Herbs have been used in clinical medicine since thousands of years. In recent years we are able to employ scientific methods to prove the efficacy of herbs and provide its mechanisms of action. Present study is focused on the use of herbs in various dermatological conditions characterized by cosmetic activity implication such as antioxidant, antimicrobial and photo protection. Topical preparations of herbs are more common in Europe, China, Asia, Brazil, Japan and India. However, their availability is tremendous in the India. We should grow nuptials (tie-up) between alternative and traditional medicines with its cosmetic values\(^1\).

The traditional practice of topically treating dermatologic conditions with plant-derived medicines predates the cultures of ancient Egypt and remains vital today in the industrialized cultures all over word including India. Recent scientific studies put support to some of the claims of herbal formulations, which are in use for the skin disorders.

Clinical studies with its observations help to define specific indications for choice of herbal treatment in the skin disorder and for the unique characteristics of the skin i.e. cosmetic value\(^2\).
Skin health is increasingly becoming an important aspect for primary health care among many communities because of the increased challenge of HIV-AIDS, skin conditions being among the common opportunistic diseases in immuno-compromised individuals.

This study investigated the use of traditional remedies in managing various skin conditions. Earlier, the plant parts were heated and used as poultice and many times, the plant parts were boiled and the extract used for local applications.

Natural extracts, whether from animal, botanicals or mineral origin, have been used as “active ingredients” of cosmetics for long as human history can go. Oils, butter, honey, bees wax, mineral, sandal powder, lemon juice, wheat oat, turmeric and aloe were common ingredients of the beauty recipes from ancient Egypt, India and China. Many botanical extracts are used today in traditional medicines and so many cosmetic researchers rediscovering them.

The major differences between the drug and cosmetic approach rely on the intent as well as how the extracts are considered. In the cosmetic area, the botanical extract is the active ingredient. It may contain hundreds of chemical structures with proven activity. In the drug industry, it needs to determine the chemical and molecular nature of active ingredients within the extract. During purification and isolation of herbal extracts, there may be chances of loss in biological activity. Thus the herbal extracts can be more beneficial in its crude form than isolated compounds.

Herbal extracts have been used for centuries and are present in modern formulations either for their own properties or as substitutes of animal materials that may have to be removed from products. There are plant powders for many
cosmetic values of hair and skins (Heena, apricot, kernel, oat flour, turmeric) are available and well tested by users majority.

Active ingredients are not present in equal amounts in the plant, most of the time, a higher concentration can be found in certain parts. Therefore, it is usually only one part of plant that can be use e.g. fruits, bark, rhizome, leaves, buds flower etc.

Total extracts are most common in the cosmetic area, rarely, if ever, used in drugs. They are generally known from traditional usages, which have a long history. Their activity is often empirical and their active ingredients are not always identified, but their benefits are very often, without possible doubt.

Their mode of preparations can be found in traditional pharmacopoeias of China, Africa, Europe, India and America etc. or from observing shamans or traditional practitioners. Very often, plants are blended in order to better control or synergies their effects, but sometimes also to preserve the secret of the active ingredients.

Furthermore, research conducted during the last ten years on skin biology allows us to better understand the biological mechanism involved in ageing etc. Specific activities can justify the usage of these herbs in cosmetic formulations. Antioxidant plant extracts can block the free radical actions in skin or hair, these are major cause of degrading the skin structural fibers like collagen, elastin and cell membrane even nucleic acids (DNA) also by some inflammatory reactions. Vegetable oil containing tocopherol, tocotrienols and herbs containing flavones, flavonoids contribute directly to cell membrane by stabilizing it and allowing for
proper functioning of membrane enzymes. Flavonoids, rich extracts from various herbs are used for their antioxidant and anti free radical activities. Natural oils act directly on the cell membrane by increasing their fluidity. They favor the exchanges between the inner and outer compartment of the cells or between cells. In addition, they have anti-inflammatory activities, which directly protect from sunburn and works as photoprotectives.

Flavonoides like hesperidin, quercetine, anthraquinone glycosides, rubrofusarin and Liquorizin, Triterpinoids, hispaglabrin, glabridin, catechine, saponin, phytosterols sterols, salicylic acid etc. can be directly extract from herbs in total extracts form, which proves their effectiveness in skin as cosmetic with different mechanism of actions e.g. antioxidant, antiperoxidative, antiinflammatory, antihyalluronidase, anitiproleferative etc..

Here we have selected *G. glabra*, *C. longa* (roots), seeds of *P. corilifolia*, *C. tora*, *A. catechu*, *P. granatun* fruits of *E. officinale*, leaves of *C. asiatica* *A. vera*, *T. gracecum* seeds and dried bark of *C. zeylanicum*, which are being used since long time and well tested for their effectiveness.
Figure 2F-1: Roots of *Glycyrrhiza glabra*

Figure 2F-2: Leaf of *Aloe vera*

Figure 2F-3: Leaves of *Centella asiatica*

Figure 2F-4: Seeds of *Cassia tora*

Figure 2F-5: Seeds of *Punica granatum*
Figure 2F-6: Nuts of Areca catechu

Figure 2F-7: Seeds of Psorolea corylifolia

Figure 2F-8: Rhizomes of Curcuma longa

Figure 2F-9: Fruit of Embellica officinalis

Figure 2F-10: Seeds of Trigonella gracecum

Figure 2F-11: Bark of Cinnamon zeylanicum
2.1 Glycyrriza glabra

Botanical Name: Glycyrrhiza glabra (Linn.)

Family: Leguminosae

Part used: Root

Morphological characteristics

Color: Yellowish brown

Taste: Sweetish

Size and shape: Roots nearly cylindrical up to 2-3 cm in diameter. Lower part of outer layer at node site is dark brown, longitudinally wrinkled with patches of cork, coarsely fibrous.

Traditional Cosmetic Uses

In Ayurveda as charm rogya nashak in Charak Samhita described for glowing the complexion and other skin diseases.

Chemical Constituent

Glycyrrhizin, glycyrrhizin flavone, flavonoids, liquorizin, Triterpinoids, hispaglabrin, glabridin.

Modern Uses

Antipyretic, antiallergic as in dermatitis via IgE production inhibitory activity

Anti- sun burn and astringent

Marketed product

Nutrich hair oil (Aby Lab. India), Sesa Oil (Triple P.V. Hair oil Albert Lab. India)

Triple PV Hair oil, Antioxidant cream, Antioxidant Gel, Herbolax Antiwrinkle cream (Himalaya health care), Baby Cream (Himalaya Health Care)
2.2 *Aloe vera*

**Botanical Name:** *Aloe vera*

**Family:** Liliaceae

**Part used:** Leaf extract

**Morphological characteristics**

**Color:** Green

**Taste:** Sour and acrid

**Size and shape:** Leaves are sessile and have a strong spine at apex and also number of spines along the margins. The lower portion is rounded and upper portion is slightly concave.

**Traditional Cosmetic Uses**

In Ayurveda: Used in skin disease and as cooling agents\(^{14}\). Itching and burn\(^{12}\), Decoction of leaves is taken externally for the wound treatment\(^{13}\).

**Chemical Constituents**

Hydroxy anthraquinone derivatives Barbalion-9, aloin A&B, the diasterreoisomeric 10-C glucosides of aloe-emodin anthrone), Aloe emodin aloe resin B. Juice contain chrysophenic acid, while gel of plant contain saponin, sterols, salicylic acid, as minor ingredients; Vitamines A,C,E and traces of B\(_{12}\) Enzymes specially Bradykinase. Mineral like Calcium, Sodium, Potassium, Maganese, Copper, Zinc, Selinium\(^{14}\).

**Modern Uses**

In itching and burning, for Normal Pigmentation\(^{15}\), Antimicrobial\(^{16}\), Antifungal\(^{17}\), Antiseptic\(^{18}\), Cleanser\(^{19}\), Photoprotective\(^{20}\), Skin hydration improver\(^{21}\), Antileucamic, Antimutagenic and in skin psoriasis vulgaris\(^{22}\).
Marketed Product

Aloe fairness cream (Ayur Ltd), Aloe vera multipurpose gel, Aloe shampoo, Aloe hair cream Aloe face cleanser, Aloe sunscreen gel, Deep pore Cleansing Milk, Aloe Skin tonner, Aloe Cold Cream, Aloe soap(Doy care) Aroma Ltd.

2.3 Centella asiatica

Botanical Name: Centella asiatica (L.)

Family: Umbelliferae

Part used: leaves

Morphological characteristics

Color: Green dark

Taste: Aromatic and acrid

Size and shape: Creeping perennial with long internodes and rooting at nodes, leaves separately simple and many are orbicular reniform, base cordate with angular sinus, 1.5-3.0 cm in size.

Traditional Cosmetic Uses

In Ayurveda leaf used as skin healer, and tribes of Madhya Pradesh use whole plant as skin tonic in skin disease. Kumaoni tribes use leaf part decoction in eczema. Tribe of M.P. (Kangervally) uses it as brain tonic. Tribes of Rajasthan uses as skin toner and as cooling agents.

Chemical Constituent

Brahmic acid, thankunic acid, asiaticoside, madecassic acid, triterpenoids.

Modern Uses

Asiaticosides stimulate the synthesis of collagen and fibronectin. Free radical scavenging properties, collagen former, collagen activator and mediate
synthesis of collagens and elastin, control the antioxidant enzymic system, refering properties, potent wood healer, antiinfectious for both gram negative and positive, collagen improver via increases in protein level.

**Marketed products**

Type B Beautifacial, Type B Day creams, Facial mask- For facial beauty, Shampoo-Himalay, Herbal hair cleanser- Shagrow Shanaz. Ayurvedic-SESA oil.

2.4 *Cassia tora*

**Botanical Name:** *Cassia tora*

**Family:** Leguminosaeae

**Part used:** Seeds

**Morphological characteristics**

*Color:* Reddish brown

*Taste:* Acrid and bitter

*Size and shape:* Seeds flat, oval with well marked raphe, 5-6 mm in diameter and 10mm length.

**Traditional Cosmetic uses**

In Ayurveda chakramarda uses it for kustaharan. Kumaoni and garhwali uses leaf paste in cutaneous diseases. Local public of the Chattisgarh and Jharkhand uses this plant seeds as boiled aqueous extract in eczema and cutaneous disease.

**Chemical Constituent**

Anthraquinone, glycosides, glucoobtusifolin, rubrofusarin, andinoside, phenolics, Chrysophenic acid –9 anthrone and diterpens.
Modern Uses
Antifungal, antimicrobial, antioxidant, antinociceptive and hypolipidemic.

Marketed products
Shanaz herbal cream, Nourishing Moisturizer, Sharmoist (Moisturizing milk)

2.5 Punica granatum

Botanical Name: Punica granatum
Family: Punicaeaceae
Part used: Seeds

Morphological characteristics

Color: Reddish
Taste: Sweetish
Size and shape: Seeds are cylindrical and peripheral membrane is tight and full of sweet liquid. Seeds are 8-12 mm in length and 5-7 in diameter.

Traditional Cosmetic uses
In Ayurveda it is called Tridosha nashaka. Traditionally greenish pheloderm used for skin glow with Gulab jal. It also used as tonning agent with face mask product.

Chemical Constituent
Tannic acid, 9-O-[beta-D-apiofuranosyl] -O-beta-D-glucopyranoside (1) and sinapyl 9-O-[beta-D-apiofuranosyl] -O-beta-D-glucopyranoside, 3,3'-di-O-methyellagic acid, 3,3',4'-tri-O-methyellagic acid, phenethyl rutinoside, icariside D1, gallotamic acid, betanic alkaloid, punicalagin, ellagic acid, linolenic acid, D-Glucopeptides, phenolics, phytoestrogens.
Modern uses
Antioxidant, Antiperoxidative and Antiproliferative\textsuperscript{46}. U.V.B-mediated phosphorylation inhibition\textsuperscript{47}, wound healing activity\textsuperscript{48}, depigmenting agent\textsuperscript{49}. Photoprotective\textsuperscript{50}, photochernoprotective\textsuperscript{51} and antityrosinase\textsuperscript{52}. Collagen improver in aged skin\textsuperscript{53}.

Marketed Product
Foundation cream (Garnier), Acne cream (Aroma Ltd.)

2.6 \textit{Psorolea corylifolia}

Botanical Name: \textit{Psorolea corylifolia}

Family: Leguminosae

Part use: Seeds

Morphological characteristics

Color: Yellowish brown

Taste: Bitter

Size and shape: Semispherical seeds hard coat sheath membrane is tight and brittle in nature. Seeds with 6-10 mm in length and diameter

Traditional Cosmetic uses

Lepas for curring skin disease\textsuperscript{54}, Leucoderma\textsuperscript{55}, leprosy\textsuperscript{56}, and in various kustha rogya\textsuperscript{57-59}.

Chemical Constituent

Psorolen, isopsorolen Psoralidin, Corylifolin, Isopsoralidin, Stigma sterol\textsuperscript{56}.

Modern uses

Stigma sterol use to prevent melanin spot formation in dermis. It is capable of stimulating the cells by penetrating through the epidermis to lymphatic cells
and entering into the subcapillary area under the skin. Keratinocyte inhibitor. It is also powerful herb for treating lice, antigranulating agent for skin disease and dandruff and scalp itching.

**Marketed Product:**
Combination with others, Skin care cream -day-(Aroma Ltd.), Kayakaip face mask (Dabur Vatika Ltd), Anti-Acne cream (Aroma Ltd.), Moisturizer cream ACeiderma (Aomega Alpha)

**2.7 Areca catechu**

**Botanical Name:** *Areca catechu*

**Family:** Arecaceae

**Part used:** Fruit nut

**Morphological characteristics**

**Color:** Yellowish brown

**Taste:** Bitter

**Size and shape:** Semispherical seeds hard coat sheath membrane is tight and brittle in nature. Seeds with 20-30 mm in length and diameter

**Traditional Cosmetic uses**

In Ayurveda gum muscular disease, oily extracts used to treat skin disorder and for toning purposes. Garhwali used seed paste in cutaneous diseases. Local public of the Jharkhand used this plant seeds boiled aqueous extract in eczema and cutaneous disease.

**Chemical Constituent**

Alkaloids, Arecoline, Arecaidine, Guvacine, Isoguvacine, Tannic acid, Arecolidine, polyphenolics, oligosaccharides.
Modern Uses
Antimicrobial activity as vermicide\textsuperscript{63}. Antiinflammatory and antimelanogenesis\textsuperscript{64}.
Antielastase and antiaging\textsuperscript{65}.

Marketed Product
Liquid solution for cleansing and lotion (Aeomega Alpha, USA)

2.8 \textit{Curcuma longa}

\textbf{Botanical Name}: \textit{Curcuma longa}

\textbf{Family}: Zingiberaceae

\textbf{Part used}: Rhizomes.

\textbf{Morphological characteristics}

\textbf{Color}: Golden yellow

\textbf{Taste}: Acrid pungent

\textbf{Size and shape}: Thick branched with 40-60 mm in length and 10-15 mm in circular diameter with whitish bracts and pink tips.

\textbf{Traditional Cosmetic uses}

Rhizomes of plant are widely used to improve body complexion and for acne\textsuperscript{66-67}. In Ayurveda used as varn preparation for skin, In Yajurveda and sushuta samhita, it is discussed as blood purifier and fairness improver\textsuperscript{68}.

Ethanic communities of Krukshetra used the rhizomes in body pain and sun burn. Indian western (ranchi) communities used rhizomes paste or aqueous solution in pimples and freckles on the face and wound treatment.
Chemical Constituent
Curcuminoids (diaryl heptanoid colouring agent) 5%, curcumin ,
sequefrinynes (Zingiberin- 25%), A-B-curcumines, curcuma content vary from
1 to 10% as per geographic.

Modern Uses
As tumor preventive⁵⁹, as antifungal ⁷³, in scabies with A.Indica oil⁷¹, as topical
agent in cancer ⁷² , in skin preparations as anti inflammation, antifungal and
antibacterial⁷³.

Marketed Product
Face powder, Turmeric force (Soft gels), Tinted cream gel for natural Tan,
Ambre sclaie, Vatica anti-acne, Aroma Face blemish cream (Aroma Ltd),
Auromere- Ayurvedic soap -for unblesshined complexion (Dabur Vatika),
Vicco turmeric cream (Vicco Ltd.), Cynara tablets.

2.9 Embellica officinalis

Botanical Name:  Embellica officinalis
Family: Eupherbiaceae
Part used: Fruit part

Morphological characteristics
Color: Pale green
Taste: Pungent and sour
Size and shape: Circular with 15-20 mm 5-6 globes and obscure verticle
furrows.
Traditional Cosmetic uses

In Ayurveda used in all tridosha’s acid chief principle source. Ayurvedic suppilment as powerful rasayana for longevity enhancer\textsuperscript{74} Protective use from heat and light in skin disease\textsuperscript{75}.

Chemical Constituent

Amino acid alanine, aspartic acid, glutamic acid, flavone glycosides, eriodictyol, eriodictyol-6-galloyl beta D-glucopyranoside\textsuperscript{76}, norsesquiterpenoids, phenolic content, (\(-\)B) ellagitannins\textsuperscript{77}, sesquiterpines, proteins and carbohydrates.

Modern Uses

Super antioxidant activity\textsuperscript{78}, lipid peroxide lowering agent\textsuperscript{79}, as cosmetic formula with sesamum indicum oil- and glycerrhiza. Antiinflammatory\textsuperscript{80}, antiproliferative\textsuperscript{81}, antiyuluronidase and antihistaminic\textsuperscript{82}. As antiaging and sun protective agent used in sunscreen all purpose\textsuperscript{83}.

Marketed Product

Natrica Acne gel, Dermectin wrinkle reduction cream (Natura Company), Natrica detoxifying mask (Skin Care, Ltd.), Triple effect age relief cream (Skin Care, Ltd.), Vita wave (Skin Care, Ltd.), Acnenil (Skin Care, Ltd.), Amlalaki Kalp (Himgririn)
2.10 *Trigonella gracecum*

**Botanical Name:** *Trigonella gracecum*

**Family:** Leguminoseae

**Part used:** Seeds

**Morphological characteristics**

**Color:** Greenish brown

**Taste:** Aromatic bitter

**Size and shape:** Deep groves across one corner seeds with 2-3 mm in size.

**Traditional Cosmetic uses**

In Ayurvedic pharmacopoeia\(^1\), it is discussed as strengthener, seed paste as shothvigyan\(^{64}\), madhu nashak as antidiabetic\(^{65}\), hair oil and aqueous boiled extract for hair conditioning. A poultice of the leaves and seed were applied to cure skin swelling and burns.

**Chemical Constituent**

Pyridine – trigonelline, gallactomannan amino acids, diosgenin, furostanol glycoside, trigofenoside –A-G, 4-hydorxyisoleuein, fatty acids, saponine and vitamine\(^{86}\).

**Modern Uses**

Antibacterial, antidadruff and anti-inflammatory and strengthening for scalp\(^{87}\).

**Marketed Product**

Hair oil (Kesh varna) Trichup Ltd., Himalaya antidadruff Shampoo.
2.11 *Cinnamon zeylanicum*

**Botanical Name:**  *Cinnamon zeylanicum*

**Family:** Lauraceae

**Part used:** Epidermal bark

**Morphological characteristics**

**Color:** Smooth gray to light brown

**Taste:** Acriz pungent

**Size and shape:** 5mm thick and 5-12 cm long with half cylindrical bark slits.

**Traditional Cosmetic uses**

In ayurveda oil preparations are prescribed for kusthaharan\(^8\) and decoction of bark and leaves applied externally in rheumatic infections and in skin color restoring and as dentrifices, antiseptic purposes, astringent\(^89\)\(^90\).

**Chemical Constituent**

Aldehydes and benzoates are the major constitutes like eugenol, o- methyl eugenol, benzaldehyde, cinnamaldehyde, caryophyllene, benzyl benzoate, linalool, cinnamon alcohol\(^89\).

**Modern uses**

Perfuming, flavoring, antibacterial, antiseptic and used in aroma therapy and in message oils\(^90\). Antitumor activity via reducing cell proliferation activity\(^92\)\(^93\).
References


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