

REVIEW ON FORMULATION AND EVALUATION OF POLYHERBAL SOAP

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ABSTRACT

In today's fast world a natural rejuvenation is a necessary step for one's healthy mind and skin. The herbal soap is a natural freshener soap as well as a good cosmetic having rejuvenating and cleansing properties on the skin. the study is aimed to formulate a natural and safe herbal skin soap that has a cleaning, soothing, tightening effect on the facial skin to reduce the facial irritancy and bring freshness as well as fairness, also to Enhance the beauty. the aloe and neem extract we used gives excellent results and safety for sensitive skin dry, oily skin types and can be used on daily basis. along with glycerine which moisturizes the skin. the purpose behind formulating the toner is ease of spread, cooling and smoothening effect fast, and impart ness to facial skin in a mild way (1)

I. INTRODUCTION

In earlier days, naturally available ingredients were generally used as cosmetics, but with the passage of time and improvement in science, several chemicals came into existence that is said to impart or enhance beauty thus used as cosmetics. using these chemical-based products can impart beauty for a particular time but it harms our skin when used for a long time. many harmful effects have been noticed due to the usage of chemical-based products, thus now day's cosmetics industry mainly focuses on the preparation of herbal products.it is known that cosmetic is the product used to enhance and impart beauty to the user. main aim to our project was to prepare chemical free soap so we introduce herbal face soap which is totally based on herbal ingredient. (1)

- **Different types of skin and skin related issue of soap user**

- **Normal Skin Type**

➤ Normal skin is a term widely used to refer to well-balanced skin. the scientific term healthy skin is eudermic



Fig 1: Normal Skin Type

The T-zone (forehead, chin and nose) may be a bit oily, but overall sebum and moisture is balanced and the skin is neither too oily nor too dry.How to identify normal skin a velvety, soft and smooth texture is a sign for a healthy and radiant skin. (2)

- **Normal skin**

- Fine pores
- Good blood circulation
- A velvety,soft and smooth texture

- **Dry skin**

Dry is used to describe a skin type that produces less sebum than normal skin. as a result of the lack of sebum, dry skin lacks the lipids that it needs to retain moisture and build a protective shield against external influences. this leads to an impaired barrier function. dry skin (Xerosis) exists in varying degrees of severity and in different forms that are not always clearly distinguishable. Significantly more women suffer from dry skin than

men and all skin get dryer as it ages. problems related to dry skin are a common complaint and account for 40% of visits to dermatologists. Dry skin can feel tight and rough and look dull.



Fig 2: Dry Skin Type

- **Oily skin**

Oily is used to describe a skin type with heightened sebum production. this over production is known as seborrhea oily skin has a glossy shine and visible pores. (2)



Fig 3: Oily Skin Type

- **Combination skin**

Combination skin is, as the name suggests, skin that consists of a mix of skin types: combination skin the skin types vary in the T-zone and the cheeks. The so-called T-zone can differ substantially from a very slim zone to an extended area.

Combination skin is characterised by: an oily t-zone (forehead, chin and nose) enlarged pores in this area perhaps with some impurities normal to dry cheeks. (2)

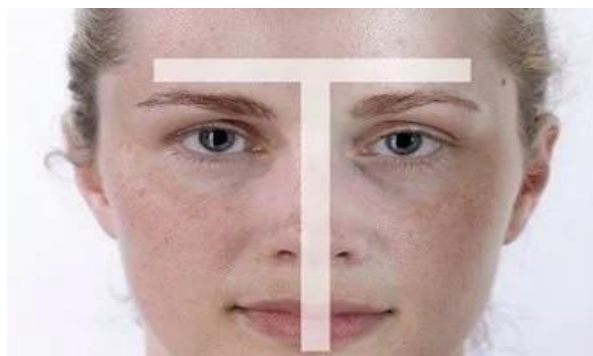


Fig 4: Combination Skin Type

Skin related issue

Acne:

Blocked skin follicles that lead to oil, bacteria and dead skin buildup in your pores. The term acne refers to not only pimples on the face, but blackheads, cysts, and nodules as well. acne is one of the most widespread skin conditions. symptoms can include Pustules, which are pimples with pus at their tips. Papules, which are raised bumps that stem from an infection in hair follicles which are painful lumps beneath the surface of the skin cysts, which are larger, painful, pus-filled bumps beneath the skin's surface, any person can get acne people of colour may also develop dark spots known as post inflammatory hyperpigmentation as a result.

Eczema:

Eczema usually develops early in childhood, but it can arise in adulthood. there are several types, including atopic dermatitis and contact dermatitis. eczema may cause rashes on or around the face, scalp, elbows, neck, wrists, ankles, or legs. the rashes are very itchy and may become bumpy change colour, or thickenbecome bumpy change colour, or thicken. in adults, the rashes may cover more of the body, leadingto widespread dry, itchy areas.The symptoms may be less noticeable in people with darker skin, compared with those who have lighter skin. however, in people of colour, eczema can cause discoloration, making the affected areas lighter or darker. this may last, even after the eczema symptoms are no longer present. there is no known cure for eczema. it may resolve on its own, but medications that relieve the symptoms are available. (2)



Fig 5: Acne



Fig 6: Eczema

Rosacea: Rosacea most commonly causes redness on the face. in people with dark skin the affected area may be darker and warmer than surrounding skin. there are four subtypes and these can cause other symptoms: Erythematotelangiectatic rosacea may cause: (2)

- Redness Visible blood vessels
- Flushing Ocular rosacea may cause dryness.

II. MATERIALS AND METHODS:

1) Neem



Fig 7: Neem

Biological name: Azadirachta indica

Synonyms: Melia azadirachta

Biological source: It consist of leaves and other aerial part of azadirachta indica

Family: Meliaceae

Chemical constituent: Various part of plant is used for various therapeutic and commercial purposes due to presence of different types of chemicals in different parts of this plant. Some of them being:

Leafs: quercetin, nimbosterol, nimbin.

Flowers: nimbosterol, kaempferol, melicitrin.

Bark: nimbin, nimbidin, nombosterol, margosine.

Seed; azadirachtin, azadiradione, nimbin, vepinin,vilasinin, fraxinellone.

Benefits: The anti-aging benefits of neem contain antioxidants and vitamins that reduce wrinkles, fine lines, and dark spots. the goodness of neem protects the skin against environmental stressors such as UV rays and pollution. it also clears up acne breakouts by calming the itchy skin. (3,4)

2) Aloe vera



Fig 8: Aloe vera

Biological name : Aloe Barbadensis

Synonyms : Aloe barbadensis mill, aloe indica royle, aloe vulgaris lam

Family : Asphodelaceae (Liliaceae)

Chemical constituent: Aloes contain c-glycosides and resins

- The crystalline glycosides known as 'aloin'
- Aloin contains not less than 70% anhydrous barbaloin.
- The main crystalline glycoside, barbaloin is found in all commercial varieties.
- On heating to about 160°C barbaloin is partly converted into amorphous β -barbaloin. this substance is said to be absent from the Barbados variety, but present to the extent of about 8% in the Cape.

Benefits: Aloe vera contains saponins, which have a natural cleansing and antiseptic effect. this means that aloe vera in soap is great for killing bacteria that cause breakouts. these antibacterial properties also make aloe vera a great choice to prevent infection of irritated skin. (1)

3) Reetha



Fig 9: Reetha

Scientific name : Sapindus Mukorossi

Synonyms:- Soap nut, Wash nut

Family:- Sapindaceae

Chemical Constituent:- Saponins, Sugar mucila protein.

Benefits : Its antimicrobial and cleansing attributes make it suitable for treating acne, removing dead skin cells, and promoting clear skin. When considering the benefits of reetha for skin, it's evident that reetha can be beneficial for skincare. Its natural properties make it a gentle yet effective solution for cleansing the skin without stripping it of essential oils. This quality is particularly advantageous for those with sensitive or acne-prone skin. (2,3)

4) Babul



Fig 10: Babul

Scientific name :acacianilotica

Synonyms :acacia arabica ,acacia scorpioides

Family :fabaceae

Biological source :is the dried gummy exuda-tion obtained from the stems and branches of acacia Senegal

Chemical constituent :acacia contains mainly arabin that is mixture of calcium, magnesium and potassium salt of arabic acid in this calcium salt is found in abundance.

Benefits: Enriches Skin Texture. Babool leaves works amazingly well to heal dry skin problems like itching and flakiness. The powerful anti-inflammatory, antiseptic and antifungal properties of babool leaves are beneficial in treating various skin conditions. Furthermore, babool leaves sustain the skin radiance and glow. (4,5)

5) Brassica oleraceae var capitata



Fig 11: BrassicaOleraceae Var Capitata

Synonym :Brassica arborea , brassica oleracea var costata (15)

Family : Brassicaceae

□ **Benefits :**

- Brightens dull skin adding a health glow
- Soothes sensitised skin
- Helps protect skin from uvdamage,pollution, dust etc
- Helps prevent pigmentation.

6) Turmeric



Fig 12: Turmeric

Scientific name: Curcuma longa

Synonyms: Haldi, Curcuma, Rhizomacurcumae

Family: Zingiberaceae

Biological source: Turmeric is the dried rhizome of curcuma longa linn.

Chemical constituent: curcumin is the major colouring principle present upto upto 5% in the rhizomes.mixture of curcumin, monodes methoxy curcumindisdesmethoxycurcumin

Benefits:

1. It offers cooling & soothing.
2. Promotes healthy and even skin tone, provides natural smell and effectively moisturizes the skin.

3. Packed with great antibacterial properties, it improves skin complexion, brightens the skin, treats dry skin and heals scars.

4. Besides this, it also fights skin damage by free radicals.

5. Safe and effective for all skin types. (14)

METHOD USE IN PREPARATION OF SOAP

1) Selection of plant material :The azardirachtaindica (Neem) ,curcuma longa (haldi), aloevera, brassica oleraceae var capitata (cabbage extract), babul , reetha.

2) Preparation of powder: The herbs were dried under shade for about 2 weeks and then made into powdered form using mortar and pestle.

3) Preparation of Basic Glycerine Soap

The lye solution was produced by blending potassium hydroxide with distilled water in a nonmetallic pan and heating it below 500C until it became transparent, then cooling it. the addition of lye solution was done, which was produced by boiling palm oil, coconut oil. place the cover on the slow cooker and simmer for many hours (about hours) until the soap mixture becomes translucent. pour the alcohol and glycerine into it.. allow the soap to simmer for about 30 minutes, covered and sealed. the already prepared sugar solution at low temp is after 30 min, in which the sugar entirely dissolved in the water. then I gently poured glycerine soap into the soap moulds. the mixture in soap moulds was allowed to cool to get solidified in refrigerator.

4) Procedure of Soap Formulation

The small pieces of the prepared basic glycerine soap were put into a pan and melted on a water bath at a temperature below 60°C. neem, aloevera, turmeric ,brassica oleraceae, reetha, babul extract were added after that all of the components such as ethanol, stearic acid were combined together. the liquids Was poured into the mold, which was then allowed to harden at room temperature and evaluated the various parameters of soap. (16)

III. EVALUATION PARAMETERS

- **Organoleptic Evaluation :** Organoleptic evaluation such as colour and clarity was done by sensor and visual inspection.
- **Determination of pH :** The pH of prepared herbal soap was determined by using a digital pH meter.
- **Determination of Percentage Free Alkali :** For the determination of the percentage free alkali in the conical flask of dissolved prepared polyherbal soap in of neutralized alcohol was boiled under the reflux on a water bath for 30 minutes. then it was
- **Foam Height :** Dissolved 0.5 gm of soap in distilled water then With distilled water in 100 ml measuring cylinder make up the volume up to 50 ml. By giving 25 strokes the volume of foam height was measured.
- **Foam Retention :** In the 100 ml of measuring cylinder transfer the Prepared the 25 ml of the 1% soap solution .then the cylinder was shaken 10 times. the volume of foam retention was recorded.
- **Moisture content :** The moisture content was used to measure the percentage of water in the soap by drying it to a consistent weight. before being dried in a dryer at temperatures ranging from 100 to 1150 degrees Celsius, the soap was weighed and recorded as the wet weight of the sample. The sample was refrigerated and weighed to determine the dry weight of the sample (16)

IV. CONCLUSION

- The prepared formulation when tested for different test gave good results.
- Herbal soaps have a strong impact on the skin, in terms of making it soft, smooth and supple.
- On the contrary, chemical soaps are full of damaging substances that can harm the skin as well as health.
- The multiple benefits of herbal soaps make them the right choice for better skin care and optimal health outcomes. From the scent to the therapeutic value and the aromatic benefits to medicinal properties, herbal soap heals, soothe and rejuvenate the skin
- The prepared formulation when tested for different test gave good results

- Furthermore the prepared soap were standardized by evaluating various physico chemical properties such as pH appearance odour in which the exhibit satisfactory effect

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