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Study on the Herbal Active Ingredients Found in Cosmetic Products for the Skin

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Abstract - The pursuit of physical attractiveness is deeply ingrained in the human psyche. As a result, a wide range of cosmetics have been utilised in order to appear alluring and youthful. When it comes to the cosmetics industry, herbal components are extremely popular all over the world. On the global market, there is a growing demand for herbal cosmetics, which are a gift from nature that cannot be overvalued. The formulation of herbal skin cosmetics involves the use of a variety of herbal active components, which are then combined into the cosmetic base in order to nourish the skin and treat a variety of skin conditions. When compared to cosmetics that are based on chemicals, herbal cosmetics are natural and have been demonstrated to be risk-free to use. Herbal formulations have, and always will continue to garner a significant amount of interest due to the fact that they do not contain any of the potentially hazardous synthetic compounds that, if used alone, might be damaging to the skin. Antioxidants, vitamins, essential oils, tannins, alkaloids, dyes, carbohydrates, and terpenoids are examples of the bioactive substances that may be extracted from plants. These ingredients are utilised in cosmetics to take care of the skin, as well as other regions of the body. Herbal cream, face washes, lip balms, herbal conditioners, herbal soap, and herbal shampoo are some examples of the types of herbal cosmetics that are utilised on a regular basis. Herbal cosmetics feature beneficial physiological activities such as smoothing appearance, healing, enhancing, and conditioning capabilities because they are formulated with herbal elements. The cosmetics business has shifted its attention to this rapidly developing sector since it offers a tremendous opportunity for exponential growth in the years to come. In this review, a wide variety of herbal active components that are utilised specifically for topical application on the skin are dissected in extensive detail.

Keywords - Herbal formulations, Antioxidants, Exponential Growth, Herbal Skin Cosmetics.

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INTRODUCTION

The term "cosmetics" refers to products that can be used to clean, nurture, and moisturise the skin of the face as well as other parts of the body. These products can be derived from a variety of different sources and technical processes. They come in a variety of forms and can be applied to the skin in a variety of ways to treat skin disorders, correct skin flaws, and make the skin more beautiful [1]. The origin of the word "cosmetic" can be traced back to the Greek phrase "kosmtikos," which translates to "having the ability to influence, organise, and decorate" [2]. Cosmetics are useful goods that are widely used all over the world to maintain and improve the general appearance of the face and other body parts such as the hand, mouth, finger, hair, lip, and eye. Cosmetics are available in a wide variety of formulations, such as creams, face packs, lotions, powders, shampoos, conditioners, and hair oils. Radiant, smooth, and nourished skin and hair are definitely factors that contribute to a good-looking lady or man. Despite this, cosmetics often contain a wide variety of chemical toxins, chemicals, hazardous waste, chemical dyes, and products created from these substances, all of which have the potential to adversely affect human health and lead to a wide variety of disorders. As a result, the allopathic system is insufficient for achieving the desired health benefits, and one should instead consider using herbal cosmetics. Herbal cosmetics are becoming increasingly popular in modern times as an effective solution to the ongoing problems [3]. Herbal cosmetics are any composition that incorporates phytochemicals from a variety of botanical sources. These phytochemicals have an effect on the activities of the skin and allocate nutrients that are good for the healthy and radiant appearance of the skin or hair. These phytochemicals derived from a variety of sources serve two purposes: I they can be used as a cosmetic product for the purpose of skincare, and (ii) the botanical components that impart biological activity to the skin and supply nutrients that are beneficial for the nourished skin or hair [3]. Because herbal cosmetics tend to have less negative side effects than their conventionally produced counterparts, there is a fast growing demand for these products. The fact that herbs and shrubs are used in the production of herbal

cosmetics makes them a desirable product. Natural components found in herbs do not have any unintended or adverse effects on the skin of the human body, but rather they provide the skin with sustenance and other beneficial nutrients [4].

The many benefits that herbal cosmetics have over their more traditional or synthetic counterparts

Eco-friendly: Conventional cosmetics and beauty products typically make use of components derived from petroleum and typically depend on a large number of different chemicals for their construction. These goods are typically abrasive substances like lead, aluminium, or petroleum, and each of these materials calls for a significant amount of mining. In point of fact, antiperspirants and hair dyes, two of the most popular types of cosmetic products, contain a significant amount of aluminium, which has been linked to the development of Alzheimer's disease and breast cancer. Despite this, large swathes of the rainforests in South America have been destroyed as a direct result of aluminium mining. One of the most effective ways to protect oneself from the effects of exposure to this substance is to use antiperspirants that do not contain aluminium [5].

Lack of harmful substances and chemicals: Conventional cosmetics may be effective for temporarily improving an individual's external appearance; however, some of the chemicals used in conventional cosmetics frequently cause individuals to experience adverse effects such as allergic reactions and inflammation. In addition, several of the chemicals that are utilised in the production of traditional cosmetics have the potential to be toxic to the posterior pituitary gland (endocrine system). Both phthalates and parabens are widely used in traditional cosmetics, despite the fact that both of these chemicals have been linked to an increased risk of developing type II diabetes and cancer [5].

Rich in nutritional value: The surface of our skin has the ability to absorb certain chemicals and substances. On the other hand, the stratum corneum, which is the topmost layer of the epidermis and acts as a protective barrier, is able to prevent harmful substances from penetrating the skin to a certain extent. Despite the fact that research has found that cosmetic items or any skincare products, when applied directly to the skin (known as topical application), can be harmful to the skin as well as other systems in the human body and create major health dangers. Cocoa butter is a potent organic moisturiser that also provides the skin with the critical fatty acids that it needs to stay hydrated and healthy. Skin that is healthy and smooth can be achieved by using herbal cosmetics, most commonly liquid foundation, that are made of cocoa butter or other comparable components. Grapes, apricots, green tea, and pomegranate seeds all have extracts that have antioxidant properties, and these extracts may be able to inhibit the enzymes elastase and collagenase, which are responsible for the destruction of the skin's elasticity and structural integrity [5].

Fit budget: When compared to conventional products, herbal cosmetics have a moderate effect while being significantly less expensive. According to estimates provided by the World Health Organization (WHO), approximately eighty percent of the world's population relies on herbal products for their health care. This is due to the adverse effects and higher cost associated with manufactured products. The World Health Organization (WHO) currently recommends and proposes the utilisation of natural products on a greater scale. This is due to the fact that the accessibility and more secure utilisation of herbal cosmetics comes at a lower cost. For this reason, the World Health Organization is organising various medicinal services projects to benefit such products at lower costs while also increasing their respect and safety [6].

Protection against reaching maturity too quickly: A clearer indication of sun protection is typically provided by a cosmetic that is made out of natural minerals. The skin that covers the face is typically thinner, making it significantly more vulnerable to the effects of ultraviolet (UV) rays and the natural ageing process of the skin. In this way, selecting makeup that is rich in minerals and supplements may give the appearance of skin that is more supple, robust, and lively [3]. Significantly contributing to the premature ageing of the skin [7-9] is sun exposure. It is possible to find sufficient quantities of plants and the bioactive concentrates of those plants that have the potential to improve the conditions of the skin and hair. Herbal cosmetics can be formulated in a variety of ways, and one way to do so is to make use of natural ingredients and the bioactivity of those ingredients. Herbal cosmetics are well-known for their anti-oxidant properties and their ability to defend the skin against a variety of conditions, including acne, rashes, dermatitis, scabies, warts, and other problems [3]. There are a wide variety of herbs and spices, many of which include active chemicals and compounds that contribute to the protection of the skin [10].

HERBAL COMPONENTS POSSESSING VARIOUS BENEFITS

The following is a list of many plant components along with the excipient benefits they offer when added in various cosmetic formulations:

Anti-aging treatment: There are two different sorts of alterations that take place in the skin. The term "chronological maturing" refers to the process through which the skin undergoes change only as a result of the passage of time. The other alterations that occur as a direct result of continuous exposure to sunlight are referred to as photoaging. The dermal-epidermal junction becomes flatter as the skin matures, which is the most noticeable and

reproducible biological aspect of the maturing skin. The general breakdown of the extracellular matrix is reflected by a decrease in the number of fibroblasts as well as in levels of collagen and elastin (ECM). UV rays serve as a catalyst for the production of reactive oxygen species (ROS), which has been linked to the process of photoaging [11]. The levels of type I collagen, which is the most important part of the collagen found in the dermis of the skin, decrease as a natural part of the ageing process, which is the primary indicator of skin ageing. It is well known that type I collagen has a vital function in maintaining the structure of the dermis of the skin and is the primary component of the extracellular matrix [2]. The ratio of collagen that is degraded to that which is synthesised is one of the two primary factors that determines the total amount of extracellular collagen and its characteristic makeup. Sources of distinctive phytochemicals have been shown to be beneficial in delaying the signs of ageing and wrinkle formation on the skin. Extracts that are high in phytochemicals including phenolic acids, saponins, alkaloids, and flavonoids have the ability to stimulate collagen formation and are widely used in the development of anti-aging topical cosmetics [7-9].

Ginseng: Ginseng has been shown to have anti-aging effects, hence it is often included in facial creams. Due to ginseng's potential to boost skin-firming collagen, a few therapeutic studies have proved its usefulness in preventing wrinkles [12]. [Citation needed] [Citation needed] Skin ageing is caused by a combination of factors, including the inhibition of UV-induced apoptosis and an increase in the level of production of type I collagen. Ginsenoside Rb1 has anti-aging properties and helps skin look younger, which are both advantages [13]. The herb can also be used as a skin lightning component, which means that it can give the skin the appearance of being more vivid and younger [12]. It is generally agreed that the extract of red ginseng has antioxidant, anti-aging, and immunostimulatory qualities. This is the first controlled study of red ginseng extract performed on a human to explore the effects of the extract on photoaged skin, also known as skin that has been damaged as a result of exposure to sunlight. Before and after a prolonged duration of treatment with a mixture of red ginseng extract and other herbs [14] was administered to the facial skin of healthy senior volunteers over the age of 40 years, the results of the test were analysed.

Rosemary: Rosemary is one of the key ingredients in anti-aging products that can be beneficial to human skin in a number of different ways. The use of rosemary maintains the nourished content of the skin, which, in turn, keeps the skin firm and, as a result, inhibits the appearance of fine lines on the facial skin. Rosemary is beneficial for a number of reasons, including its ability to protect the skin from environmental factors and its role in the maintenance of the skin's collagen. Including rosemary as one of the fundamental components in your healthy skin routine can help you achieve skin that is robust and smooth [10].

Carrot: The Daucuscarota plant, which is a member of the Apiaceae family, is the source of the aromatic herb known as carrot. Carotene is the primary component of carrots, and research has shown that carotene may be transformed into vitamin A when applied to the skin. This is because the skin already has the molecules and elements that are necessary for this transformation to take place. Applying vitamin A topically helps to maintain good skin conditions, promotes the normal metabolism of skin, and improves healing and roughness, which collectively has the effect of reducing the effects of skin ageing. On mature skin, vitamin A has a number of impacts,

Herbal antioxidants: Oxidative stress is one of the key factors that contribute to dermatological disorders and the ageing of the skin. It is well knowledge that the sun's ultraviolet (UV) rays are one of the most damaging external factors to the skin. The consistent exposure to environmental pollution causes changes in the connective tissue as a result of the production of ROS lipid peroxides and, in addition, chemical enzymes; these changes are what cause a variety of skin problems. Antioxidants are substances that inhibit the production of free radicals. These free radical scavengers are responsible for the human body's immunity and are responsible for inhibiting a number of oxidative chain processes. ROS produced exogenously react with a variety of biomolecules already present in the skin, which is a significant factor in the development of skin problems. In this way, the topical use of an oxidation inhibitory drug offers an effective method to improve the endogenous cutaneous framework, which in turn leads to a reduction in the UV-radiation-interceded oxidative damage and helps protect against diseases caused by oxidative stress. Antioxidants, also known as oxidation inhibitory compounds, are found in nature and stop the production of free radicals. In addition, antioxidants can stop the beginning of an oxidative chain reaction and prevent its further progression by stopping the proliferation of reactive species. As a result, antioxidants are able to both prevent and repair the oxidative damage that is caused when the cells of the body are activated by oxygen [19,20].

Anthocyanins: Anthocyanins are naturally occurring pigments that are water-soluble and can be extracted from plants and vegetables [21]. They have been shown to suppress oxidation in a variety of different ways [22].

According to the findings of a study conducted in Japan, the cyanidins that are contained inside the anthocyanins play an essential part in the antioxidant activity. The effect of cyanidins to protect the lipids of the cell membrane from oxidation was demonstrated by another study, and this action was shown to be inhibited by cyanidins. Additionally, it was found that cyanidin possesses an oxidation inhibitory capability that is four times more strong than Vitamin E [23]. Anthocyanins extracted from black raspberries have been shown to have an action that is inhibitory

against the development and progression of tumour cells. These slow down the progression of premalignant cells by increasing the rate of cell turnover, having an effect on the infected cells that causes them to die, and by reducing the amount of provocative mediators that start the process of tumour development [23].

Proanthocyanidin: Proanthocyanidin, also known as oligomericproanthocyanidins (OPC), acts as an inhibitor of the transformation of deoxyribonucleic acid (DNA). In addition to this, proanthocyanid in inhibits the activity of the enzyme elastase, ensuring that the elastin in the skin continues to be resilient and firm. OPC are able to protect and invigorate vitamins C and E through a process known as synergistic activity. The topical application of a cream containing proanthocyanidin has been shown to have a powerful effect against the damaging effects of the sun's rays (UV radiations). The administration of OPC cream before to sun exposure resulted in a significantly reduced degree of burning sensation [22]. The breakdown of collagen filaments and glycosaminoglycans, which is accompanied by a gradual thinning of the skin, is the primary transformation that occurs as a result of the skin getting older. The synthesis of collagen fibre was triggered in the rat when antioxidants and OPC were applied to the animal's skin via the transdermal route. In addition, OPC has been shown to increase the level of collagen synthesis in cell societies consisting of fibroblasts [23]. Grape seed proanthocyanidins, often known as GSP, are powerful oxidation inhibitors and can eliminate harmful free radicals. When mice were subjected to UV radiation, which can cause skin cancer, GSP prevented the growth of skin tumours and reduced the size of existing skin tumours [22].

Carotenoids: The topical application of this antioxidant helps protect the skin from being damaged by the sun. Only the natural components of vitamin E, tocotrienol and alpha-tocopherol, have been shown to successfully reduce the roughness of the skin when administered topically. In addition to this, it lessens the appearance of both the depth and the breadth of facial lines and wrinkles. The water-restriction limit of the stratum corneum (the outermost layer of the epidermis) can be increased when vitamin E is applied topically to the skin. This results in improved hydration of the stratum corneum. Alpha-tocopherol or Vitamin E decreases the detrimental collagen-destructive enzyme collagenase. Level of this enzyme increases enhanced in aged skin. Vitamin E is an emollient and free radical scavenger as well. Wheat germ oil, also known as Triticumvulgare, is an excellent source of antioxidants and a high source of vitamin E. It is often included in topical anti-aging products or formulations because of these properties. In addition to this, it helps prevent the loss of moisture from the skin while also moisturising it. Tocopherols are found in abundance in hazelnut oil (Corylusavellana), just as they are in sunflower oil (Helianthus annuus) and sesame oil (Sesamumindicum). The oil extracted from pumpkin (Cucurbitapepo) seeds deserves more widespread recognition. In addition to having a lipid profile that is characterised by high levels of linoleic acid (43–53%), it possesses two distinct classes of antioxidant agents [22].

Retinol: One of the most important components of anti-aging formulas is a compound called retinol. The ability of retinol to speed up the skin's natural renewal process is absolutely necessary for enhancing the skin's overall appearance. Retinol is thought to contribute to the regeneration of the skin by hastening the rate at which cells are replaced. Additionally, it helps to improve the appearance of facial lines. Strong antioxidant activity can be demonstrated by topical application of products containing retinol (for example, retinol skin lotion), which helps to eliminate free radicals that are present in the surrounding environment [24].

Sunscreens made of herbs and other forms of photoprotection

The production of melanin, which absorbs potentially damaging ultraviolet radiation and, as a result, protects skin cells from the damaging effects of UV rays, is the primary mechanism by which the body defends itself against the effects of sunlight. There are certain circumstances in which the quantity of melanin produced is insufficient to adequately protect or defend the skin [25]. This novel category of components, in contrast to the synthetic sunscreen components now on the market, which either absorb or block UV radiations, intends to provide protection against the damage that UV rays can cause on the cellular level [26]. Sun screen products contain sun blocking compounds that can retain or reflect UV photons on the surface of skin, so protecting the skin from the damaging effects of UV radiation [25]. Sun blocking agents can also prevent UV rays from penetrating deeper into the skin.

Silymarin: The seeds of the milk thistle plant are where silymarin can be derived (Silybummarianum). Flavonoids are compounds that contain flavonolignans, which stop the generation of superoxide radicals. This substance is called a flavonoid. The properties of silymarin that are beneficial to the skin include antioxidant, protection from UV damage, anti-acne, anti-inflammatory, lightning, and brightness. Silymarin also cures hyperpigmentation. Silymarin has powerful antioxidant properties because it can neutralise free radicals, which are unstable molecules that can cause harm to cells when they are exposed to pollutants. It has been proven that silymarin possesses an antioxidant effect that is ten times more powerful than that of vitamin E. Since the flavonolignans in silymarin, and particularly silibinin, have a high capacity for penetrating the skin, silymarin can be an excellent option for use in topical skin care formulations. According to a number of studies, silymarin is quite effective at warding off the

harmful effects of UV rays and preventing skin cancer. Statistics compiled from a number of studies have led researchers to the conclusion that it is effective for lowering melasma and rosacea, both of which are skin disorders that present themselves on the face. Silidianin, silybin, and silicristin are the three phytochemicals that are contained inside silymarin [22]. The findings of a recent study conducted by Palack University indicated that topical application of silymarin was beneficial in the protection of oxidative stress caused by exposure to UVA light. CD11b cells are responsible for a considerable proportion of the problems that are created by the introduction of UVB, according to the findings of another study that was conducted in 2008 and focused on the reasons why UV rays generated stress. The harmful effects of UV radiation were significantly mitigated when a topical treatment of silymarinwas applied either before or after exposure to the light .

Ascorbic acid (Vitamin C): L-ascorbic acid, more often known as vitamin C, is the most important extracellular and intracellular aqueous phase oxidation inhibitor agent in the human body. Ascorbic acid provides the skin with a variety of benefits, the two most essential of which are an increase in photoprotection and an increase in the production of collagen. The antioxidant and anti-inflammatory properties of ascorbic acid contribute to increased photoprotection. The skin is able to recover from earlier photodamage when photoprotection is used; collagen synthesis and MMP-1 suppression have both been shown to reduce the appearance of facial wrinkles. The tyrosinase-inhibiting and anti-inflammatory properties of this compound are responsible for the depigmenting of sun spots [22]. Vitamin C is the primary component that can give photoprotection on its own; however, it works synergistically with Vitamin E (Vitamin E), which can increase the action of Vitamin C by a factor of up to four. Vitamin C, which is water-soluble and hydrophilic, plays a role in the regeneration of vitamin E, which is fat-soluble and lipophilic and acts as an antioxidant (antioxidant). As a result, the lipophilic section of the cell and the hydrophilic half of the cell are both protected by the combination of vitamin E and vitamin C. Vitamins E and C work together to minimise the detrimental effects of ultraviolet (UV) light by considerably lowering the rate at which cells undergo apoptosis and by preventing the production of thymine dimer .

Walnut: Extract of walnut is prepared using the fresh green shells of English walnut, Juglans Reggie. Walnut aqueous concentrate has been proven to be particularly useful as a sun blocker and self-tanner, according to research conducted on the topic. It mostly comprises naphthol, juglone. It is well known that juglone can produce sclerojuglonic chemicals by reacting with the keratin proteins that are already present in the skin. These activities offer protection from the sun's ultraviolet rays . Walnut oil has anti-wrinkle properties that make it an excellent choice for mature skin. Walnut oil applied topically on a consistent basis can reduce the appearance of fine lines and wrinkles on the skin, allowing them to become less noticeable with time .

Apigenin: The herb known as apigenin can be found all over the world. Apigenin was found to be effective in protecting SKH-1 mice against UVA or UVB rays-induced skin carcinogenesis . This was seen in the laboratory. Apigenin performs a variety of activities, including those of an antioxidant, an anti-inflammatory, a lightning agent, an anti-irritant, and a lightening agent. Additionally, it possesses antibacterial characteristics. It is found in a wide array of cosmetics and skincare items.

Herbal components for the purpose of protecting the skin

Several activities related to skincare can be achieved through the exploitation of a wide variety of bioactive herbs and phytochemicals that are derived from a variety of biological sources: Healthy skin requires proper care of the body's skin as well as the consumption of supplements, which serve as an essential component in affecting the skin's biological function. The essential oils, vitamins, proteins, antioxidants, terpenoids, and other active components can be found in abundant supply in these plant-based compounds. Based on the characteristics of the extracts themselves, the activities associated with their various compositions can vary greatly. Because of their exceptional capacity to mop up harmful free radicals, there has been an extraordinary rise in the production of phenolic oxidation inhibitor agents in the most recent decade. Protecting the skin can be accomplished with the use of herbal substances that are high in phenolic content [20]. The oxidation inhibiting activity provided by phenolics and tocopherols accounts for 59% of the total. It is taken in both the ways either orally or topically for therapeutic benefit and is particularly valued in the traditions of Central and Eastern Europe and the Middle East for its beneficial effects on one's health. In addition, it is utilised in both ways. Because of its potency and rich odour, it is merely utilised in tiny extents in topical applications. Mineral oil has the ability to dissolve the sebum that is secreted by oil glands, which aids in the protection of the skin as well as the evaporation of the skin. Herbal excipients are particularly incorporated as an essential ingredient in skincare cosmetics due to the fact that they contain a number of desired features, such as anti-inflammatory, antioxidant, antibacterial, and antiseptic capabilities. The natural components, in their entirety or in part, have been exploited for the treatment of a variety of skin conditions .

Borage oil: Boragoofficinalis is the plant that is used to extract borage oil. This oil stimulates the activity of skin cells and promotes the regeneration of skin tissue. Because it has a high concentration of gamma-linoleic acid (GLA), borage oil can be effective in treating a variety of skin conditions,

including hypersensitivities, dermatitis, irritation, and inflammation. Borage oil has the ability to effectively permeate the skin and is beneficial for a wide variety of skin types, but it is particularly useful for dry, mature, dehydrated, or prematurely ageing skin [22].

Evening primrose oil: Evening primrose oil is obtained from the Oenotherabiennis. The most common hue for it is yellow. This oil contains a significant amount of GLA, which promotes healthy skin and the restoration of damaged skin cells. Because it reduces skin problems and irritation, it is an excellent choice for people who have skin inflammation, psoriasis, or any sort of dermatitis. Primrose oil helps to prevent dry skin as well as the premature maturation of the skin .

Avocado oil: Avocados are also known by their scientific name, Persea Americana. The addition of avocado oil to formulations confers a number of significant benefits. These herbal excipients, which range from avocado oil to botanicals like comfrey and rosemary, soothe and protect the skin .

The oil of tea tree: Melaleucaalternifolia is the plant from which tea tree oil is extracted. This oil is a traditional medicine used by the native people .. It is made up of powerful antifungal and antibacterial components that are well-known for their ability to reduce irritation, which is a factor that can lead to skin inflammation. In addition to that, it has powerful disinfectant and antiseptic properties. It is a vital component in a wide variety of sunscreen preparations, which help prevent sunburn by increasing blood flow in vessels and delivering nutrients to sun-damaged skin. [Sunscreen] According to the findings of a study conducted by the Skin Disease and Leishmaniasis Research Center, tea tree oil is an effective treatment for acne and skin inflammation that is mild to moderate in severity. Tea tree oil is also a widely used component in many different types of cosmetic remover .

Krameriatriandra: There is significant potential for photoprotection and antioxidant activity in the root extracts of K. triandra. Itsantioxidative and photoprotective action has been evaluated in a variety of cell models, including human keratinocyte cell lines and rat erythrocytes. These cell models were subjected to chemical and physical stressors (UVB radiation). Root extracts of K. triandra significantly and in a dose-dependent manner prevented the decrease in the viability of the cell and the intracellular damage caused by oxidative stress. The cytoprotective effects of root extract were also shown in a more severe model of cell damage, which involved the exposure of keratinocytes to greater UVB dosages, which cause a 50% reduction in cell number. Keratinocyte culture, and doing so more successfully than with green tea and (-) epigallocatechin-3-gallate (EGCG). The findings of this study indicate that Rhatany extract, which has been standardised to contain neolignans, has the potential to be utilised as a topical radical scavenger and antioxidant against photodamage to the skin .

Allantoin: Allantoin is also known as Aldioxia. Because of its antibacterial and anti-inflammatory properties, it finds particular application in medical settings. Allantoin is well-known for its ability to hasten the turnover of cells and the production of skin cells by preventing tissue necrosis, hence expediting the overall process of skin healing. Most commonly, allantoin is utilised for its wound-healing properties, particularly in the treatment of rosacea and acne . This excipient has the ability to soothe the skin without causing it to become irritated. Allantoin's ability to stimulate the body's natural renewal process makes it an effective treatment for acne and contributes to the development of a more consistent skin tone. Allantoin enables the skin to retain its natural moisture content, and the compound also encourages the skin to shed dead skin cells and generate new ones, both of which contribute to the skin's healthy development and prevent it from appearing pale or dull. When treating skin that is sensitive, dry, or layered, using products that include allantoin may be beneficial since it can nourish, protect, and heal the skin without causing any additional undesirable side effects.

Table 1: Marketed products of herbal skin cosmetics

Products	Active ingredient	Ingredients
Deep cleansing apricot face wash (Himalaya)	Apricot	Apricot, *Aloe vera*, Neem, Red lentin
Fairness kesar face wash (Himalaya)	Kesar	Kesar, cucumber, pomegranate, mint
Tea tree face wash (Ayur)	Tea Tree	Tea tree oil, citric acid, turmeric
Lemon honey face wash (Patanjali)	Lemon, honey	Lemon, honey, Tulsi
Purifying neem scrub (Himalaya)	Neem	Neem, apricot
Aloe vera moisturizing cream (Patanjali)	*Aloe vera*	*Aloe vera*, Shea butter, coconut oil, wheat germ oil
Nourishing skin cream (Himalaya)	*Aloe vera*	*Aloe vera*, Indian kino tree, winter cherry, Indian pennywort
Herbal moisturizer (Ayur)	Wheat germ oil	Olive oil, turmeric extract, wheat germ oil
Purifying neem pack (Himalaya)	Neem	Neem, tumeric, Fuller's Earth
Apricot and honey peel off mask (Ayur)	Apricot, honey	Apricot, honey

FUTURE PROSPECTS

In addition, the use of nanoformulations in skincare cosmetics can improve the efficacy of herbal skin cosmetics, making them more competitive in the market. Researchers have discovered that nano liposomes, niosomes, and other similar particles have a higher affinity for the skin, increased penetration, and stability of herbal components. In the not too distant future, herbal cosmetics also have a lot of potential for being improved by nanotechnology-based cosmetic preparations.

CONCLUSION

In the most recent couple of years, an abundance of evidence has accumulated demonstrating that chemically distinct classes of naturally occurring substances are effective in the treatment of a variety of dermatological conditions caused by exposure to UV radiation. These conditions include psoriasis and eczema. Chemical families such as flavonoids, terpenes, polyphenols, alkaloids, and catechins have been the subject of research for their potential photochemopreventive properties. Resveratrol, curcumin, quercetin, and caffeic acid are a few examples of substances that fall into this category.

These antioxidants have been recommended as a good technique for minimising the oxidative injury that is caused to the skin as a result of UV radiation's intervention. For example, it is hypothesised that the topical application or oral administration of plant concentrates, such as black and green tea, aloe vera, coffee, apricots, coconut oil, cucumbers, and quercetin, may be protective against premature ageing, UV-initiated erythema, and radiation-prompted tumours. Over the course of more than a thousand years, herbal cosmeceuticals derived from plants and their extracts, by-products, and products have been effectively used in Sri Lanka to treat a wide variety of illnesses. There are over 1400 plants that are used in the traditional medicine of Sri Lanka, and a review of the relevant literature reveals that a large number of these plants are extensively used for the treatment of a variety of skin conditions, as well as for the purpose of improving or lightening the complexion of the skin . Despite the fact that their actual impacts have not been logically proved, these herbal excipients appear to be encouraging, advantageous, and free from side effects. As a result, facilitate examinations ought to be performed in order to evaluate the clinical benefits. On the other hand, there is a large quantity of available logical confirmations on bioactivity investigations of plants having therapeutic worth that could lead to the production of herbal cosmetics. According to the findings of the study, both green and black tea have characteristics that protect against sun damage. The purpose of this study was to evaluate the antioxidant and sun protection capabilities of eleven medicinal plants that have a long history of usage in Sri Lanka as dermatological therapies for the treatment of a variety of skin diseases and for brightening the complexion. As a consequence of this, the use of certain herbal plants in pharmaceutical applications might be rationalised. These medicinal plants can be utilised successfully as dermatological therapeutics for the treatment of a variety of dermal conditions including eczema, psoriasis, skin inflammation, ageing, and irritation. Additionally, these plants can be utilised as principal herbal excipients in a variety of cosmeceuticals.

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