



**REVIEW ON: FORMULATION AND EVALUATION OF HERBAL FACE PACK**

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### ABSTRACT

Everybody wants to get a fair and charming skin. Now a day, acne, black heads, pimples are common among persons who suffer from it. According to Ayurveda, skin problems are normally due to impurity in blood. Herbal face packs are used to simulate blood circulation, rejuvenate the muscles and help to maintain the elasticity of the skin and remove dirt from skin pores. The advantage of herbal cosmetics is their non toxic nature, reduce the allergic reactions and time tested usefulness of many ingredients. Thus in the present work, an attempt has been made in formulating an ideal face pack suitable for all skin types.

**KEYWORD:** Herbal face pack, Bael, Ritha, Nutmeg, Evaluation.

### INTRODUCTION

Since from ancient period of time, people are aware of the use of plants for the healthy, glowing and beautiful skin. Cosmetics are products used to clean, beautify and promote attractive appearance.<sup>[1]</sup> Cosmetics are commercially available products that are used to improve the appearance of the skin by action of cleansing, beautifying, promoting attractiveness. From the ancient time, different herbs are used for cleaning, beautifying and to manage them. Face skin is the major part of the body, which indicates the health of an individual.<sup>[2]</sup> In ancient times women's were very conscious about their beauty and took special care of their specific skin types. Even today, people especially in rural areas and hilly regions go for the natural remedies like plant extracts for various cosmetics purposes like neem, aloe vera, orange peel, tulsi, rose...etc. everybody wants to get fair and charming skin. Nowadays, acne, black head, pimples, dark circle are common among youngsters and person who suffers from it. According to Ayurveda, skin problems are normally due to impurity in blood.<sup>[3]</sup> In Ayurveda, the herbal paste is called as 'mukha lepa' used for as a facial therapy. this herbal paste smeared on face to treat acne, pimple, scars, marks and pigments. Herbal face packs are cheaper and have no side effect for getting fair skin naturally.<sup>[4]</sup> Herbal cosmetics are the products which are used to purify and beautify the skin. The main

advantage of using herbal cosmetics is that it is pure and does not have any side effects on human body.<sup>[5]</sup> Face pack is the smooth powder which is used for facial application. These preparations are applied on the face in the form of liquid or pastes and allowed to dry and set to form film giving tightening, strengthening and cleansing effect to the skin. They, are usually left on the skin for ten to twenty-five minutes to allow all the water to evaporate, the resulting film thus contracts and hardens and can easily be removed. The warmth and tightening effect produced by application of face pack produces the stimulating sensation of a rejuvenated face, while the colloidal and adsorption clays used in these preparations remove the dirt and grease from the skin of the face. When the applied face pack is eventually removed skin debris and deposited dirt gets removed with it. Face pack is the smooth powder which is used for facial application. These preparations are applied on the face in the form of liquid or pastes and allowed to dry and set to form film giving tightening, strengthening and cleansing effect to the skin. They are usually left on the skin for ten to twenty five minutes to allow all the water to evaporate, the resulting film thus contracts and hardens and can easily be removed. The warmth and tightening effect produced by application of face pack produces the stimulating sensation of a rejuvenated face, while the colloidal and adsorption clays used in these preparations

remove the dirt and grease from the skin of the face. When the applied face pack is eventually removed skin debris and deposited dirt gets removed with it.<sup>[6]</sup> Face packs are basically additives delivering some additional benefits. Different types of herbal face packs are used for different types of skin. Herbal face packs are helps to reduce wrinkles, pimples, acne and dark circles. Also increase the fairness and smoothness of skin. It also helps someone to boost their confidence. Ayurveda is the most useful and successful means for achieving this purpose.

These packs are available in various types and forms and broadly classified into the following categories

1. Plastic masks: Wax based, latex based, or vinyl based.
2. Hydrocolloid masks: Gel masks (ready to use).
3. Argillaceous masks: Clay based or earth based (ready to use or dry powder).<sup>[7]</sup>

## MATERIAL AND METHOD

1. Cinnamon Botanical name:- *Cinnamomum verum*  
Family: - Lauraceae Genus:- *Cinnamomum*.

It is a spice obtained from the inner bark of several tree species from the genus *Cinnamomum*. Cinnamon is used mainly as an aromatic condiment and flavouring additive in a wide variety of cuisines, sweet and savoury dishes, breakfast cereals, snack foods, teas, and traditional foods.<sup>[7]</sup> The aroma and flavour of cinnamon derive from its essential oil and principal component, cinnamaldehyde, as well as numerous other constituents including eugenol. Cinnamon is the name for several species of trees and the commercial spice products that some of them produce. All are members of the genus *Cinnamomum* in the family Lauraceae. Only a few *Cinnamomum* species are grown commercially for spice. *Cinnamomum verum* is sometimes considered to be "true cinnamon", but most cinnamon in international commerce is derived from the related species *Cinnamomum cassia*, also referred to as "cassia". In 2018, Indonesia and China produced 70% of the world's supply of cinnamon, Indonesia producing nearly 40% and China 30%.<sup>[23]</sup>

## History

Cinnamon has been known from remote antiquity.<sup>[7]</sup> It was imported to Egypt as early as 2000 BC, but those who reported that it had come from China had confused it with *Cinnamomum cassia*, a related species.<sup>[8]</sup> Cinnamon was so highly prized among ancient nations that it was regarded as a gift fit for monarchs and even for a deity; a fine inscription records the gift of cinnamon and cassia to the temple of Apollo at Miletus. Its source was kept a trade secret in the Mediterranean world for centuries by those in the spice trade, in order to protect their monopoly as suppliers. *Cinnamomum verum*, which translates from Latin as "true cinnamon", is native to India, Sri Lanka, Bangladesh and Myanmar *Cinnamomum cassia* (cassia) is native to China.<sup>[8]</sup> Related species, all harvested and sold in the modern era as cinnamon, are native to Vietnam ("Saigon

cinnamon"), Indonesia and other southeast Asian countries with warm climates. In Ancient Egypt, cinnamon was used to embalm mummies. From the Ptolemaic Kingdom onward, Ancient Egyptian recipes for kyphi, an aromatic used for burning, included cinnamon and cassia. The gifts of Hellenistic rulers to temples sometimes included cassia and cinnamon. The first Greek reference to *κασία* : *kasia* is found in a poem by Sappho in the 7th century BC. According to Herodotus, both cinnamon and cassia grew in Arabia, together with incense, myrrh and labdanum, and were guarded by winged serpents.<sup>[7]</sup> Herodotus, Aristotle and other authors named Arabia as the source of cinnamon; they recounted that giant "cinnamon birds" collected the cinnamon sticks from an unknown land where the cinnamon trees grew and used them to construct their nests.<sup>[9]</sup>

## Active constituents

Cinnamon consists of a variety of resinous compounds, including Cinnamaldehyde, Cinnamate, Cinnamic acid, and numerous Essential oils. The spicy taste and fragrance are due to the presence of Cinnamaldehyde and occur due to the absorption of oxygen. As cinnamon ages, it darkens in colour, improving the resinous compounds. various physiochemical properties of cinnamon. The presence of a wide range of essential oils, such as Transcinnamaldehyde, Cinnamyl acetate, Eugenol, L-Borneol, Caryophyllene oxide,  $\beta$ Caryophyllene, L-Bornyl acetate, E-Nerolidol,  $\alpha$ -Cubebene,  $\alpha$ -Terpineol, Terpinolene, and  $\alpha$ -Thujene, has been reported.<sup>[9]</sup>

## Uses

- Cinnamon has Antibacterial properties and it helps in treating pimples.
- Cinnamon is a powerful Antioxidant and thus prevents signs of ageing
- It can make skin look plumper and more even-toned
- Cinnamon has Anti-inflammatory properties.<sup>[8]</sup>

## Orange peel

Botanical name: - *Citrus sinensis* (sweet orange *Citrus aurantium* (bitter orange)

Family: - Rutaceae Genus: - *Citrus*.

An orange is a fruit of various citrus species in the family Rutaceae (see list of plants known as orange); it primarily refers to *Citrus × sinensis*.<sup>[1]</sup> which is also called sweet orange, to distinguish it from the related *Citrus × aurantium*, referred to as bitter orange. The sweet orange reproduces asexually (apomixis through nucellar embryony); varieties of sweet orange arise through mutations. The orange is a hybrid between pomelo (*Citrus maxima*) and mandarin (*Citrus reticulata*). The chloroplast genome, and therefore the maternal line, is that of pomelo.<sup>[7]</sup> The sweet orange has had its full genome sequenced.<sup>[2]</sup> The orange originated in a region encompassing Southern China, Northeast India, and Myanmar. and the earliest mention of the sweet orange was in Chinese literature in 314 BC. As of

1987, orange trees were found to be the most cultivated fruit tree in the world. Orange trees are widely grown in tropical and subtropical climates for their sweet fruit. The fruit of the orange tree can be eaten fresh, or processed for its juice or fragrant peel. As of 2012, sweet oranges accounted for approximately 70% of citrus production.

#### Active constituents

Limonene (90%), Citral (4%), Vitamin C, Pectin, Hesperidine, Aurantimaric acid, Octanal (39%), Decanal (42%), Monoterpene (91%) and contains no less than 2.5% Volatile oil.<sup>[9]</sup>

Uses:- • Protects skin from free radical damage.

- Heals dry, flaky, and itchy skin. • Hydrates dehydrated skin.
- Brings back moisture. • Prevents oxidative stress in skin cells, for youthful, glowing skin.
- Helps in renewing worn-out cells.
- Works as a skin lightening agent.
- Removes tan.
- Loaded with Anti-ageing property.<sup>[10]</sup>

#### Neem

Botanical name: - *Azadirachta indica*

Family: - Meliaceae

Genus: - *Azadirachta*

*Azadirachta indica*, commonly known as neem, nintree or Indian lilac.<sup>[3]</sup> is a tree in the mahogany family Meliaceae. It is one of two species in the genus *Azadirachta*, and is native to the Indian subcontinent and most of the countries in Africa. It is typically grown in tropical and semi-tropical regions. Neem trees also grow on islands in southern Iran. Its fruits and seeds are the source of neem oil.<sup>[22]</sup>

#### Active constituents

The extracted chemical constituents of different parts of neem tree contained many biologically active compounds, including Triterpenoids, Alkaloids, Phenolic compounds, Flavonoids, Carotenoids, Ketones and Steroid. The most biologically active compound is Azadirachtin. This compound belongs to the C-seco Limonoids which was classified as Tetranortriterpenes. It is actually a mixture of seven isomeric compounds labelled as Azadirachtin M and Azadirachtin N, Meliacin, Azadirachtin, Gedunin, Nimbidin, Nimbolides, Nimbin, Salanin and Valassin. The four best Limonoids compounds were included Azadirachtin, Salannin, Meliantriol, and Nimbin. Limonoids contain insecticidal and pesticidal activity which lead to its role as an Antifeedants, Repellents, Growth inhibitors, Attractants, Chemosterilants or as Insecticides Nimbin, Salannin, Salannol are some of the Limonoid compounds isolated from *Azadirachta indica*.<sup>[11]</sup>

#### Uses

- A study on hairless mice shows that neem oil is a promising agent to treat aging symptoms like thinning skin, dryness, and wrinkling.

- Neem oil helps in healing process of post-surgical scalp wounds.
- Neem oil has a good prolonged treatment for acne.
- It also has Antifungal and Antibacterial activity
- It reduces scars, heal wounds, minimize warts and moles.<sup>[12]</sup>

#### Ritha/ Indian soapberry

Botanical name: - *Sapindus mukorossi*

Family: - Sapindaceae

Genus: - *Sapindus*

*Sapindus mukorossi*, commonly known as Indian soapberry, washnut, or ritha, is a species of tree in the family Sapindaceae. It is a deciduous tree that grows in the lower foothills and midhills of the Himalayas at altitudes of up to 1,200 metres (4,000 ft). It is also native to western coastal Karnataka, Maharashtra, and Goa in India. It is tolerant to reasonably poor soil, can be planted around farmers' homes, and one tree can produce 30 to 35 kilograms (66 to 77 lb) of fruit per year.<sup>[21]</sup>

#### Active constituents

Hederagenin 3-O- $\alpha$ -L-arabinopyranosyl(2 $\rightarrow$ 1)- $\alpha$ -L-rhamnopyranosyl 3 $\rightarrow$ 1)- $\beta$ -D-xylopyranosyl(4 $\rightarrow$ 1)glucopyranoside, Hederagenin3-O- $\alpha$ -L-arabinopyranosyl(2 $\rightarrow$ 1)- $\alpha$ -L-rhamnopyranosyl(3 $\rightarrow$ 1)- $\beta$ -D-xylopyranosyl,28-rabinopyranosyl(2 $\rightarrow$ 1)- $\alpha$ -L-rhamnopyranosyl 3 $\rightarrow$ 1)xylopyranosyl (4 $\rightarrow$ 1)glucopyranosyl[(6 $\rightarrow$ 1)rhamnopyranosyl] (2 $\rightarrow$ 1)glucopyranoside.<sup>[13]</sup>

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#### Uses

- The saponins present in Ritha is an excellent ingredient that has a superb cleansing property, and thus it is used in making soap and face wash.
- The mixture of Ritha and Besan flour prepared in water is applied to all parts of the skin, and it helps improve the skin glow and sustenance.
- Due to the perfect moisturizing property of Ritha, it keeps the skin hydrated and prevents the excessive drying of skin, which further helps make the skin look radiant.
- Ritha fruit has powerful Anti-inflammatory and Antibacterial properties, which help treat skin disorders such as Psoriasis, Acne, and Eczema.<sup>[14]</sup>

#### Bilva (Bael)

Botanical name: - *Aegle marmelos*

Family: - Rutaceae

Genus: - *Aegle*

Aegle marmelos, commonly known as bael (or bili or bhel), also Bengal quince, golden apple, Japanese bitter orange, stone apple or wood apple, is a rare species of tree native to the Indian subcontinent and Southeast Asia. It is present in India, Bangladesh, Sri Lanka, and Nepal as a naturalized species. The tree is considered to be sacred by Hindus.<sup>[20]</sup>

#### • Active constituents

Leaves contain Alkaloids, Mermesinin, Rutin, Phenylethyl Cinnamides, Anhydromarmeline, and Aegelinosides Sterols, and Essential oils. Aegeline, Aegeline, Aegelinosides A, Aegelinosides B, Dictamine, Ethyl cinnamamide, Ethyl cinnamate, Fragrine, Halfordinol, Imperatorin, Isoimperatorin, Marmelide, Marmelosin, Marmesin, Marmin, Methyl ether.<sup>[15]</sup>

#### Uses

- The Anti-bacterial, Anti-fungal, and Anti-inflammatory property present in Bael is an excellent remedy for skin infections.
- An oil prepared from Bael leaf is beneficial for skin rash and itchy bumps.
- Bael leaves is also a blood purifier.
- It helps to flush all toxins from the body.
- These fruits are also popular for Antioxidant, Anti-inflammatory and Laxative properties and it has been in use for its medicinal and therapeutic properties in Ayurveda, Siddha and other forms of alternate medicine for thousands of years.<sup>[16]</sup>

#### Nutmeg

Botanical name: - *Myristica fragrans*

Family: - Myristicaceae

Genus: - *Myristica*

Nutmeg is the seed or ground spice of several species of the genus *Myristica*. *Myristica fragrans* (fragrant nutmeg or true nutmeg) is a dark-leaved evergreen tree cultivated for two spices derived from its fruit: nutmeg, from its seed, and mace, from the seed covering. It is also a commercial source of an essential oil and nutmeg butter. The California nutmeg, *Torreya californica*, has a seed of similar appearance, but is not closely related to *Myristica fragrans*, and is not used as a spice. Indonesia is the main producer of nutmeg and mace. If consumed in amounts exceeding its typical use as a spice, nutmeg powder may produce allergic reactions, cause contact dermatitis, or have psychoactive effects. Although used in traditional medicine for treating various disorders, nutmeg has no scientifically confirmed medicinal value.

- Active constituents: Nutmeg contains of 5 to 15% Volatile oil, Lignin, Stearin, Starch, Gum, Colouring matter, and 0.08% of an acid substance. The Volatile oil contains Clemicine, Myristicin, Geraniol, Borneol, Pinene, Camphene, and Dipentene. It also contains Eugenol, Safrol, p-Cymene and Isoeugenol in small quantity.<sup>[17]</sup>

#### Uses

It reduces pigmentation. Mildly abrasive nature makes nutmeg a great exfoliator for skin. Hence it makes skin gentle and smooth. Treats oily skin.

Nutmeg has Anti-oxidant and Anti-ageing properties. Hence it promotes youthful skin. Natural toning cleanser.<sup>[18]</sup>

#### Formulation Of Herbal Face Pack

Step 1: All the required herbal powders for the face pack preparation were accurately weighed individually by using digital balance.

Step 2. The herbal drugs such as Cinnamon, Orange peel, Neem, were transferred to mortar and pestle and triturated.

Step 3. Herbal drugs such as Ritha, Bilva & Nutmeg were triturated in a separate mortar and pestle to form a uniform fine mixture.

Step 4. Previously prepared mixture of herbal powders was transferred to the mixture of fine powders and triturated to obtain uniform drug powder of face pack.

Step 5. The powders were passed through sieve no #44

Step 6. The prepared face pack powder was packed into a self-sealable polyethylene bag, labelled and used for further studies.

#### • Procedure of face pack application

1. Take prepared face pack powder in a bowl as per the requirement and add rose water.
2. Mix well to form a paste with optimum thickness.
3. It should be applied evenly on the face with the help of a brush.
4. Cover the acne and blemishes spots.
5. Keep as it is for complete dryness for 20-25 minutes.
6. Then it should be washed with cold water.

#### METHOD OF EVALUATION

1) Organoleptic Evaluation: The organoleptic parameters include its appearance, color, odor, texture, grittiness, washability, which were evaluated manually for its physical properties.

2) Physicochemical Evaluation: Physicochemical parameters were determined, including the determination of moisture content, extractive values, pH and ash values.

3) Determination of moisture content: Moisture content is important for the plant drugs because insufficient drying may lead to possible enzymatic deterioration of the active principles.

- Moisture content was determined by loss on drying (LOD). Weigh accurately 3gms of the powder drug and take in a weighed petri dish and placed in hot air oven at 100-108°C. It was weighed until constant weight was obtained.

4) Determination of extractive values: Extractive values are primarily useful for the determination of exhausted or adulterated drugs. It helps to determine the quality as well purity of the product. It also gives an idea about the nature of the chemical constituent's. Less extractive value indicates addition of exhausted material, adulteration or

incorrect processing during drying or storage or formulating.

#### Water soluble extractive value

Macerate about 5gm of accurately weighed sample with 100ml chloroform water in a stoppered flask for 24 hours. Shake frequently for first 6 hours. Filter rapidly through filter paper into a 50ml cylinder and evaporate 25ml aqueous extract to dryness in a tared flatbottomed shallow dish. Evaporate to dryness on a water bath and completely dry the residue in an oven at 105o and weigh. Keep it in a desiccator. Dry the extract to constant weight, finally calculate the percent w/w of water-soluble extractive value with reference to the airdried drug.

#### Alcohol soluble extractive value

Macerate about 5gm accurately weighed sample with 100ml 90% alcohol in a 100ml stoppered flask for 24 hours. Shake frequently for first 6 hours. Filter rapidly through filter paper into 50ml cylinder and collect the filtrate and evaporate 25ml of alcoholic extract to dryness in a tared flat-bottomed shallow dish. Evaporate to dryness on a water bath and completely dry the residue at 105o and weigh. Keep it in a desiccator. Dry the extract to constant weight, finally calculate the percent w/w of alcohol soluble extractive value with reference to the air dried drug.

#### Determination of pH

It is the measurement of acidity or alkalinity of the product measured on a scale of 0-14. pH of formulated face pack in rose water was found.

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