

Original Research

Received 09 May 2026

Revised 20 June 2026

Accepted 01 July 2026

Natural Resources for Human Health 2026, Vol. 6 (11s): 101–126

KEYWORDS:

Herbal cosmetics, phytocosmetics, medicinal plants, natural products, cosmeceuticals, skin care, hair care, oral care and personal care.

A Comprehensive Review on Modern Herbal Cosmetics: From Traditional Ethno botanical Knowledge to Evidence Based Formulations

Pragati Tiwari¹, Surabhi Shakya², Arvind Kumar Srivastava³, Alka Yadav⁴, Amit Kumar Verma^{1*}

^{1,2} Department of Pharmacy, M.J.P. Rohilkhand University, Bareilly, U.P, India.

³ Faculty, Shambhunath Institute of Pharmacy, Jhalwa, Prayagraj, U.P., India.

⁴ Faculty, Rohilkhand College of Pharmacy, BIU, Bareilly, U.P., India.

^{1*} Faculty, Department of Pharmacy, M.J.P. Rohilkhand University, Bareilly, U.P, India.

Corresponding author email: researchermjpru@gmail.com

ABSTRACT: Herbal cosmetics have emerged as a significant segment of the cosmetic industry due to rising consumer preference for natural, safe, and eco-friendly products. These cosmetics are formulated using plant-based ingredients that provide cosmetic enhancement along with therapeutic benefits. Unlike synthetic cosmetics, herbal cosmetics are believed to cause fewer side effects and offer long-term benefits to skin and hair health. This review article discusses the historical background, concept, classification, commonly used medicinal plants, formulation approaches, mechanisms of action, advantages, limitations, safety and quality concerns, regulatory aspects, and future prospects of herbal cosmetics.

1. INTRODUCTION

Products made from a variety of natural herbal substances are known as herbal cosmetics, and they serve as the foundation for the creation of potent herbal cosmetics. Herbs don't offer quick fixes. They provide a means of aligning the body with nature (Pandey S et. al., 2010). Because herbal treatments are safe for the skin and have no negative side effects, their demand is rising quickly. The nicest part about herbal cosmetics is that they have no negative effects because they are created entirely of herbs and shrubs. The body receives nutrients and other beneficial minerals from the natural composition of the herbs, which has no negative consequences (Gediya SK et al., 2011). Raymond Reed, the original founder of the American Society of Cosmetics Chemists, coined the word "cosmeceuticals" in 1961. He actually used the word to brief the active and science based cosmetics. The above term was further used by Dr Albert Kligman in the year 1984 to refer the substances that have both cosmetic and therapeutic benefits (Saha R et al., 2012). Cosmeceuticals are cosmetic-pharmaceutical hybrids intended to enhance health and beauty through ingredients that influence the skin's biological texture and function (Sharma HD et al., 2010). The use of cosmetics has been a significant part of human life for thousands of years (Mc Mullen & Dell'Acqua. 2023; Verma et al., 2025). We hope that this article will give the reader some insight into creating new natural-based goods by giving a thorough overview of the history of natural substances used in cosmetics.

How early civilizations used natural ingredients as cosmetics

Cosmetics from Egypt

As early as 5000 BC, cosmetics had a significant role in Egyptian culture. The Egyptians were very skilled formulators of cosmetic chemicals before their time. The majority of Egyptians bathed in the river or at home as part of their everyday routine. Perfume and powdered lime were combined with vegetable or animal fat to create cleansing cream. To defend themselves from the dry climate, wind, and intense sun, people utilized oils and creams. Red ochre that had been crushed in water was used to the lips and cheeks. Every day, they used fragrant unguent oil soaked in scented wood to rub themselves.

Myrrh, thyme, marjoram, chamomile, lavender, lily, peppermint, rosemary, cedar, rose, aloe, olive oil, and almond oil were used to make the perfumes (Jain & Chaudhari, 2009; Tiwari et al., 2021). Perfume was thought to maximize bodily function and had a very spiritual importance. Henna was applied to the hands' palms and fingernails, creating an orange-red hue. Overall, it's amazing how many different natural mineral-based pigments the ancient Egyptians employed for their cosmetics (Mc Mullen & Dell'Acqua, 2023). Stibnite, a rarer mineral that has a tone comparable to that of galena ore, was thought to be the primary ingredient in black kohl throughout history. Although samples of excavated kohl included stibnite, galena ore was more prevalent. The usage of the Latin word stibium for kohl or the mention of stibnite as the correct ingredient in old Muslim manuscripts may be the source of this misunderstanding (Pérez-Arategui, J & Cepriá, G., 2018). Other lead-based compounds, like phosgenite ($\text{PbCl}_2 \cdot 2\text{CO}_3$) and laurionite ($\text{PbCl}_2(\text{OH})$), were frequently used as minor components in kohl, giving the final composition brighter tones. Kohl compositions also contained long-chain fatty acids that came from animals. Brown ochre/iron oxide ($\text{Fe}_2\text{O}_3 \cdot n\text{H}_2\text{O}$) and magnesium oxide were also employed as main constituents in kohl. Using a kohl stick, kohl was usually applied as a powder or paste (using a water-soluble gum). It was used as a salve to heal eye disorders and ailments in addition to its aesthetic value. Some regions of the Middle East and Northern Africa still utilize kohl today. Approximately 25% of the tested items were based on galena ore, according to a 2006 investigation on the composition of contemporary Egyptian kohl products (Hardy et al., 2006). It should be mentioned that lead-containing substances are poisonous and can enter the bloodstream through percutaneous absorption, ingestion, or inhalation. Lead compounds are much more harmful to newborns and children than to adults since they bioaccumulate in body. They may result in hearing loss, intellectual disability, and other conditions. Because kohl products contain lead-based substances, the Food and Drug Administration (FDA) in the United States does not permit their usage. Nonetheless, some products are marketed as "kohl" in the United States, although in this instance, the phrase refers to very dark eyeliner tints. Oral hygiene was another crucial component of ancient Egyptian life (Leek, 1967). The enamel and other structural components of the teeth were probably harmed by the sand from the stones that the Egyptians used to grind wheat into bread. The majority of archeological data points to dental abscesses, tooth loss, and decay among the Egyptians. Remarkably, the Egyptian Hesy-Ra, who lived in the Third Dynasty (First Dynasty of the Old Kingdom—2600 BC), is the world's first known dentist. Throughout antiquity, people have used wood and chewing sticks to clean their teeth. Nonetheless, the first documented mention of a toothpaste recipe (about the fourth century BC) that included a blend of salt, pepper, mint leaves, and iris flowers is sometimes attributed to the ancient Egyptians (Mc Mullen & Dell'Acqua, 2023). Historically, ash and salt were included as abrasive components in dentifrices, fulfilling a similar purpose to that of silica in contemporary formulations. Ironically, one of the main constituents in a number of commercial brands that are currently on the market is salt. Myrrh, thyme, marjoram, chamomile, lavender, lily, peppermint, rosemary, cedar, rose, aloe, olive oil, sesame oil, and almond oil are additional substances that are frequently mentioned in the literature (Verma & Shakya, 2025). Since contemporary distillation-based preparation procedures were not found until later, perfumes from this era were fat-based (Chaudhri & Jain, 2014).

Traditional Chinese Medicine

For more than two millennia, traditional Chinese medicine has been practiced in China. It is a medical method founded on preserving equilibrium between the body's internal organs and external factors. In essence, it is a harmonious balance between yin and yang, two opposing energies. Acupuncture, acupressure, moxibustion (burning herbal leaves close to the body), exercise (tai chi, for example), cupping (putting hot cups on the body to promote blood flow to the skin), or herbal medicines are some of the methods used by practitioners of Traditional Chinese Medicine. The vital energy that circulates through various channels throughout our bodies is referred to as qi. Maintaining the flow of qi is one of the key objectives of traditional Chinese medicine. Herbal remedies may consist of a wide variety of components, including plant-based. *Bencao Gangmu*, also known as *Compendium of Materia Medica*, is an encyclopedic work written by the 16th-century Chinese doctor Li Shizhen that covers all aspects of Traditional Chinese Medicine (Ramaswamy, 2021). The dermatological and cosmetic communities are very interested in learning more about the potential ingredients of Traditional Chinese Medicine for skin care (Wang et al., 2006; Verma et al., 2022). In traditional Chinese medicine, the majority of skin treatments are multi-ingredient decoctions that are taken orally for a few weeks. A single ingredient is frequently used in topical treatments. *Bencao Gangmu* describes how to treat psoriasis, atopic dermatitis, eczema, and other skin conditions. An extraction process is carried out on a designated plant component (such as the root, leaf, bark, etc.) to produce herbal extracts. The floret of the safflower plant (*Carthamus tinctorius*), a member of the sunflower (*Asteraceae*) family, is known as *Carthamiflos*. Various traditional medical systems around the world have made use of mugwort. These days, taking mugwort orally is advised for

high blood pressure, irregular menstruation, and digestive issues. Additionally, it has qualities that make it effective as a liver tonic, laxative, and sedative. Dong Gua Zi, or semen benincasae, is a melon whose seeds are ground into a paste and then applied to the skin (Hang et al., 2021). The oldest living tree species is the Ginkgo biloba, which is indigenous to China. For the past few decades, ginkgo leaf extracts have been utilized in western medicine to treat dementia and improve cerebral and peripheral blood flow. Terpene tri-lactones and flavonoids are present in the Ginkgo biloba leaf extract. The flavonoids include proanthocyanidins, biflavonoids, flavane-3-ols, acylated flavonol glycosides, and flavone and flavonol glycosides. Traditional Chinese medicine uses ginkgo seeds as a topical antibacterial to treat skin infections. According to recent research, ginkgo seed extracts offer protection against the gram-positive skin pathogens *Streptococcus pyogenes*, *Staphylococcus aureus*, and *Cutibacterium acnes* (Chassagne et al., 2019).

Ayurvedic medicine

Ayurveda, Unani, Siddha, naturopathy, and homeopathy are some of the medical systems that have supported India's long-standing herbal medicine heritage. Understanding the scientific processes underlying many of the phytochemicals utilized in these many medical modalities has garnered a lot of attention recently, particularly from the standpoint of herbal cosmetics. Ayurveda was created in India and has been used for over 3,000 years. The Sanskrit terms ayur (life) and Veda (science or knowledge) are the literal translations of Ayurveda. It is a system of herbal medicine that is firmly based on the idea of leading a healthy lifestyle and preserving the right balance in our bodies and minds. One of the world's most biodiverse countries, India provides a wide range of plant sources for the various Ayurvedic treatment procedures. An essential component of Ayurveda is skin care (Hirudkar et al., 2022). The general health of the skin is thought to be significantly influenced by diet and water. Ayurvedic remedies generally concentrate on treating skin conditions like vitiligo, psoriasis, eczema, aging skin, and acne vulgaris. Many Ayurvedic cosmetic remedies use sesame oil as a foundation because it contains lignan chemicals (sesamin and sesamol). Buttermilk and goat milk powder, which are high in vitamins A, B6, B12, and E and give the skin emollient qualities, are classic ingredients in face mask formulations. The herb shikakai, derived from the shikakai pods and nuts of the *Acacia concinna* shrub, is a common ingredient in shampoos. Saponins, which function as gentle detergents, are found in the pods (Hazra, 2013). China, Greece, Egypt, India, and Mexico are among the ancient societies that have employed aloe vera for thousands of years. Aloe vera's mucopolysaccharides help keep the skin hydrated by binding water. Numerous vitamins (such as vitamin C, vitamin E, and beta-carotene), enzymes (such as those that reduce inflammation and aid in the metabolism of fats and sugars), minerals (which support enzyme activity), anthraquinones (laxatives), and hormones can be found in aloe vera (Surjushe et al., 2008). Marigold, or *Calendula officinalis*, has been shown to have wound-healing capabilities, particularly during the inflammatory stage of wound healing and granulation tissue development (Givol et al., 2019). The yellow pigment known as curcuma longa, or curcumin, is extracted from the rhizome of the annual herb turmeric. Its anti-inflammatory, antibacterial, antioxidant, and anti-neoplastic qualities have drawn a lot of attention as a skin treatment in recent years (Vaughn et al., 2016; Verma et al., 2025).

Color Cosmetics in the Subcontinent of India

Although it can vary greatly from place to region, India has a highly rich cultural legacy of cosmetics. Some of these customs are still practiced in Bangladesh, Pakistan, Sri Lanka, and other nearby nations in addition to modern-day India. Numerous traditions are connected to social standing or religious rituals. A few instances of natural materials used in Indian color cosmetics are given in the paragraphs that follow.

Kumkum

Kumkum, sometimes referred to as kumkuma (fig 1), is a significant color cosmetic powder that is traditionally created with turmeric and lime water. When calcium oxide and water are combined, a saturated solution of calcium hydroxide is created, known as lime water or slaked lime. Quicklime, or calcium oxide, is an alkaline and caustic substance that is produced by the heat breakdown of seashells and limestone. The main component of turmeric, curcumin, gives it its yellow hue, which turns red as the pH rises (see Figures 1).



Fig. 1 Kumkum.

Kajal.

The Indian subcontinent's inhabitants, like the ancient Egyptians, applied (and still do) kajal, a dark eyeliner (Fig. 2). In essence, it had the same composition as kohl, which was mostly made of the mineral galena and was already covered in the section on Egyptian cosmetics. Its use is motivated by both religious beliefs and the belief that it protects the eye from UV rays. The use of it, particularly by the younger generation, continues to raise serious concerns in the medical community (Hardy, 2008). Commercial formulations have been reported to contain minium (Pb_3O_4), amorphous carbon, magnetite (Fe_3O_4), and zincite (ZnO) in addition to the lead sulfide (PbS) present in galena. Since carbon black avoids any potential risks of lead poisoning from traditional kajal, it has become a more popular modern substitute. It should be noted that certain scientists make a distinction between the chemical makeup of kajal and kohl (Mohta, 2010).



Fig. 2 (Kajal)

Henna

Henna is a traditional substance that has been used since ancient times and is derived from the plant *Lawsonia inermis*. It is advised in Ayurveda for a number of conditions, such as scabies and certain skin conditions. Its ability to tint hair is what makes it most famous, particularly in areas of modern-day Iran, Pakistan, and India. The primary dye molecule component that gives it its distinctive orange-red hue is called Lawsone (see Figure 3). The main dye ingredient of Mehndi, a body art form that has been popular in India and the surrounding areas since the fourth or fifth century BC, is henna. Mehndi is particularly common at traditional Hindu weddings and is usually applied to the hands and/or legs. Henna-based hair colors of today frequently include metallic salts and other dyes in addition to henna. Compared to traditional hair dye solutions, henna hair formulations require more time to prepare and apply (Blanco, 2000).



Fig. 3 Henna

Classification of Herbal Cosmetics

The beauty industry's fastest-growing segment is "cosmeceuticals." Cosmetic-pharmaceutical products, known as "cosmeceuticals," are designed to enhance the health and appearance of the skin by offering a particular outcome, such as sun protection, acne control, or anti-aging qualities (Fig 4). They are both skin-protecting and skin-glow agents. There are different types of herbal (Dongare et al, 2021).

2.1 Skin Care Products

The use of herbs in the manufacturing of cosmeceuticals has grown significantly in the personal care sector in recent years, and demand for herbal cosmetics is high. Cosmetics are substances that are applied to the human body to change look, promote attractiveness, cleanse, and beautify it without changing the structure or functions of the body. The Greek term "kosmtikos," which means to have the ability to organize, decorate, and have talent, is where the word "cosmetic" originates. Originally connected to hunting, combat, religion, and superstition, cosmetics were eventually linked to medicine. Numerous chemicals, dyes, and synthetic substances have been shown to induce a wide range of skin conditions with a host of adverse effects. As a result, we are making every effort to use herbal cosmetics. The fundamental concept of skin care cosmetics is deeply rooted in the homeopathic, Ayurvedic, and Unani medical systems. Antioxidant, anti-inflammatory, antiseptic, emollient, anti-seborrheic, anti-kerolytic, and antibacterial qualities are only a few of the many qualities that the herbs should possess. Cosmetics are developed to reduce wrinkles, fight acne and to control oil secretion. For various types of skin ailments formulations like skin protective, sunscreen, anti-acne, anti-wrinkle and anti-aging are designed using varieties of materials, either natural or synthetic. The skin and hair beauty of individuals depends on the health, habits, routine job, climatic conditions and maintenance. The skin due to excessive exposure to heat will dehydrate during summer and causes wrinkle, freckles, blemishes, pigmentation and sunburns. The extreme winter cause damages to the skin in the form of cracks, cuts, maceration and infections. Creams, powders, lotions, perfumes, washing solutions, and the vast array of ornamental cosmetics or makeup are all part of the incredibly diverse and varied category of products known as cosmetics (KR, 2019).

Natural Cosmeceuticals

The next generation of skin care is cosmetics. They are the new foundation of skincare and the developments in the field of dermatological products. Generally speaking, cosmetic-pharmaceutical hybrids are used to improve the appearance and health of skin. All cosmeceuticals contain useful substances with therapeutic, disease-fighting, or healing qualities, though some are synthetic and others are sourced from natural sources (Nikita et al, 2025).

Example of some skin care natural oils, used in cosmetics

Aloe vera: Aloe vera (Fig 7) is an herbal plant species belonging to family liliaceae. It is an ingredient in many cosmetics because it heals, moisturizes, and softens skin. Simply cut one of the aloe vera leaves to extract the soothing gel. Aloe vera contains amino acids like leucine, isoleucine, saponin glycosides that provide cleansing action, vitamins A,C,E,B, choline, B12 and folic acid and provide antioxidant activity (Gediya, 2011).

Turmeric: It is a deep yellow-to-orange powder (Fig 5) that comes reduce the number of ultraviolet B (UVB)- induced sunburn. It is skin protecting agent as well as antiseptic in nature and has antiseptic properties (Dongare et al., 2021).

Multani mittens (Fuller's earth): Fuller's earth, often known as Multani mittens (Fig 6), is nature's own baby powder. One of the first materials to be used as a beauty mask to extract oils from the skin, as a natural moisturizer for hair, teeth, gums, and hairs, to heal sunburn, to eliminate pimple marks, to unclog pores, and to cleanse the skin of debris and flakes was clay (Dongare et al., 2021).

Chandan: It was administered to the face as face packs and scrubs to get rid of dead cells. promote the development of new cells and give off a youthful appearance. It is also used as a detanning agent to cure sunburn (Dongare et al, 2021).



Fig. 5 *Curcuma longa*) **Fig. 6** *Solum follonum*



Fig. 7 *Aloe barbadensis* Miller

Herbal creams and lotions

Creams: Creams are semisolid medication formulations that can be applied topically to the skin, the surface of the eye, or the rectum, vagina, or through the nose for aesthetic, therapeutic, or preventative reasons. To produce a washing and softening effect, face cream is used topically. Skin creams have the dual functions of shielding the skin from external contaminants and promoting relaxation. There are various types of creams, including cleaning, cold, vanishing, night, foundation, and massage creams for the hands and body (Pradeepa et al., 2023).

Herbal creams: Emulsions made of both water and oil are what herbal creams are. They could include items like Tulsi, aloe vera, papaya, neem, and Turmeric. Herbal creams contain a variety of tinctures, extracts, and essential oils. Natural nutrients like vitamins and minerals can be found in herbal creams without the use of potentially harmful synthetic additives (Table 1) (Kumar et al., 2016).

Types of Herbal creams

There are two types of Herbal creams that are-

1. Oil-in-water (O/W) creams

Creams that contain tiny oil droplets dispersed throughout a continuous phase are known as oil-in-water (O/W) creams. On the other hand, an oil-in-water (O/W) emulsion is one that has oil droplets scattered throughout the aqueous phase (Khan et al., 2021).

2. Water-in-oil (W/O) Creams

W/O creams are defined as creams that contain water and oil in a continuous phase. When water is the dispersed phase and oil is the dispersion medium, the emulsion is referred to as water-in-oil (W/O) type (NK et al., 2013).

Preparation of Herbal creams

The production of various herbal creams with varying application goals involves a wide variety of plants and plant materials. All of the approaches, however, adhere to a common chain process, which can be shown as follows. The procedure begins with the gathering of raw plant materials, which are then cleaned and their quality evaluated after purchase. These are then dried or otherwise processed based on the demand. In the following phase, specified solvents or juices/gels are collected using standard methods, and the raw plant ingredients, if appropriate, are extracted using conventional methods. The next process is oil phase preparation, which involves continuously heating liquid paraffin and beeswax to produce the oil phase that is used in creams. A transparent solution is made by heating distilled water to 75 °C and mixing borax and methyl paraben. It is referred to as the preparation of watery stage. After heating the oil phase, the water phase is gradually added and blended, and then the herb extract, juices, or jelly are added to create smooth creams. After adding the proper scent, the product is prepared for packaging (M et al., 2022).

Table no. 1 Herbal creams available in market and their company name (Arushi et al., 2024)

S.No	Product names	Company names
1	Vicco WSO Skin Cream	Vicco Laboratories
2	Vicco Turmeric Skin Cream	Vicco Laboratories
3	Biotique Morning Nectar Nourish & Hydrate Moisturizing Cream	Bio Veda Pharmacy Pvt. Ltd
4	Vicco Turmeric Aloe Vera Skin Cream	Vicco Laboratories
5	Vicco Narayani Cream	Vicco Laboratories

Herbal lotion

Herbal lotions, also known as products, are made with a variety of acceptable cosmetic chemicals to create a base. One or more herbal compounds are then utilized to provide specific cosmetic benefits; these products are referred to as "Herbal Cosmetics." Natural herbs and their products are used to make herbal lotions. The demand for natural goods and natural extracts in cosmetic preparations was sparked by consumers' preference for herbal products due to its aromatic value. Lotions are liquid formulations intended for frictionless exterior application. They are administered directly to the skin with the aid of an absorbent substance, like gauze soaked in it or cotton wool. Lotion can be used locally for protecting, calming, or cooling effects. Herbal lotions are liquid preparations that are applied externally to the skin to create or improve beauty. The purpose of lotions is to cleanse the skin and eliminate greasy secretions. Along with other therapeutic benefits, it improves blood circulation, emolliency, astringency, skin freshness, and bleaching. Typically, herbal lotions are applied smoothly. Since particles that are closer to colloidal dimensions are more calming to inflammatory areas and more effective when in touch with contaminated surfaces, the insoluble matter should be finely divided. To increase dispersion or to highlight the lotion's cooling, calming, drying, or protecting qualities, a wide range of substances can be added to the mixture. Cosmetics are designed to combat acne, lessen wrinkles, and regulate oil production. Formulations for a variety of skin conditions, including sunscreen, anti-aging, anti-acne, anti-wrinkle, and skin protection, are created using different kinds of materials. The current

study gathers information about the herbal plants used to make herbal lotion and talks about the advantages and uses of these plants in the creation of cosmetics. Herbs and plants have long been used by Ayurveda to cure a variety of illnesses. A skin lotion's purpose is to protect the skin from various weather conditions and environmental factors while also providing a calming effect (Table 2) (Ashok et al., 2022).

Preparation of Herbal lotion

1. Weigh each component in accordance with the recipe.
2. Aloe vera gel was placed in a different, clean beaker and swirled until it became somewhat creamy.
3. After that, tomato extract and honey were added and combined.
4. Next, another beaker was filled with vitamin, almond, and lavender oils. Glycerin and capsule oil were added.
5. After that, the oils solution was gradually added to the first beaker and properly mixed.
6. After combining all the ingredients, coconut milk and rose water were added according to consistency (Ashok et al., 2022).

Table No. 2 Herbal lotion available in market and their company name (Singh et al., 2024).

S.No	Product name	Company name
1	Jiva Aloe Vera Lotion	Jiva Ayurveda
2	Khadi India Aloe Vera Sandal Body Lotion	Khadi India
3	Khadi India Ayurvedic Jasmine Herbal Body Lotion	Khadi India
4	Vagad's Khadi Herbal Moisturising Lotion Aloe Vera	Vagad's Essence
5	Himalaya Aloe & Cucumber Refreshing Body Lotion	The Himalaya Drug Company

Face packs and masks

Face packs

Because of their therapeutic benefits, medicinal herbs have long been used in skincare products. These plants, referred to as botanicals, have pharmacological properties that support wellbeing and health. They provide a comprehensive and all-natural strategy for addressing the symptoms of aging in the skincare industry. In order to revitalize the skin, minimize wrinkles, and improve a young appearance, anti-aging face packs usually include a blend of natural ingredients, particularly medicinal herbs chosen for their special advantages (Table 3). By nourishing the skin, promoting the formation of collagen, and preventing oxidative stress, these face masks lessen the obvious symptoms of aging. (Anis et al., 2024).

Table No. 3 Herbal face pack available in market and their company name (Mamgain, et al., 2025).

S.No.	Product name	Company name
1.	Khadi Natural Neem Face Pack	Khadi Natural Neem Face Pack
2.	Himalaya Purifying Neem Pack	Himalaya Purifying Neem Pack
3.	Khadi Natural Sandal & Rose Herbal Face Pack	Khadi Natural Healthcare
4.	Biotique Morning Nectar Refreshing Face Pack	Bio Veda Action Research Company
5.	Khadi Natural Sandal & Rose Herbal Face Pack	Khadi Natural Healthcare

Face Wash

Face wash, one of the most widely used dermatological preparations, is meant to cleanse and maintain the skin on the face every day. This is essential for eliminating impurities such dirt, excess sebum, environmental pollutants, dead skin cells, and microbiological contaminants that build up on the skin's surface throughout the day. To insert text, tap or click here. Modern face wash recipes contain gentle surfactants and skin-compatible chemicals that preserve the skin's naturally occurring moisture and resistant qualities, facilitate mild exfoliation and bacteria diminution, keep the skin clean and hygienic, and lessen acne flare-ups. This is in contrast to traditional soaps, which are alkaline and may harm the stratum corneum. In recent years, herbal and poly herbal face cleansers have gained popularity because of their therapeutic benefits, low possibility for irritation, and safety. Despite their effectiveness, synthetic chemical-based cleansers may cause dryness, irritation, or an imbalance in pH even while being used. Rather, flavonoids, alkaloids, saponins, essential oils, tannins, and other bioactive substances with antibacterial, anti-inflammatory, antioxidant, astringent, and skin-brightening properties are found in high amounts in herbal formulations (Kulkarni, 2025). Together, these phytochemicals will cleanse the skin, control sebum, lessen inflammation, and aid in the treatment of common skin disorders such moderate pigmentation, acne, blackheads, and blemishes (Table 4) (Mamillapalli, 2020).

Table No. 4 Herbal face wash available in market and their company name (Sharma et al., 2025).

S.No	Product name	Company name
1.	Himalaya Purifying Neem Face Wash	Himalaya Wellness Company
2.	Khadi Natural Neem & Tulsi Face Wash	Khadi Natural Healthcare
3.	Biotique Fresh Neem Pimple Control Face Wash	Bio Veda Farmacy Private Limited
4.	Jiva Ayurveda Aloe Vera Face Wash	Jiva Ayurveda
5.	Biotique Bio Morning Nectar Flawless Skin Face Wash	Bio Veda Farmacy Private Limited

Cleansers and Scrubs

Cleansers

The practice of maintaining personal cleanliness and a clean environment to stave against illness or disease is known as hygiene. As a result, maintaining the health of the skin is just as important as washing it. Cleaning has advanced much among humans beyond simply getting rid of dirt. Man has been performing this ritual since the beginning of time, and it has always been a crucial component of religious ceremonies and beliefs. In addition to improving the health and appearance of the skin, many people also use washing as a way to unwind and escape from the stresses of daily life (Ertel, 2000). Regardless of the perspective, maintaining the skin's homeostatic qualities while also cleaning it requires a delicate balance (Table 5) (Gelmetti, 2001).

Table No. 5 Herbal face cleansers available in market and their company names (Waghmare et al., 2025)

S.No.	Product name	Company name
1.	Purifying Neem Face Wash	Himalaya Wellness Company
2.	Fruit Brightening Face Wash	Biotique
3.	Tea Tree Skin Clearing Facial Wash	Biotique
4.	Fresh Neem Pimple Control Face Wash	Bio Veda Farmacy Pvt. Ltd. (Biotique)
5.	Honey Gel Soothe & Nourish Foaming Face Wash	Biotique

Face Scrubs

Herbal face scrubs are skincare products made with natural and organic ingredients to exfoliate and revitalize the skin of the face. In contrast to synthetic Herbal face scrubs are constructed from mild, nourishing plant-based ingredients, unlike scrubs that may contain harsh chemicals that might harm the skin. In herbal face scrubs, finely ground herbs like chamomile, lavender, and rose are frequently mixed with natural exfoliants like sugar or salt (Table 6). These ingredients work together to gently exfoliate dead skin cells and unclog congested pores, leaving the skin looking smoother and more vibrant (Bharti et al., 2025). Herbal face scrubs can provide a variety of extra benefits beyond just exfoliating the skin, depending on the specific ingredients utilized (Bharat et al., 2013).

Table No. 6 Herbal face scrubs available in market and their company names (Godse et al., 2025).

S.No	Product name	Company name
1.	Clear Complexion Whitening Face Scrub	Himalaya Wellness Company
2.	Gentle Exfoliating Apricot Face Scrub	Himalaya Wellness Company
3.	Papaya Tan Removal Brightening & Revitalizing Face Scrub	Biotique
4.	Advanced BXL Cellular Walnut Resurfacing Scrub	Biotique
5.	Ubtan& Collagen Face Scrub	Biotique

Herbal Sunscreens

UV protection is necessary since ultraviolet (UV) radiation is the main cause of many skin conditions. The most popular way to do this is with topical sunscreens. However, there are drawbacks to conventional sunscreen formulas that prevent their widespread usage. The creation of novel sunscreen formulations that seek to overcome the drawbacks of conventional sunscreens has been greatly aided by nanotechnology. Numerous advances in UV protection and aesthetic appeal have resulted from these developments (Chevda et al., 2023). By taking the right precautions, sun damage can be avoided. The World Health Organization (WHO) states that the optimum protection is obtained when sunscreen is applied to the exposed body parts and combined with clothing, sunglasses, hats, and shades. Daily usage of sunscreens reduces the risk of skin cancer and premature aging of the skin (Green et al., 2010). UV sensitivity varies according to skin color, and there are many different skin tones. Darker skin tones are more resistant to sunburn and have a higher UV tolerance, but they are also more vulnerable to UV-induced damage. Because sunburn and skin tanning are difficult to detect in dark skin tones, cancers cannot be identified early (Table 7) (Kabigting et al., 2009).

Table No.7 Herbal sunscreens available in market and their company names (Maheshwari et al., 2026).

S.No	Product names	Company names
1.	Morning Nectar Sun Protect Moisturizer	Biotique
2.	Sun Protect+ Ultra Light Sunscreen	Himalaya Wellness Company
3.	Safe Sun Silk Touch Mattifying UV Cream	Lotus Herbals
4.	Safe Sun Sports Daily-Defence UV Block SPF 50+	Lotus Herbals
5.	Sandalwood 50+ SPF Sunscreen Cream	Biotique
6.	Safe Sun Daily Multi-Function Sunscreen	Lotus Herbals
7.	Safe Sun UV Screen Matte Gel SPF 50	Lotus Herbals
8.	Sun Shield Carrot SPF 40 Sunscreen Lotion	Biotique

Hair Care Products

The purpose of hair care products is to keep the scalp clean and to properly moisturize hair. Hair care products are also assisting in regulating the hair's structure and behavior to maintain it in a regulated setting and in a preferred manner. The strong protein known as keratin gives hair its basic structure, consisting of a root and a shaft. The strength of hair is determined by this keratin. The market offers a wide range of hair care products, such as shampoo, conditioner, oils, and more. Oils, impurities, skin particles, dandruff, natural impurities, and other pollutants that gradually accumulate in the hair are all removed with shampoo, a hair care product. The market offers a wide range of hair care products, including shampoo, conditioner, oils, and more (Balaji et al., 2021).

Herbal Shampoos

Because of their mildness, environmental friendliness, and medicinal qualities, herbal shampoos have drawn a lot of interest as natural substitutes for synthetic hair care products. This analysis highlights the potential of herbal shampoos to support healthy hair and scalp by examining their composition, main constituents, and advantages. Herbal natural surfactants, herbal extracts, essential oils, and plant-based conditioning ingredients are commonly used in shampoo formulations. Bioactive substances like alkaloids, flavonoids, saponins, and polyphenols found in common herbs like fenugreek, bhringraj, neem, hibiscus, and aloe vera help nourish hair, lessen dandruff, and stop hair loss. Furthermore, stability and scalp compatibility are guaranteed by natural thickening and pH-adjusting ingredients (Table 8) (Meshram & Pardhi., 2025).

Preparation Of Herbal Shampoos

Either the detergent is transformed into a solution or the manufacturer may provide the detergent solution directly. In another container, transfer roughly half of the container solution. Add alkanolamine, the secondary surfactant, to it. And whisk it to dissolve it. Add the fragrance ingredient to the other half of the detergent solution and dissolve it. Additionally, include it into the alkanolamine solution. Color and antiseptics will be added to the primary solution after dissolving independently in enough water. Clear sterile water is typically added to the solution to modify its final volume. Nevertheless, if lauryl alcohol ether sulphate is present in the preparation. The viscosity of the shampoo needs to be changed. Elec chloride solution is used for viscosity correction. Typically, a solution of sodium chloride is continuously supplied (Balaji et al., 2021).

Table No. 8 Herbal sunscreens available in market and their company names (Vijayalakshmi, 2018)

S.No	Product name	Company name
1.	Kesh King Anti-Hairfall Shampoo	Emami Ltd.
2.	Anti-Hair Fall Caffeine Shampoo	Himalaya Wellness Company
3.	Anti-Hair Fall Shampoo with Bhringaraja	Himalaya Wellness Company
4.	Kesh King Organic Rosemary Tulsi Anti-Hairfall Shampoo	Emami/Kesh King
5.	Kesh King Ayurvedic Anti-Hairfall Shampoo	Emami Ltd.
6.	Bio Kelp Protein Shampoo for Falling Hair	Biotique / Bio Veda pharmacy Pvt. Ltd.

Hair Serum

The dynamic and finely controlled process that underlies hair development is not entirely understood. It is a cyclical process that includes the synthesis, elongation, and eventual shedding of hair shafts. Human hair typically consists of anagen, catagen, and telogen phase follicles. During the anagen phase, the hair follicle readily grows the hair shaft and aggressively collects cytochrome. The telogen hair follicle cannot produce newborn hair shafts after it matures into the anagen hair follicle (Aruna et al., 2019). The recurring immune-mediated skin condition known as alopecia areata (AA) causes non-scarring hair loss. According to the Development and Evaluation of Herbal Hair Serum, the incidence range for the general population is between 1.7% and 2.1%, with a higher prevalence in patients aged 21 to 40. There is also no discernible difference in

incidence between males and females. Patients' quality of life may be negatively impacted by this illness in a way that is comparable to that observed for other skin conditions including dermatitis and psoriasis. The pathophysiology of AA can be attributed to inflammatory cascades that include an autoimmune process that produces autoantigens from proteins linked to melanogenesis and a breakdown of the immune privilege of the hair follicle, which is linked to T lymphocyte invasion (Begum et al., 2019).

Preparation Of Hair Serum

Every fresh herb, including peel from *Citrus sinensis*, roots of *Zingiber officinale*, and *Linum*. Particularly, 500 milliliters of water were used to weigh and dispense *Nigella sativa*, *Trigonella foenumgraecum*, and *usitatissimum* seeds. The aforementioned materials were boiled for fifteen minutes. After 15 minutes of boiling, they were allowed to cool before being filtered. Vitamin E and castor oil were introduced to the filtrate. The prepared serum was then stored in a spray container (Tiwari et al., 2021). Some of the herbal hair serums are mentioned in table 9.

Table No. 9 Herbal hair serums available in market and their company names (Hemalatha et al., 2026)

S.No.	Product names	Company names
1.	Mamaearth Rosemary Hair Serum	Mamaearth / Honasa Consumer Ltd.
2.	Kesh King Ayurvedic Hair Serum	Kesh King / Emami Ltd.
3.	Mountain Ebony Anti-Hair Fall Hair Serum	Mountain Ebony Anti-Hair Fall Hair Serum
4.	Indulekha Bringha Hair Serum	Indulekha
5.	Biotique Bio Almond & Cashew Hair Serum	Biotique
6.	Onion Hair Serum with Onion & Biotin	Mamaearth / Honasa Consumer Ltd.
7.	Almond & Cashew Colour Protect Hair Serum	Biotique / Bio Veda pharmacy Pvt. Ltd.

Hair Oil

Products for hair care include hair oil (Table 10). The formulations used to cleanse, alter the texture of hair, nourish hair, and preserve the healthy appearance of hair are referred to as hair care products. Hair oil is a hair care product that is applied to the hair to treat hair disorders such as baldness, graying, hair loss, and dry hair. It also helps to nourish the hair (Kuber et al., 2019). The growing interest of people in herbal cosmetics has led to a large demand for them. Herbal cosmetics are also more effective, have less negative effects, and are readily available. An integral component of herbal cosmetics is herbal hair oil. More people choose and utilize herbal hair oil for a variety of hair conditions. Hair tonics are herbal oils that contain herbal medications (Nerule et al., 2019).

Table No. 10 Herbal hair oils available in market and their company names (Joshi, 2017)

S.No	Product names	Company names
1.	Vatika Enriched Coconut Hair Oil	Dabur India Ltd.
2.	Dabur Amla Hair Oil	Dabur India Ltd.
3.	Kesh King Ayurvedic Hair Oil	Emami Ltd.
4.	Indulekha Bringha Oil	Indulekha
5.	Himalaya Anti-Dandruff Hair Oil	Himalaya Anti-Dandruff Hair Oil
6.	Himalaya Anti-Dandruff Hair Oil	Himalaya Wellness Company
7.	Dabur Cool King Thanda Hair Oil	Dabur India Ltd.

Oral and Personal Care Products

Millions of individuals worldwide now have better oral health because to advancements in dental care over the past century. However, the availability of sugary foods and the use of acidic beverages are increasing, which is contributing to an increase in tooth caries and oral illnesses. Our diets have changed which has increased teeth erosion and made room for the growth of oral microbial flora. More than 700 different bacterial species or phylotypes can be found in the varied oral microbial flora. Among these, certain bacteria produce dental plaque, which are sticky biofilms that develop on the surface of teeth and along the gum line. Maintaining a healthy and fresh-feeling mouth depends on removing this plaque from the tooth's surface and reducing bacteria that make acids that can erode enamel and cause bad odors. Inadequate dental care can result in cavities, tartar accumulation, and sensitive teeth due to acid erosion and plaque discoloration. There is a need for more effective strategies to prevent dental disease and decay.

Herbal Toothpastes

A dentifrice called toothpaste is used to clean, preserve, and enhance the condition of teeth. Good dental hygiene is essential for preventing issues with oral health and foul breath. The most frequent dental issues are periodontitis, gingivitis, cavities, gum disease, dental caries, and toothaches. Dental tartar and plaque must be removed from the mouth in order to properly clean teeth. The primary function of toothpaste is to clean teeth, which is regarded as a cosmetic benefit. Terms like "protects," "cleans," "freshens breath," "fights bacteria which may cause gum problems," "whitens," and "fights tartar" are examples of cosmetic claims (Shaikh et al., 2003). Even though dentifrices, another name for toothpaste, have been around since antiquity, novel formulations with active chemicals to prevent and/or treat oral problems have just lately been developed. The World Health Organization (WHO) reports that 80% of people use medicinal herbs for basic medical treatment. Tooth discoloration, altered flavor, and hypersensitivity reactions could result from the chemical ingredients used in toothpaste manufacturing. As a result, natural ingredients free of artificial sweeteners, perfumes, or preservatives do not affect the buccal cavity (Mamatha G et al., 2017). Toothpaste (Table 11) with polyherbal compounds is a natural alternative to traditional whitening procedures. These toothpastes contain a blend of herbal ingredients that are said to improve oral health and whiten teeth. Even though they might not be as successful at whitening as certain store-bought treatments, they can be a gentler and more natural substitute (Martinez et al., 2017).

Table no. 11 Herbal toothpaste available in market and their company names (Cai et al., 2020)

S.No	Product names	Company names
1.	Dabur Red	Dabur india Limited
2.	Dabur Meswak	Dabur india Limited
3.	Dabur Babool	Dabur india Limited
4.	Patanjali Dant Kanti	Patanjali Ayurved Ltd.
5.	ViccoVajradanti	Vicco Laboratories
6.	Complete Care Toothpaste	Himalaya Wellness company
7.	Colgate-Palmolive (India) Ltd.	Colgate Vedskhakti

Herbal Mouthwash

Nonetheless, mouthwash is the most widely used technique for administering the antibacterial agents after toothpaste. Mouthwash is an antiseptic fluid used to lessen the oral cavity's microbial load. Mouthwashes are liquids with anti-inflammatory ingredients. both analgesic and antimicrobial properties (Table 12). There are two kinds of mouthwashes: chemical and herbal. Phytochemicals are natural compounds found in herbal mouthwash that have the desired antibacterial and anti-inflammatory properties. The use of herbal mouthwash is growing in popularity because it doesn't include alcohol or artificial flavors, colors, or preservatives. Because it contains organic herbs that naturally cleanse and repair gums and teeth. Antimicrobial herbs including neem, yavanisatva, nagavali, gandhapurataila, pilu, bibhitaka, ocimum, Echinacea, chameli

leaves, etc. are found in many herbal mouthwashes. Some of the plants found in mouthwashes include peppermint, which cools the mouth, and clove, which has long been used for oral health due to its antiseptic, antibacterial, and antiviral properties.

Common Situations in which Mouthwash is used

1. **Bad Breath (Halitosis):** To eliminate microorganisms that cause odor and refresh breath.
2. **Plaque Control:** Assists in lowering the accumulation of plaque and keep your mouth clean.
3. **Gum disease and gingivitis:** used to lessen gum inflammation and bacterial infection
4. **Following Dental Procedures:** To encourage healing and avoid infection following surgery or tooth extraction.
5. **Mouth Ulcers:** Aids in reducing discomfort and hastening the healing of sores and ulcers.
6. **Prevention of Tooth Decay:** Fluoride-containing toothpastes in particular help to fortify enamel.
7. **Dry Mouth:** Herbal mouthwashes without alcohol help soothe dry mouth and increase comfort.
8. **Orthodontic Care:** Assists in keeping braces clean and inhibits the formation of bacteria.
9. **During Illness:** Pain or exhaustion makes it harder to control the bacterial burden during brushing.
10. **Overall Dental Health:** As an additional measure in addition to brushing (Shailesh et al., 2025).

Table no. 12 Herbal mouthwash available in market and their company names (AlJameel et al., 2020)

S.No	Product names	Company names
1.	Dabur Red Pulling Oil	Dabur India Ltd.
2.	Dabur Herbal Mouthwash	Dabur International
3.	Herbal/Ayurvedic oral-care mouthwash products	Patanjali Ayurved Ltd.
4.	Himalaya Hirora Mouthwash	Himalaya wellness company
5.	Himalaya Complete Care Mouthwash	Himalaya wellness company
6.	Cur-Q-Fresh Mouthwash	Cur-Q-Fresh

Herbal Soaps

A combination of sodium ions of different naturally occurring fatty acids makes up soap. A softer lather is produced when potassium is present in the fatty acid salt instead of sodium. Saponification or a basic hydrolysis process of a fat or oil produces soap. Natural herbs and substances that are better for the skin and less likely to have any negative effects are used to make herbal soaps (Table 13). To provide the best skin care solution for your skin, several natural soap producers also employ herbal remedies and aromatherapy. Herbal soaps are made entirely of natural materials and uncommon herbs, and they are shown to be very good for the skin. These soaps' incorporated botanicals offer medicinal and restorative properties. Qualities that provide the skin with particular advantages, like moisture, strength, healing, and sustenance. These soaps also include essential oils, vitamin E, aloe vera, and super fatty oils, all of which are linked to healthy skin and general well-being. Herbal soaps are also useful for treating a variety of skin conditions.

Preparation of Herbal Soaps

In order to cleanse and nourish the skin, herbal soaps are usually formulated using natural oils, herbs, and plant extracts together with gentle surfactants. Herbal soaps use materials that are high in vitamins, antioxidants, and vital fatty acids, in contrast to conventional soaps that could contain synthetic chemicals. The standard procedures for making herbal soaps comprise:

- **Saponification:** This process creates soap by reacting fats or oils with an alkaline material, typically sodium hydroxide. Herbal oils like palm, coconut, or olive oils are frequently utilized as foundation oils in herbal soaps.
- **Herbal Extracts:** For their medicinal qualities, natural extracts such as neem, aloe vera, chamomile, lavender, and tea tree oil are added.

- **Essential Oils:** Essential oils have anti-inflammatory, antibacterial, and antioxidant properties for the skin in addition to their smell. For instance, lavender oil is well-known for its calming properties, while tea tree oil is utilized for its antibacterial properties.
- **Colorants and Additives:** Natural colorants like turmeric, which has anti-inflammatory and brightening properties, may also be used in herbal soaps.

Market trends for herbal soaps

- **Growing Demand for Organic Products:** As consumers get more environmentally conscious and health conscious, there is a growing demand for natural skincare products, such as herbal soaps, that are organic. Brands are Organic certifications are being used more and more to cater to this expanding market.
- **Personalization and Customization:** A lot of customers are choosing herbal soaps that address their particular skin issues. In order to address specific requirements (such as acne, dry skin, or anti-aging), customizable soaps that blend various herbs and essential oils are growing in popularity.
- **Ethical and Sustainable Sourcing:** The manufacturing of herbal soaps depends heavily on sustainability. In order to reduce their influence on the environment, brands are emphasizing the use of products that are sourced ethically and without cruelty, and their packaging is frequently composed of recyclable or biodegradable materials.
- **Innovation in Ingredients:** Using exotic herbs, oils, and botanicals in herbal soaps is becoming more and more popular. For their skin-nourishing properties, ingredients including rosehip oil, argan oil, and moringa oil are being used.
- **Multipurpose Soaps:** Customers are looking for items that serve multiple purposes and offer extra advantages. Growing in popularity are herbal soaps that also provide skin-brightening, exfoliating, or UV protection.
- **Luxury Herbal Soaps:** As health and self-care become more popular, there is a developing market for luxury herbal soaps, which are frequently positioned as high-end, premium goods. These soaps' packaging is made to appeal to premium buyers, and they are frequently enhanced with exotic oils and herbs.
- If desired, add dried flowers, herbs, or exfoliants like coffee grinds, oats, or poppy seeds (Pardhi et al., 2025).

Table no. 13 Herbal soaps available in market and their company names (Gnaneshwari et al., 2025)

S.No	Products names	Company names
1.	Dabur Gulabari Bath Soap	Dabur India Ltd.
2.	Neem, Sandalwood, Aloe Vera and other Herbal Soaps	Khadi Natural
3.	Herbal Soaps	Vaadi Herbals
4.	Medimix class 18 Herbs	Medimix/ AVA Group
5.	Patanjali Haldi Chandan Kanti	Patanjali Ayurved Ltd.
6.	Patanjali Neem Kanti Body Cleanser/Soap	Patanjali Ayurved Ltd.
7.	Neem & Turmeric Soaps	Himalaya Wellness company

Herbal Perfumes

Fragrances and perfumes, which are associated with elegance, beauty, and emotional expression, have been a vital component of human existence since ancient times. By creating pleasant feelings and promoting relaxation, fragrances can contribute to emotional health and personal hygiene in addition to being aesthetically pleasing of the different (Souza et al., 2023). Since their scents are inherently soothing, sophisticated, and palatable to everybody, floral perfumes hold a unique place in the human experience. Fragrances are frequently used into the formulas of numerous products in the modern pharmaceutical and

cosmetic industries, such as lotions, creams, soaps, deodorants, and hair care items. In addition to adding sensory appeal, fragrances increase customer satisfaction and product acceptability.

Table no. 14 Herbal perfumes available in market and their company names (Vora et al., 2024)

S.No	Product names	Company names
1.	Herbal EDPs, attars and natural essential oils	Khadi India
2.	Sandalwood-based fragrances product	Mysore Sandal
3.	Sunehre Din, Chandani Raatein, Parijat, Raat Ki Rani	Forest Essentials
4.	Botanical fragrance products	Aaranyaa/Ayurvedic fragrance brands Essential-oil fragrance
5.	Aromatherapy Associates	Essential-oil fragrance products

Commonly Used Herbs in Herbal Cosmetics

ALOE BARBADENSIS MILLER

Aloe vera, (Fig 8) a succulent, drought-tolerant perennial plant in the Asphodelaceae family, has been utilized in traditional Chinese medicine (luhui) and Indian medicine (ghrita kumari). Of the 420 Aloe species, A. Vera is one of the most potent bioactive plants. It contains over 200 bioactive chemicals and 75 nutrients. A. Vera is useful in the treatment of wound healing, diabetes, immunomodulation, aging, skin-related issues, and other conditions because of its many functional qualities, which include antibacterial and antioxidant activity. The most commonly used portions of the A. vera plant for therapeutic purposes are the leaves, which have three different sections: latex, gel, and rind. These parts contain different phytochemicals (Kumar et al., 2024).



Fig. 8 Aloe barbadensis Miller

Azadirachta indica

Medicinal plants have played a crucial role in human society's efforts to combat illness from the dawn of civilization. Azadirachta Indica A is another name for Azadirachta indica (Fig 9). For more than 4,000 years, neem has been used for its medicinal properties. Neem is called "arista," which translates to perfect, complete, imperishable, in Sanskrit." Antiseptics, antivirals, antipyretics, anti-inflammatory agents, ulcer-healing agents, and antifungal are among the compounds found in most plant parts, such as fruits, seeds, leaves, bark, and roots. Since Siddiqui's original study in the mid-1900s, a significant amount of chemical research on neem tree products has been carried out. Since 1942, around 135 compounds have been identified (Kumar et al., 2025).



Fig. 9 Azadirachta indica

Curcuma Longa

The rhizomes of the plant *Curcuma longa* (Fig 10), a member of the Zingiberaceae family, are used to make the spice turmeric. It has significant cultural and medical applications. To flourish, it requires temperatures between 20°C and 30°C as well as a significant amount of rainfall each year (Cikrikci et al., 2008). Turmeric's primary component, Curcumin, is a polyphenols with numerous health advantages. The main problem with consuming Curcumin is its low bioavailability, which results from its quick metabolism, quick excretion, and limited absorption. A number of substances have been added to increase the bioavailability of Curcumin. It has some biological activities likes anti-viral, anti-fungal, anti-bacterial, anti-inflammatory etc (Revathy et al., 2011).



Fig. 10 *Curcuma longa*

Ocimum Sanctum

Native to the Indian subcontinent, tulsi also called holy basil or tulsi in Hindi or Sanskrit is an aromatic herb with several health benefits that belongs to the Lamiaceae family (Fig 11). It has been a part of Ayurvedic medicine for almost 3,000 years. Because of its therapeutic qualities, tulsi is commonly known to as the "ELIXIR OF LIFE" in the Ayurvedic system and has been used to treat a many medical disorders. Tulsi leaf extracts are advised for the treatment of rheumatism, respiratory ailments, and other ailments like colds (Jamshidi N et al., 2017). Other conditions like epilepsy, asthma, hiccups, coughing, skin and hematological diseases, parasite infections, neuralgia, headache wounds, inflammation, and oral conditions are also treated with it (Nadkarni KM, 2004, Verma et al., 2026). Hindus throughout India adore the sacred plant known as Tulsi. The word "Tulsi" from Sanskrit. "Unmatchable one" and "incomparable one" are what that signifies. The "queen of herbs," Tulsi, is described as a fearsome and healing plant in ancient literature (Vijayalakshmi P et al., 2015).



Fig. 11 *Ocimum sanctum*

Emblica Officinalis

Amla, also known as *Emblica officinalis* (EO) (Fig 12) (Family: Euphorbiaceae), is a traditional plant that grows profusely in India's deciduous forests and is used all over the world to treat a variety of illnesses. The presence of vitamin C, ellagic acid, gallic acid, phyllembelin, tannin, phyllemblic acid, lipids, and emblicol is shown by a thorough examination of its phytochemistry. This plant's fruit is frequently used for its laxative, diuretic, and cooling properties. Additionally, it is used to treat dyspepsia, jaundice, and anemia. The seeds are used to treat a variety of respiratory conditions, including stomach issues, asthma, and bronchitis. Parts of this plant have been extracted by a number of scientists and researchers in order to investigate its pharmacological properties and medicinal potential. This plant's hepatoprotective, gastro protective, cytoprotective, anticancer, antifungal, and antiulcer properties have all been investigated. Additionally, this plant is said to provide additional health benefits in traditional remedies and Ayurveda. This plant is generally accessible and common. It is regularly consumed by a variety of Indians. It is a key component in hair oils, colors, shampoos, cosmetics, and the well-known health remedy chyavanprash (Deshmukh, C. D., 2021).



Fig. 12 *Emblica officinalis*

Santalum Album

Studies on pharmacology have demonstrated the abortifacient, hepatoprotective, stomachic, urinary antiseptic, antiviral, and antiherpestic properties of sandalwood (Fig 13) and its root bark. Anti-remorogenic, anti-inflammatory, anti-mitotic, antiviral, anti-cancerous, anti-hypertensive, antipyretic, sedative, ganglionic blocking, and insecticidal qualities are all present in hydrolyzed exhausted sandalwood powder (HESP). Sandalwood oil's calming and calming properties have been used to treat respiratory tract infections, particularly chronic bronchitis with persistent dry cough. It has been shown to have apoptotic, cytotoxic, antiviral, and anti-*Helicobacter pylori* effects. The heartwood yields bioactive compounds with anti-tumor, anti-cancer, anti-viral, anti-*Helicobacter pylori*, and cytotoxic santalols and lignans (Rakesh et al., 2015).



Fig. 13 *Santalum album*

Mechanism of Action of Herbal Cosmetics

Antioxidants Activities

Herbal antioxidants use metal chelation and electron donation to eliminate reactive oxygen species (ROS). In addition to scavenging free radicals, polyphenols increase the activity of natural antioxidant enzymes such as catalase and superoxide dismutase. This action stops oxidative damage to proteins, lipids, and DNA that is linked to inflammation and photoaging (Wenczler et al., 2000).

Antimicrobial Activities

Phytochemicals interfere with bacterial quorum sensing, break down microbial membranes, and prevent the production of biofilms. Cytoplasm leakage results from essential oils' disruption to cell membrane integrity. Alkaloids prevent harmful organisms from synthesizing proteins and DNA (Pazyar et al., 2013).

Enzyme Inhibition and Collagen Synthesis

Herbal actives modulate key enzymes regulating skin homeostasis. MMP inhibition by EGCG prevents collagen and elastin degradation. Tyrosinase inhibitors reduce melanogenesis for hyperpigmentation control. Procollagen peptidase activators enhance collagen maturation and dermal architecture (Pierard et al., 2002).

Uv Protection and Photoprotection

Botanical compounds absorb UV radiation and mitigate photodamage. Polyphenols absorb UVB and attenuate UV induced erythema and DNA damage. Flavonoids reduce sunburn cell formation and suppress inflammatory mediators following UV exposure (Rele et al., 2003)

Advantages of Herbal Cosmetics

- The use of herbal medicine has a long history and is associated with improved patient acceptance and tolerance.

- The only sustainable source of affordable medications for the world's expanding population is medicinal plants, which have a renewable source.
- Herbal goods and therapeutic plants are produced in an environmentally responsible manner.
- Long-standing and seemingly inconspicuous use of herbal remedies may provide evidence of their effectiveness and safety.
- Medicinal plants are readily available, particularly in emerging nations with great agroclimatic, cultural, and ethnic biodiversity like India.
- They have no adverse side effects and don't cause allergies.
- Skin and hair can easily assimilate them.
- Compared to synthetic cosmetics, they are highly effective in small amounts.
- Easily accessible in big (Palle et al., 2021).

LIMITATIONS AND CHALLENGES

Limitations

Due to the growing consumer demand for natural and organic products, the cosmetic industry has seen a rise in the use of herbal ingredients in recent years. Herbs are frequently used in skincare, hair care, and body care formulations because of their anti-inflammatory, antioxidant, and skin-soothing qualities, which make them a popular choice. However, despite these advantages, using herbal ingredients is not risk-free; many consumers mistakenly believe that natural products are always safe, ignoring the possibility of negative reactions and toxicity. A number of the herbs used in cosmetics contain bioactive compounds that can cause allergic reactions, skin irritation, photosensitivity, and even systemic toxicity after prolonged use. For example, while being widely utilized for their medicinal properties, substances like aloe vera, tea tree oil, and lavender oil qualities, have been known to have negative consequences for some people. Furthermore, the industry for herbal cosmetics lacks established rules and quality control, which raises questions about their safety (Muley 2024).

CHALLENGES AND CONSIDERATION

Potency and Quality: Different sources, cultivation techniques, and extraction procedures can make it challenging to guarantee the constant potency and quality of the herbal ingredients. This may compromise the safety and effectiveness of skincare products.

Sensitivities and Allergic responses: Certain herbal ingredients may cause allergic responses or skin sensitivities in certain persons, which can result in inflammation, redness, or irritation. When launching new products, patch tests and skin reaction monitoring are essential.

Stability and Shelf-Life: Compared to their synthetic counterparts, herbal compounds, especially those in their natural state, may be less stable and have a shorter shelf life. Concerns about formulation and packaging are essential for maintaining product effectiveness and halting deterioration over time.

Quality Control and Standardization

The term "quality control" refers to the methods used to maintain the validity or quality of a manufactured goods. There should be some kind of quality control in place regardless of the method used to make a herbal mixture. There is no assurance that the herb within the container matches the one on the label outside if there is insufficient quality control. The industry's widespread contempt for quality control has damaged the reputations of numerous important medicinal plants. Harvesting dates, growing practices, storage, activity, stability of active ingredients, and product purity have all improved as a direct result of advancements in analytical procedures. All of these advantages have led to a notable improvement in the quality of herbal goods.

Variation between or within species: Most of the diversity among the constituents is genetically controlled, and it may be associated with the country of origin.

Environmental factors: the weather, elevation, and other environmental elements, along with the conditions of the quality of herbal ingredient might be affected by the culture of the plant.

Harvesting time: Since it is generally known that a plant's constituent concentrations might vary over the course of its growing cycle or even within a single day, it is crucial to identify the ideal time to harvest specific herbs.

Post-harvest factors: Treatment procedures and storage circumstances can have a significant impact on the quality of a herbal ingredient. Following harvest, drying methods may result in the loss of thermo-labile active substances, and inappropriate storage might result in microbial infection (Kaziz et al., 2023).

Standardization of Herbal Cosmetics

Cosmetics are defined by the Drugs and Cosmetic Act as items that are meant to be rubbed, poured, sprinkled, or sprayed on, added to, or used in various ways to clean, beautify, promote beauty, or change the appearance of the human body or any portion of it. The Greek word "Kosmetikos," which implies the skill of arranging or beautifying, is where the word "cosmetic" originates. The worldwide cosmetics sector has seen a sharp increase in demand for natural and herbal products. The tendency emphasizes the necessity for clear standards because the issue for standardization enhancement primarily involves diversity in plant-based goods. Many herbal cosmetics contain novel substances, especially those with traditional medical significance in natural product regions. The U.S. Food and Drug Administration (FDA) classify the products as either drugs or cosmetics, or both, under the Drugs and Cosmetic Act. Herbal cosmetics fall under several important categories, such as facial care, hair care, severe acne, and depigmentation, while another category includes formulations like herbal shampoos, soaps, powders, and fragrances. The standardization process is essential for ensuring consistent quality, safety, and efficacy in herbal preparations. Adherence to regulatory bodies not only guarantees safety and clear labeling, but also encourages market growth by trade errors (Jamdhade et al., 2025).

REGULATORY ASPECTS

The WHO recommendations place a strong emphasis on manufacturers and regulatory agencies sharing accountability for ensuring the quality of herbal goods. Guidelines for data evaluation, quality assurance, and adherence to Good Manufacturing Practice (GMP) requirements must be established by regulatory bodies. Manufacturers are required to follow Good Laboratory Practice (GLP) guidelines, Good Agricultural and Collection Practices (GACP), and GMP while keeping meticulous records. Technical and logistical assistance might be used as incentives for GACP implementation. Using a variety of analytical methods, quality control departments make sure that official pharmacopoeia and monographs are followed. Registration requires comprehensive product information, such as ingredients, manufacturing specifications, and usage guidelines. Pharmacovigilance centers keep an eye on the efficacy and safety of herbal products (Fig 14) (Banu et al., 2025).

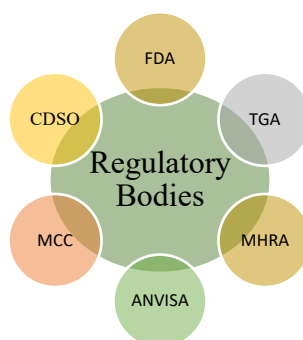


Fig. 14 Different Regulatory Bodies

The following are the three categories of manufacturing licenses that Ayush has granted:

FULL MANUFACTURING LICENSE

Unquestionably, it is an assembling permit. In this case, you will be putting together and advertising the thing. After that, you ought to set up your own assembly unit. You must meet all of the requirements stated by the AYUSH state authority. There are different requirements for the assembling permit in each Indian state. For example, according to AYUSH Delhi, the following are some requirements for an assembling permit of Ayurvedic drugs: your assembling unit should be at least 1200 square feet in a modern area. These are the specific requirements for a complete assembling permit from AYUSH for Delhi. This only applies to one type of drugs. You will need to add more space if you want to add more classifications. The assembly

line should have GMP assurance. You desire two pharmacists and Ayurvedic specialists. You should have every piece of equipment needed for bundling and assembly. Drug controllers arrive for routine desk work and property inspections (P.Kulkarni et al., 2023).

LOAN LICENSE CREDIT LICENSE

It is an assembling permit that allows you to credit an outside producer's assembling unit to make your products; this eliminates the need for you to claim an assembling unit. You should apply for a loan permit with a GMP-guaranteed manufacturer and it will be granted to your organization. After that, you can make your products on the producer's production line; perhaps you can provide the raw materials and packaging materials, or the manufacturer can arrange it from his sources. The transformation charges, which are created and promoted by your organization, will be billed to you by the maker. It won't mention anything pertaining to the producer you spoke with. The following is a clear requirement for an AYUSH loan permit for Delhi. For example, AYUSH Delhi states that the requirements for an Ayurvedic prescription loan permit are listed below; you must have a valid justification for using three minutes. One area for the storage of raw materials, one for finished materials, and one for offices. The advance license needs to be renewed on a regular basis. Drug investigators visit your location for routine inspections. Pharmacists and Ayurvedic specialists are not needed. Your company should be registered in the same state as the manufacturer (P.Kulkarni et al., 2023).

CONTRACT OR THIRD-PARTY LICENSE

It is a license that allows you to build the item using an outside maker's assembly permit. You will only be displaying the product. No assembling unit must be claimed, and no authorization is required. The producer will complete all permits with the AYUSH administration. Since you will be using the manufacturer's fabrication permission, the manufacturer needs obtain expert approval for your product. The producer may be able to arrange it from his sources, or you may be able to supply the raw materials and packaging. Finally, the manufacturer delivers the finished product to you. The product name will state that your company is showcasing an item that was manufactured by XYZ. The manufacturer will bill you for the alteration, which is the cost of having your item put together in his office. Additionally, you will be billed by the manufacturer for the item endorsement costs. You ought to declare that you are the owner of the thing in an authentic report. An authoritative archive should also state that your company retains ownership of the item in the event of any doubt (P.Kulkarni et al., 2023).

FUTURE PROSPECTS

It is anticipated that the increased desire for natural, sustainable, and safe goods will fuel the expansion of the herbal cosmetics sector.

1. Natural & Clean Beauty Demand: Gen Z and Millennials like transparent, plant-based products that promote long-term skin health and wellness.

2. Integration of Technology and Green Chemistry: AI, nanotechnology, and sophisticated extraction are enhancing the potency, stability, and development of tailored products of ingredients.

3. Personalized Herbal Therapy: AI-powered diagnostics and smartphone applications are making it possible for personalized blends based on genetics, lifestyle, and skin microbiota to emerge.

4. Sustainability & Ethics: Increasing consumer trust and brand success will need fair trade, ethical sourcing, and environmentally responsible packaging.

5. Tougher Regulation: International regulation and standardization will improve product quality, decrease green washing, and promote safer innovation.

6. Culturally Rooted Brands: Because of their authenticity and support of biodiversity, traditional, locally distinctive herbal products (such as Ayurveda and Kambo) are gaining popularity all over the world.

7. The expansion of digital platforms and D2C e-commerce models will allow smaller firms to access audiences globally at a reasonable cost.

8. Growing R&D & Investment More financing is driving innovation, clinical validation, and collaboration between science and conventional medicine (Sar 2025).

CONCLUSION

Preparations containing phytochemicals from various botanical sources that affect skin function and supply nutrients are known as herbal cosmetics essential for hair or skin health. Customers are more aware of herbal goods because of the widespread perception that chemical-based cosmetics are bad for the skin. The greatest way to lessen skin issues including hyper pigmentation, wrinkles, aging, and rough skin texture, among others, is to use cosmetic items. The market for herbal cosmetics is growing quickly. Thus, herbal cosmetics are superior to synthetic cosmeceuticals because of their efficiency.

Conflict of Interest: None

Acknowledgement: We would like to express our sincere gratitude to Council of Science and Technology, Uttar Pradesh (CST UP) for providing necessary support and resources to make this review paper possible.

REFERENCES-

- [1] Aruna V, Amruthavalli GV, Gayathri R (2019). Hair root activation by anagen grows- a herbal hair growth serum. *Dermatol & Cosmet*, 1(3), 56-9.
- [2] Afreen Anis, Abu Tabish, Rupesh Kumar Das, Dipendra Kohar, Prabal Sharma and Jyoti Phogat (2024). An overview of medicinal plants for the formulation of anti-ageing face packs. *World Journal of Pharmaceutical Research*, 13(11), 316-330.
- [3] AfrojAyyaj Shaikh (2023). Comparative evaluation of herbal toothpaste formulations: A preliminary in-vitro study *Indian Journal of Pharmacy and Pharmacology*, 172–176.
- [4] Arushi, Behera, A., Sethiya, N. K., & Shilpi, S. (2024). A systematic study on herbal cream for various clinical and therapeutic application: Current status and future prospects. *Journal of Herbal Medicine*, 45, 100880. <https://doi.org/10.1016/j.hermed.2024.100880>
- [5] AlJameel, A. H., & Almalki, S. A. (2020). Effect of triphala mouthrinse on plaque and gingival inflammation: A systematic review and meta-analysis of randomized controlled trials. *International Journal of Dental Hygiene*, 18(4), 344–351. <https://doi.org/10.1111/idh.12444>
- [6] Amit kumar K.Jhadav, Ulhas S. Surwase, Aditya V. Thengal, Formulationand Evaluationof PolyherbalHair Oil, *InternationalJournal of Science and Research*, ISSN: 2319-7064.
- [7] Banu, A., Ali, N. M., Muqeeth, F. M. A., & Shoeib, M. A. (2025b). Herbal Cosmetics and Cosmeceuticals: a natural approach to skin, hair, and oral care. *Journal of Pharmaceutical Research International*, 37(6), 122–136. <https://doi.org/10.9734/jpri/2025/v37i67708>.
- [8] Blanco-Dávila, Feliciano M. D (2000). Beauty and the Body: The Origins of Cosmetics. *Plastic and Reconstructive Surgery*, 105(3), 1196-1204.
- [9] Bharti, Mahak Tamanna, Saklain Ansari and Pooja Negi. A Research On Formulation And Evaluation Of Herbal Walnut Shell Face Scrub. *World Journal Of Pharmaceutical And Medical Research*, 11(7), 202-209.
- [10] Balaji S. Mirkale 1, Yogesh R. Harangule 2, Nandkishor B. Bawage 3, Shyamleela. Bawage. (2021). Review on Hair Care Products and It's Evaluation. *International Journal Of Innovative Research In Technology*, 8(3), 2349-6002.
- [11] Begum R, Begum A (2019). Preparation and evaluation of herbal hair oil. *Int J of Res and Anal Reviews*, 6(1), 266-9.
- [12] B. Ramya Kuber, Ch. Lavanya, Ch. Naga Haritha, S. Preethi, G. Rosa (2019). Preparation and evaluation of poly herbal oil, *Journal of Drug Delivery and Therapeutics*, 9(1), 68-73.
- [13] Banu, A., Ali, N. M., Muqeeth, F. M. A., & Shoeib, M. A. (2025). Herbal Cosmetics and Cosmeceuticals: a natural approach to skin, hair, and oral care. *Journal of Pharmaceutical Research International*, 37(6), 122–136. <https://doi.org/10.9734/jpri/2025/v37i67708>.
- [14] B. Ramya Kuber, Ch.Lavanya, Ch.Naga Haritha, S.Preethi, G. Rosa, Preparation andevaluation ofpoly herbaloil, *Journalof DrugDelivery and Therapeutics*, 2019; 9(1):68;73.
- [15] Chaudhri, S. K., & Jain, N. K. (2014). History of cosmetics. *Asian Journal of Pharmaceutics (AJP)*, 3(3). <https://doi.org/10.22377/ajp.v3i3.260>
- [16] Chavda, V. P., Acharya, D., Hala, V., Daware, S., & Vora, L. K. (2023). Sunscreens: A comprehensive review with the application of nanotechnology. *Journal of Drug Delivery Science and Technology*, 86, 104720. <https://doi.org/10.1016/j.jddst.2023.104720>.

- [17] Cindy Cruz Martínez, Martha Diaz Gómez & Myung Sook Oh (2017) Use of traditional herbal medicine as an alternative in dental treatment in Mexican dentistry: a review, *Pharmaceutical Biology*, 55(1), 1992-199.
- [18] Cikrikci, Simay, Erkan Mozioglu, and Hasibe Yilmaz (2008). "Biological activity of curcuminoids isolated from *Curcuma longa*." *Records of Natural Products*, 2(1), 19.
- [19] Cai, H., Chen, J., Panagodage Perera, N. K., & Liang, X. (2020). Effects of herbal mouthwashes on plaque and inflammation control for patients with gingivitis: A systematic review and meta-analysis of randomised controlled trials. *Evidence-Based Complementary and Alternative Medicine*, 2020, 2829854. <https://doi.org/10.1155/2020/2829854>
- [20] Dongare, P. N., Bakal, R. L., Ajmire, P. V., Patinge, P. A., More, M. P., & Manwar, J. V. (2021c). An overview on herbal cosmetics and cosmeceuticals. *International Journal of Pharmaceutical Sciences Review and Research*, 68(1). <https://doi.org/10.47583/ijpsrr.2021.v68i01.013>.
- [21] D.MamathaG.Naveen Kumar (2017). Preparation, Evaluation and Comparison of Herbal Toothpaste with Markedly Available Tooth pastes *Journal of Pharmacy and Biological Sciences*, 12(6), 01-06.
- [22] Deshmukh, C. D. (2021). PHYTOCHEMICAL AND PHARMACOLOGICAL PROFILE OF *EMBLICA OFFICINALIS* LINN. *Journal of Medical Pharmaceutical and Allied Sciences*, 10(2), 2698–2703. <https://doi.org/10.22270/jmpas.v10i2.1054>.
- [23] Ertel, K. (2000). MODERN SKIN CLEANSERS. *Dermatologic Clinics*, 18(4), 561–575. [https://doi.org/10.1016/s0733-8635\(05\)70207-2](https://doi.org/10.1016/s0733-8635(05)70207-2).
- [24] Givol, O.; Kornhaber, R.; Visentin, D.; Cleary, M.; Haik, J.; Harats, M (2019). A systematic review of *Calendula officinalis* extract for wound healing. *Wound Repair Regen.*, 27, 548–561.
- [25] Gediya SK, Mistry RB, Patel UK, Blessy M, Jain HN. (2011). Herbal plants: used as cosmetics. *J Nat Prod Plant Resour*, 1, 24-32.
- [26] Gudade Gayatri Ashok, Gaikwad Vishal Shivaji (2024). A REVIEW ON HERBAL LOTION. *International Journal of Creative Research Thoughts (IJCRT)*, 10(10), 2320-2882.
- [27] Gelmetti, C. (2001). Skin cleansing in children. *Journal of the European Academy of Dermatology and Venereology*, 15(s1), 12–15. <https://doi.org/10.1046/j.0926-9959.2001.00003.x>.
- [28] Green, A. C., Williams, G. M., Logan, V., & Strutton, G. M. (2010). Reduced melanoma after regular sunscreen use: Randomized Trial Follow-Up. *Journal of Clinical Oncology*, 29(3), 257–263. <https://doi.org/10.1200/jco.2010.28.7078>.
- [29] Godse, V. V., Waghmode, R. S., Khade, S. B., & Bangar, B. N. (2025). Formulation and evaluation of herbal scrub using fenugreek, coffee, honey and others: A review. *Research Journal of Pharmaceutical Dosage Forms and Technology*, 16(4), 339–342. <https://doi.org/10.52711/0975-4377.2024.00052>
- [30] Gnaneshwari, V., Raveena, R., Akhila, R., Anusha, R., Hanumanthu Nayak, S., & Aishwarya, S. (2025). Herbal soaps: A comprehensive review of composition, benefits, and future directions. *International Journal of Pharmacy and Industrial Research*, 15(1), 10–20. <https://doi.org/10.61096/ijpir.v15.iss1.2025.10-20>
- [31] Hardy, A.; Farrant, A.; Rollinson, G.; Barss, P.; Vaishnav, R (2008). A study of the chemical composition of traditional eye cosmetics ("the kohls") used in Qatar and Yemen. *J. Cosmet. Sci.* 2008, 59, 399–418.
- [32] Hirudkar, V.; Shivhare, V (2022). A review on Ayurvedic cosmeceuticals and their modes of action. *J. Drug Deliv. Ther.* 2022, 12, 204–206.
- [33] Hazra, J. (2013). Concept of beauty and Ayurveda medicine. *Journal of Clinical & Experimental Dermatology Research*, 04(03). <https://doi.org/10.4172/2155-9554.1000178>.
- [34] Han, B.; Chong, J.; Sun, Z.; Jiang, X.; Xiao, Q.; Zech, J.; Roberts, P.; Rao, H.; Yang, Y (2021). The rise of the cosmetic industry in ancient China: Insights from a 2700-year-old face cream. *Archaeometry*, 63, 1042–1058.
- [35] Hardy, A.; Walton, R.; Vaishnav, R.; Myers, K.; Power, M.; Pirrie, D (2006). Chapter 5 Egyptian eye cosmetics ("Kohls"): Past and present. In *Physical Techniques in the Study of Art, Archaeology, and Cultural Heritage*, (1), 173–203.
- [36] Hemalatha, E., Kathirnila, V., Mahalakshmi, M., Ramya, R., Sushmitha, N., & Senthil, A. (2026). A comprehensive review on herbal hair serum: Formulation and evaluation approaches. *International Journal of Pharmaceutical Sciences*, 4(8), 1684–1691. <https://doi.org/10.5281/zenodo.21870767>

- [37] Harshali Wadekar, Rizwan Thara, Preparation and Evaluation of Herbal Hair Oil, International Journal of Science and Research, ISSN: 2319-7064.
- [38] Jain, N., & Chaudhri, S. (2009). History of cosmetics. Asian Journal of Pharmaceutics, 3(3), 164. <https://doi.org/10.4103/0973-8398.56292>.
- [39] Jamdhade, S. V. S. K. R. G. M. (2025). Standardizing Herbal cosmetics: analytical approaches, regulatory complexities, and emerging trends. Zenodo (CERN European Organization for Nuclear Research). <https://doi.org/10.5281/zenodo.15152062>.
- [40] Jamshidi N, Cohen MM. (2017) .The clinical efficacy and safety of Tulsi in humans: a systematic review of the literature. Evidence Based Complementary and Alternative Medicine, 9217567.
- [41] Joshi, A. A. (2017). Formulation and evaluation of polyherbal hair oil. International Journal of Green Pharmacy, 11(1), 1–5. <https://doi.org/10.22377/ijgp.v11i01.885>
- [42] Kazi, S., Bais, S., & Parade, K. (2023). An Updated Review on Quality Aspects of Herbal Drug and its Formulation. International Journal of Advanced Research in Science Communication and Technology, 447–454. <https://doi.org/10.48175/ijarsct-7996>.
- [43] Kulkarni, P., Hadal, Y., Amare, S., Patil, B., & Vaidhun, B. (2023). Regulatory aspects of herbal formulations in India. International Journal of Scientific Research in Science Engineering and Technology, 280–285. <https://doi.org/10.32628/ijrsrset23103212>.
- [44] Kumar D, Rajora G, Parkash O, et al (2016). Herbal cosmetics: An overview. International Journal of Advanced Scientific Research, 1(4), 36-41.
- [45] Khan BA, Akhtar N, Khan HM, et al (2011). Basics of pharmaceutical emulsions: A review. African journal of pharmacy and pharmacology, 5(25), 2715-2725. doi:10.5897/AJPP11.698.
- [46] KR, D. V. S. T. B. V. V. K. (2019). Review On Herbal Cosmetics In Skin Care. Zenodo (CERN European Organization for Nuclear Research). <https://doi.org/10.5281/zenodo.2537599>.
- [47] Kulkarni, K. D. J. S. M. Z. D. K. (2025). Formulation And Evaluation Of Herbal Face Pack. Zenodo (CERN European Organization for Nuclear Research). <https://doi.org/10.5281/zenodo.17747951>.
- [48] Kabigting, F. D., Nelson, F. P., Kauffman, C. L., Popoveniuc, G., Dasanu, C. A., & Alexandrescu, D. T. (2009). Malignant melanoma in African-Americans. Dermatology Online Journal, 15(2), 3. <https://doi.org/10.5070/d33k77p755>.
- [49] Kumar, S., Kumar, S., Kalita, S., Basumatary, I. B., Kumar, S., Kumar, S., Ray, S., & Mukherjee, A. (2024). Recent advances in therapeutic and biological activities of Aloe vera. Biocatalysis and Agricultural Biotechnology, 5(7), 103084. <https://doi.org/10.1016/j.bcab.2024.103084>.
- [50] K.D Mali, R.M.Shroff, S.D.Chaudhari, S.S.Bacchav, Formulation and Evaluation of Ayurvedic Herbal Oil, Indo American Journal of Pharmaceutical Research, ISSN NO: 2231-6876
- [51] Leek, F. F. (1967). The practice of dentistry in Ancient Egypt. The Journal of Egyptian Archaeology, 53(1), 51–58. <https://doi.org/10.1177/030751336705300109>.
- [52] McCreesh, N.; Gize, A.; David, A (2011). Ancient Egyptian hair gel: New insight into ancient Egyptian mummification procedures through chemical analysis. J. Archaeol. Sci, 38, 3432–3434.
- [53] Mohta, A. (2010). Kajal (Kohl) - A dangerous cosmetic. Oman Journal of Ophthalmology, 3(2), 100. <https://doi.org/10.4103/0974-620x.64242>.
- [54] Mamillapalli V, Katamaneni M, Tiyyagura VM, Kanajam P, Namagiri AP, Thondepu H, et al (2020). Formulation, Phytochemical, Physical, Biological Evaluation of Polyherbal Vanishing Cream, and Face wash. Research Journal Pharmaceutical Dosage Form and Technology, 12(3), 139.
- [55] Meshram, S. A., & Pardhi, S. (2025). Review on formulation and evaluation of herbal shampoo. World Journal of Biology Pharmacy and Health Sciences, 21(2), 565–571. <https://doi.org/10.30574/wjbphs.2025.21.2.0201>.
- [56] Muley, S. N. G. a. K. S. G. G. T. D. S. S. (2024). Toxicity and adverse effects of herbal ingredients in cosmetic products: A Comprehensive review. Zenodo (CERN European Organization for Nuclear Research). <https://doi.org/10.5281/zenodo.14016553>.
- [57] Mamgain, S., & Kumar, A. (2025). Formulation and evaluation of herbal face pack. International Journal of Research in Agronomy, 8(6), 479–484. <https://doi.org/10.33545/2618060X.2025.v8.i6f.3063>.

- [58] Maheshwari, P., Chakraborty, D., Giramalla, P., Jagtap, C. S., Chaudhari, S., Yadav, P. R., & Galib. (2026). A scoping review of methodologies opted for photoprotection of herbal formulation for the herbal sunscreen formulation: Evaluation techniques for plant-based sunscreens. *Indian Journal of Traditional Knowledge*, 25(4), 309–325. <https://doi.org/10.56042/ijtk.v25i4.22916>.
- [59] Nikita wanjari, Iyotsnawaghmare (2015). A review on latest trends of cosmeceutics cosmeceuticals, 45-51.
- [60] Narule, O. V., Kengar, M. D., Mulik, P. P., Nadaf, S. I., Mote, B. A., & Dudhagaonkar, T. D. (2019). Formulation and evaluation of Poly Herbal Hair oil. *Research Journal of Topical and Cosmetic Sciences*, 10(1), 9. <https://doi.org/10.5958/2321-5844.2019.00003.7>.
- [61] Nadkarni KM. (2004). *Indian materia medica: With ayurvedic, unani-tibbi, siddha, allopathic, homeopathic, naturopathic and home remedies, appendices and indexes*. Ramdas Bhatkal, Popular Prakashan Private Ltd, 2, 1976.
- [62] Omkar V.Narule, Manohar D. Kengar, Pranali P. Mulik, Soheli I. Nadaf, Bhagyashree A. Mote, D. dudhagaonkar, Formulation and Evaluation of PolyHerbal Oil. *Research J. Topical and Cosmetic Sci.* 10(1):09-12. doi: 10.5958/2321-5844.2019.00003.7
- [63] Pradeepa T, Kumar MA, Murali A. A Pharmaceutical Cream. *World Journal of Pharmaceutical Research*. 2023; 12(14): 110- 121. Doi: 10.20959/wjpr202314-29261.
- [64] Pérez-Arategui, J, Cepriá, G (2014). Suitability of the voltammetry of immobilized micro particles to detect and discriminate lead compounds in micro samples of ancient black cosmetics. *Electrochim Acta*, 138, 247–255.
- [65] Pandey S, Meshya N, Viral D. (2010). Herbs play an important role in the field of cosmetics. *International Journal of Pharm Tech Research*, 2, 632-639.
- [66] Parashar Bharat, Sharma Pankaj, Kabra Atul, Sharma Pankaj (2013). Formulation and evaluation of polyherbal face cream. *International pharmaceutical sciencia*, (3) 3.
- [67] Pardhi, N., Bisen, A., & Pardhi, S. (2025). Review on formulation and evaluation of herbal soap. *World Journal of Biology Pharmacy and Health Sciences*, 21(2), 572–581. <https://doi.org/10.30574/wjbphs.2025.21.2.0202>.
- [68] Patzelt-Wenzler, R., & Ponce-Pöschl, E. (2000). Proof of efficacy of Kamillolan cream in atopic eczema. *European Journal of Medical Research*, 5(4), 171-175.
- [69] Pazyar, N., Yaghoobi, R., Bagherani, N., & Kazerouni, A. (2013). A review of applications of tea tree oil in dermatology. *International Journal of Dermatology*, 52(7), 784-790.
- [70] Palle, A. J., & KV, R. D. (2021). An overview on herbal cosmetics and cosmeceuticals. *International Journal of Pharmaceutical Sciences Review and Research*, 71(1). <https://doi.org/10.47583/ijpsrr.2021.v71i01.009>.
- [71] Ramaswamy, S., Gupta R., Gupta, J., Verma, A.K. (2021). Rhodiolarosea: A Drug of Pivotal Importance in Traditional and Modern Medicine. *Bulletin of Environment, Pharmacology and Life Sciences*. 10(3), 257-262.
- [72] Revathy, S., S. Elumalai, and Merina Benny Antony (2011). "Isolation, purification and identification of curcuminoids from turmeric (*Curcuma longa* L.) by column chromatography." *Journal of Experimental sciences*, 2(7).
- [73] Rakesh Kumar, Nishat Anjum and Y.C. Tripathi. (2015). PHYTOCHEMISTRY AND PHARMACOLOGY OF SANTALUM ALBUM L: A REVIEW. *World Journal of Pharmaceutical Research*, 4(10), 1842-1876.
- [74] Rele, A. S., & Mohile, R. B. (2003). Effect of mineral oil, sunflower oil, and coconut oil on prevention of hair damage. *Journal of Cosmetic Science*, 54(2), 175-192.
- [75] Rahathunnisa begum and Afzalunnisa begum, Preparation and Evaluation of Herbal Oil, *International Journal of Research and Analytical Reviews*, E ISSN: 2349-5318
- [76] Surjushe, A., Vasani, R., & Sable, D. (2008). Aloe vera: A short review. *Indian Journal of Dermatology*, 53(4), 163. <https://doi.org/10.4103/0019-5154.44785>.
- [77] Saha R. (2012). Cosmeceuticals and Herbal drugs: practical uses. *International journal of pharmaceutical Research and Sciences*, 3, 59-65.
- [78] Sharma HD, Paramesh R, (2010). Trends in aging and skin care: Ayurvedic concepts. *Journal of Ayurveda and Integrative Medicine*, 1, 110-113.
- [79] Shakya, S., Yadav, A., & Verma, A.K. (2025). Role of Micro and Nano-formulations in Cosmetics. 10.2174/9798898810726125010005.
- [80] Sarath Chandra prakash NK, Mahendra C, Prashanth SJ, et al (2013). Emulsions and emulsifiers. *The Asian Journal of Experimental Chemistry*, 8(1&2):30-45.

- [81] Swetha M, Iswariya VT, Maryswarnalatha K, et al (2022). Review Article on Preparation and Evaluation of Herbal Face Cream. *Annals of Forest Research*, 65(1), 10315-10323.
- [82] Shailesh, R., Kiran, T., Ps, D., & S d, K. (2025). A research paper on formulation and evaluation of herbal mouthwash. *Journal of Pharmacognosy and Phytochemistry*, 14(2), 583-589 <https://doi.org/10.22271/phyto.2025.v14.i2g.15335>.
- [83] Souza ACA, Sobhy S (2023). Phytochemical characterization and antifungal efficacy of camphor (*Cinnamomum camphora*) extracts. *Molecules*, 28(4), 1527.
- [84] Sar, R. I. S. P. M. K. a. B. S. B. M. R. S. (2025). The role of herbal formulations in the cosmetic industry: market trends and consumer behavior. Zenodo (CERN European Organization for Nuclear Research). <https://doi.org/10.5281/zenodo.15719850>.
- [85] Singh, J., Bharat, E., & Sao, A. (2024). Formulation and assessment of polyherbal body lotion infused with indigenous medicinal plants extracts. *Middle East Journal of Applied Science & Technology*, 7(3), 88–97. <https://doi.org/10.46431/MEJAST.2024.7309>
- [86] Sharma, K., Bhukele, D., Patil, K., & Pingle, A. (2025). Formulation and evaluation of herbal foaming face wash. *Journal of Pharmacognosy and Phytochemistry*, 14(3), 1–8. <https://doi.org/10.22271/phyto.2025.v14.i3a.15339>
- [87] Tiwari, R., Tiwari, G., Yadav, A., & Ramachandran, V. (2021). Development and Evaluation of Herbal Hair Serum: A traditional way to Improve Hair Quality. *The Open Dermatology Journal*, 15(1), 52- 58. <https://doi.org/10.2174/187437220211501>.
- [88] Tiwari, S.B., Singh, S.D., Verma, A.K., Awasthi, D., Rastogi, A.K. 2021. History of Ayurvedic System of Medicines: From Prehistoric to Present. *Journal of Drug Delivery and Therapeutics*. 11(1-s), 1-3.
- [89] Vaughn, A.; Branum, A.; Sivamani, R (2016). Effects of turmeric (*Curcuma longa*) on skin health: A systematic review of the clinical evidence. *Phytother. Res*, 30, 1243–1264.
- [90] Verma, A.; Shakya, S. (2025). Potential Terpenes of Therapeutic oils as Fragrance Oils as Therapeutics: Chemistry and Pharmacology. *Journal of Applied Bioanalysis*. 11(14), 680-701.
- [91] Verma, A.; Asif, D.; Shakya, S. (2026). Exploring the Antidepressant Properties of Essential Oils: A Natural Approach to Mental Well Being. *International Journal of Drug Delivery Technology*. 16(5s), 561-578
- [92] Verma A.K., Gupta, P., Mishra, P., Kumari, S., Shakya, S. 2025. Evaluation of Antifungal Activity of Pure versus Nano-Encapsulated Essential oils against *Candida albicans*. *Journal of Chemical Health Risks*, 15(6), 3532-3539.
- [93] Verma, A.; Ramasamy, S.; Sharma, K.; Mishra, P.; Gupta, R.; Gupta, J. (2022). Practising Telemedicines in India. *Research Journal of Pharmacy and Technology*. 15(12):5909-5918
- [94] Vishal Kumar, Krati, Dr. Esha Vatsa, 3Abhishek Bhardwaj, Dr. Amandeep Singh (2025). COMPREHENSIVE REVIEW ON NEEM (*AZADIRACHTA INDICA*). *World Journal of Pharmaceutical Science and Research*, 4(3), 1133-1144.
- [95] Vijaylakshmi P, Radha R. (2015). An overview: *Citrus maxima*. *The Journal of Phytopharmacology*, 4(5), 263-7.
- [96] Vijayalakshmi, A. (2018). Formulation and evaluation of herbal shampoo. *Asian Journal of Pharmaceutical and Clinical Research*, 11(Special Issue 4). <https://doi.org/10.22159/ajpcr.2018.v11s4.31713>
- [97] Vora, L. K., Gholap, A. D., Hatvate, N. T., Naren, P., Khan, S., Chavda, V. P., Balar, P. C., Gandhi, J., & Khatri, D. K. (2024). Essential oils for clinical aromatherapy: A comprehensive review. *Journal of Ethnopharmacology*, 330, 118180. <https://doi.org/10.1016/j.jep.2024.1181>
- [98] Wang, K.H.; Lin, R.D.; Hsu, F.L.; Huang, Y.H.; Chang, H.C.; Huang, C.Y.; Lee, M.H (2006). Cosmetic application of selected traditional Chinese herbal medicines. *J. Ethnopharmacol.*, 106, 353–359.
- [99] Wendrich, W., Dieleman, J., Froom, E., Baines, J., Eds (2009). Manniche, L. Perfume. In *UCLA Encyclopedia of Egyptology*; California Digital Library, University of California: Los Angeles, CA, USA, 1, 1–7.
- [100] Waghmare, V. A., Bekate, P. S., & Deshmukh, S. P. (2025). Formulation and evaluation of herbal facewash containing coffee powder. *Indo American Journal of Pharmaceutical Sciences*, 12(6). <https://doi.org/10.5281/zenodo.15599128>