have antiseptic properties that can protect the wounded area of the skin from infections. Promote hair growth and reduce hair graying.

**18. Lotus**

Scientific name : *Nelumbo nucifera* Gaertn  
 Common name : Lotus  
 Family : Nelumbonaceae  
 Habit : A perennial aquatic plant

Cosmetic uses : Lotus is high in vitamin B and C ,iron and protein , to keep the skin healthy and clean .it contains an antioxidant , alpha hydroxyl acid , which exfoliate the skin gently and keep it clean and fresh.

**19.Oregano**

Scientific name: *Plectranthus ambionicus* (Lour.) Spreng  
 Common name : Oregano  
 Family : Lamiaceae  
 Habit : Perennial herb, mesophytic.

Cosmetic uses: Good for hair and skin growth. Helps to maintain healthy skin and scalp. Reduce acne and whiten the skin. Promote healthier, shinier and smoothens hair.

**20.Rose**

Scientific Name : *Rosa cinnamomea* L..  
 Local Name : Rose  
 Family : Rosaceae  
 Habit : Perennial erect, climbing, or trailing shrubs.

**Cosmetic uses** : Rose has cooling, soothing ,moisturizing and hydrating properties Rose water was sprayed on the face for toning and moisturization.. It helps to maintain the skin's pH.

**21. Marigold**

Scientific Name : *Tagetes erecta* L.  
 Common Name : Marigold  
 Family : Asteraceae  
 Habit : Annual herb

Cosmetic uses :It used to treat inflammation, redness and even dryness, as well as to protect erecta skin from fine lines and prevent acne and breakouts.

**22. Cocoa Tree**

Scientific name : *Theobroma cacao* L.

Common name : Cocoa

Family : Malvaceae

Habit : Woody shrub

Cosmetic uses : Used in body lotions and creams. Because it is edible .It is also an additive on some lip balms .

**23.Ginger**

Scientific Name : *Zingiber officinale* Rosc.

Common Name : Ginger

Family : Zingiberaceae

Habit : Perennial plant

Cosmetic uses:-Ginger improves skin elasticity and evens skin tone, which further helps improve skin texture. The natural exfoliating factors (lactic acid) in yoghurt gently exfoliates the skin and accelerates the rate of cell turnover.

**Discussion**

Although natural ingredients have traditionally been used for centuries for skin care purposes, they are becoming more prevalent in contemporary formulations (Castro, 1990). The term “natural” is defined as something or an ingredient that is produced or found in nature and is directly extracted from plants or animal products. The natural ingredients include herbs, fruits, flowers, leaves, minerals, water, and land. Compared to synthetic cosmetic ingredients, herbal products are mild and biodegradable, exhibiting low toxicity. The use of plants for medicinal purposes is as old as humanity, and in the coming years, it is likely that new products containing natural oils and herbs will emerge. The details of important plants used in herbal medicine are provided in Table 1. Herbal cosmetics are natural and safer than chemical-based one. Herbal formulations have attracted considerable attention because they are free from harmful synthetic chemicals, that may be toxic to the skin. The bioactive ingredients of plants include antioxidants, vitamins, essential oils, tannins, alkaloids, dyes, carbohydrates, and terpenoids, which are used in cosmetics for the care of the skin, body, and other parts (Watt *et al.*, 1962). Herbal cosmetics used on a daily basis include herbal cream, face wash, lip balm,

**Table 1** Botanical Information: Binomial Names, Common Names, and Plant Parts Used

Sl. Number	Binomial name	Common name	Family	Part used
1	<i>Allium cepa</i> L.	Onion	Amaryllidaceae	Bulb
2	<i>Aloe barbadensis</i> Mill.	Aloe	Liliaceae	Leaf
3	<i>Azadirachta indica</i> .A.Juss	Neem	Meliaceae	Leaf
4	<i>Bacopa monnieri</i> (L.)Pennell	Brahmi	Plantaginaceae	Leaf
5	<i>Camellia cinemis</i> (L.)Kuntze	Tea tree	Myrtaceae	Leaf
6	<i>Centella asiatica</i> (L)Urban	Centella	Apiaceae	Leaf
7	<i>Coffea arabica</i> L.	Coffee	Rubiaceae	Seed
8	<i>Coriandrum Sativum</i> L.	Coriander	Apiaceae	Leaf and seed
9	<i>Curcuma longa</i>	Turmeric	Zingiberaceae	Seed
10	<i>Cyanthllium cinereum</i> (L.)H.Rob.	Poovakuru-nnila	Asteraceae	Whole part
11	<i>Eclipta prostrata</i>	False daisy	Asteraceae	Whole part
12	<i>Hibiscus rosa-sinesis</i> L.	Hibiscus	Malvaceae	flower
13	<i>Jasminum officinale</i> L.	Jasmine	Oleaceae	Flower
14	<i>Lawsonia inermis</i> L.	Henna	Lytheraceae	Leaf
15	<i>Mentha Spicatea</i> L.	Mint	Lamiaceae	Leaf
16	<i>Moringa oleifera</i> Lam.	Moringa	Moringaceae	Leaf
17	<i>Murraya koengi</i> L.	Curry leave	Rutaceae	Leaf
18	<i>Nelumbo nucifera</i> Gaertn.	Lotus	Nelumbonaceae	Flower
19	<i>Plectranthus ambionicus</i> (Lour.) Spreng.	Oregano	Lamiaceae	Leaf
20	<i>Rosa cinnamomea</i> L	Rose	Rosaceae	Flower
21	<i>Tagetes erecta</i> L.	marigold	Asteraceae	Flower
22	<i>Theobroma cacao</i> L.	Coca tree	Malvaceae	Fruit
23	<i>Zingiber officinals</i> Rosc.	Ginger	Zingiberaceae	Rhizhome

herbal conditioners, herbal soap, and herbal shampoo. Cosmetics based on herbal ingredients possess desirable physiological activities such as smoothing appearance, healing, enhancing, and conditioning properties. The cosmetic industry is now focusing on this growing segment with an enormous scope of manifold expansion in the coming years.

The beginning of the 21st century witnessed significant advancements in the herbal industry. Herbal ingredients are preferred over chemical ingredients owing to their availability and fewer side effects. The utilization of novel herbal plant ingredients in various formulations such as hair tonics, hair gels, face packs, and face creams has proved to be more beneficial

than formulations containing only chemical components. These novel ingredients have helped to enhance the beauty and health of individuals.

### Summary and Conclusion

In the present study, we documented the use of 23 plants for cosmetic purposes. This study highlights the importance of plants in cosmetic products and their prospective roles in daily life. People are motivated to conserve resources only when they are able to profit from their sustainable use and thus benefit from their conservation. Plants are inseparable from local livelihoods because they have long been collected, consumed, and managed through local customs and knowledge. Sustainable utilization and management of plants, based on traditional knowledge, is therefore necessary; however, more ethno-botanical studies are still needed to quantitatively document the use of these plants and their beneficial effects when used for cosmetic purposes, as well as their toxicological effects.

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