

Formulation and Evolution of Facial Scrub

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Abstract: The importance of cosmetics is increases day by day. Cosmetics help to enhance our appearance and make us feel more confident. With more cosmetics on the market today than ever before, it becomes obvious to us that they play a great role in our everyday life. So, there is huge scope in cosmetic industries

Keywords: cosmetics.

I. INTRODUCTION

The importance of cosmetics is increases day by day. Cosmetics help to enhance our appearance and make us feel more confident. With more cosmetics on the market today than ever before, it becomes obvious to us that they play a great role in our everyday life. So, there is huge scope in cosmetic industries.

1.1. Definition of Cosmetic

The FD and C act Sec 321, Title 21 provide the definition of cosmetic product. The term "Cosmetic" means Articles intended to be rubbed, poured, sprinkled or sprayed on, introduced into or otherwise applied to the human body or any part there for cleaning, beautifying, promoting attractiveness or altering appearance.

1.2 Skin [1]

The skin, also known as the cutaneous membrane covers the external surface of the body and is the largest organ of the body in weight. In adults, the skin covers an area of about 2 square meters (22 square feet) and weighs 4.5–5 kg (10–11 lb), about 7% of total body weight. It ranges in thickness from 0.5 mm (0.02 in.) on the eyelids to 4.0 mm (0.16 in.) on the heels. Over most of the body it is 1–2 mm (0.04–0.08 in.) thick.

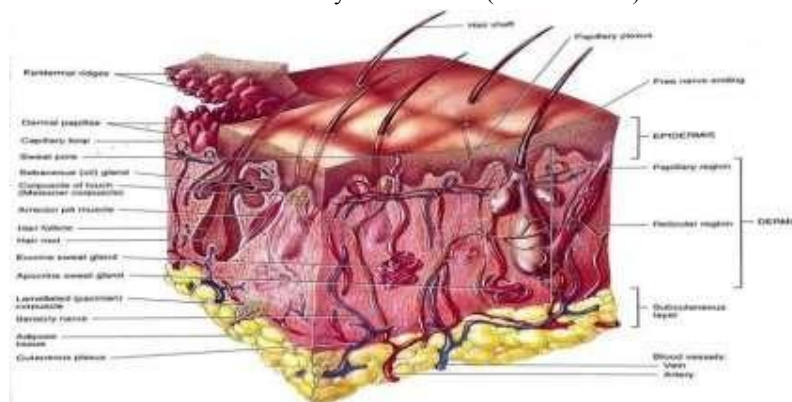


Fig.1 Skin

1.6.4 Benefits of face Scrub [5]

1 Detoxifies Your Skin

The removal of dead skin cells from your face is the main benefit of utilising a facial scrub. Your skin's dead cells give you a dry, dismal expression on your face. These also clog the pores of your skin. Your skin is completely exfoliated and the dead skin cells are removed by facial cleansing.

2 Unclogs Skin Pores

Sebum is a natural oil that the body produces to keep the skin moisturised. But occasionally, production can become excessive, and the extra sebum oil is stored in your skin pores. Skin breaks out results from the skin pores becoming



entrapped rather than being excreted into the environment. Sebum oil is eliminated via shedding, which also clears skin pores.

3 Gives Smoother Skin

Apart from the over, face scrubs moreover make your skin surface smooth and shining. When you confront shows up smoother, softer, and shining, your self-esteem is actually bound to extend.

4 Improve skin texture for better absorption of skin. Facial skin is delicate, thinner, and more inclined to harm as compared to the skin on other parts of the body. Inappropriate skincare, contamination, etc, can lead to unpleasant, gloomy skin.

5 Evacuates Flakes

Many people pay attention to dry spots of skin. Drops are the name for these areas of dry skin. These are not only unpleasant, but they also make the skin look extremely dismal. You may get rid of the flaky skin and make it smoother by exfoliating your face using a facial scrub.

2. Literature Review

2.1 Rutuja Prashant Nangare et al. (2022) [6]

The use of natural ingredients to fight against acne, wrinkle and also to control secretion of oil is known as natural or herbal cosmetics. Herbal cosmetics are the safest product to use routine with no side effects and cosmeceuticals are the product which influences the biological function of skin. In this preparation fenugreek, coffee, coconut oil, rose water, turmeric, Aloe Vera gel, amla, honey, sodium lauryl sulfate, methyl parabens, glycerin is used as active ingredients and incorporated into the gel which is prepared with carbopol of different. The main objective of present study was to prepare a polyherbal scrub incorporated into gel.

Conclusion - The goal of the current investigation was to create a multi-herbal scrub. The created scrub gel was tested using a number of factors, and it was determined to be satisfactory for use on the skin to promote health and radiance without causing any negative effects. To test the prepared scrub's irritancy, in vivo experiments will be conducted.

2.2 Gadge Rutuja et-al (2022) [7]

Creating gelled Polyherbal scrubs was the major goal of our study. Cosmetics have a part in modifying the look of the skin in both men and women's daily lives. When applied to the skin, the majority of cosmetics on the market dry quickly, lighten the skin after usage, and reduce the duration of skin issues like acne and redness. The active constituents in this mixture are green tea, aloe vera gel, rice flour, sandalwood flour, almond oil, mint, saffron carrot juice, orange peel powder, and coffee. Sodium lauryl sulphate was combined with other chemicals like methylparaben, triethanolamine, etc. in the gel. The produced gel was assessed for several factors, including appearance, pH, viscosity, Spreadability, detergency, and hypersensitivity, and it was discovered to be sufficient for all required characterization. Therefore, the developed formulation can be used as an effective exfoliating agent to maintain healthy and shiny skin.

3. Aim & Objective

3.1 Aim

Formulation and evaluation of novel herbal facial scrub is to create a product that effectively exfoliates the skin, removing dead cells and impurities, while being gentle and safe for regular use. Evaluation ensures the product meets safety standards, delivers desired results, and aligns with consumer preferences, such as texture, fragrance, and packaging.

3.2 Objective

- **Efficiency:** Creating a formula that effectively removes dead skin cells, dirt, and impurities from the skin.
- **Safety:** Ensuring the product is safe for use on the face, without causing irritation or adverse reactions.
- **Consistency:** Developing a formula with consistent texture, scent, and appearance.
- **Stability:** Ensuring the product remains stable over time, with minimal degradation of ingredients.
- **Consumer Satisfaction:** Meeting consumer preferences regarding texture, fragrance, packaging, and overall performance.



- Regulatory Compliance: Ensuring the product meets regulatory requirements for cosmetic products.
- Innovation: Incorporating novel ingredients or technologies to enhance the efficacy and appeal of the product.
- Cost-effectiveness: Creating a formula that balances efficacy with cost
- To formulate the multi herbal facial scrub.
- To exfoliate the skin and get rid of dead skin cells and other impurities from surface of the skin.
- To give various effects in one formulation.
- To evaluate the various parameter to the formulation.
- To formulate the cost-effective face scrub.
- To formulate safe dosage form.

4. Plan of Work

The goal of the current work was to revitalize the skin's tone and make it healthier by removing dead cells, debris, and impurities from the epidermis and dermis.

1. Searching of various literature regarding face scrub. 1 Segregate the required literature.
- 2 Selecting appropriate research articles for face scrub.
2. Survey for need of market.
3. Formulation of face scrub using various Multi Herbal Ingredients with the help of sophisticated equipments and instruments as per required procedure.
4. Evaluation parameter for face scrub
 - a. Organoleptic properties-
 - Colour
 - Odour
 - Consistency
 - Homogeneity and texture
 - b. Washability
 - c. pH
 - d. Viscosity
 - e. Extrudability
 - f. Spreadability
 - g. Skin irritation
5. Comparison with the market.
6. Compilation and submission of data.

5. Herbal Ingredients

5.1. Chickoo [14]



Fig 3 chickoo

Common Name- Sapodilla



Scientific Name- Manilkara Zapota

Description- Chikoo has brown fuzzy skin and is more oval-shaped than its Central American cousins, though some develop pointed ends. The skin is inedible, but serves a purpose as a kind of bowl for the sweet flesh.

Plant Care- The soils varieties suitable for Sapota cultivation are deep alluvium, sandy loam and medium black soil. Sapota is a tropical fruit and needs warm, humid climate for growth and development.

Uses- Chikoo is an excellent source of antioxidants and helps with skin texture. Chikoo can make for excellent exfoliants when used with honey and sugar.

5.2 Neem [15]



Fig 4 Neem

Synonym- Neem

Biological source- It consists of dried leaves of Azadiracta indica belonging to

Family- Meliaceae.

Description Colour- Green Odour - Pungent Taste – Bitter

Plant care- Neem tree needs little water and plenty of sunlight. The tree grows naturally in areas where the rainfall is in the range of 450 to 1200 mm.

Uses - Treats acne. The antibacterial properties of neem fight acne-causing bacteria, which helps in the treatment and prevention of acne. Pacify irritated skin. Fight signs of ageing.

5.3 Aloe Vera [15]



Fig.5 Aloe Vera



Synonym- aloe vera, burn plant

Biological source- dried latex of leaves of it also known as cape aloe belong to the family-Liliaceae

Description- Colour- clear to slightly yellow / translucent gold Odour-similar like rotten garlic or onion taste- Bitter

Plant care- Aloe vera are succulents, so they store water in their leaves. It is important not to overwater them – water whenever the top few centimetres of compost to dry out between waterings.

Chemical constituents- aloe emodin

Uses- heals burns and clears acne

6. Excipients Profile

6.1 Xanthan Gum

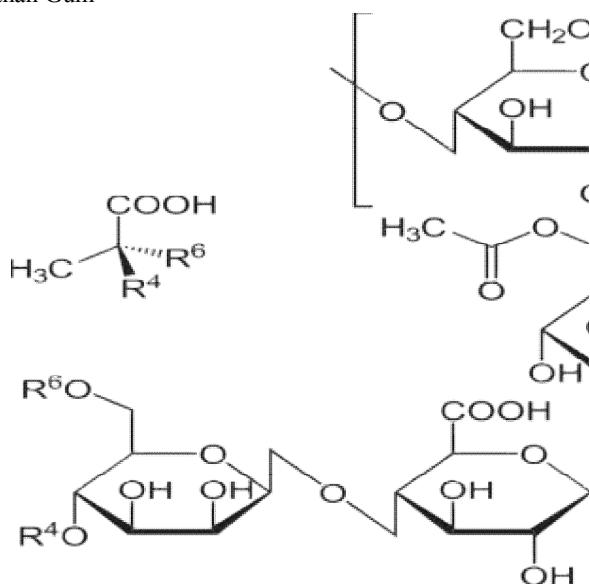


Fig 6 Xanthan gum Non-proprietary Names- BP Xanthan gum Synonyms- Corn sugar gum

Empirical Formula Molecular Weight- The USP describes xanthan gum as a high molecular weight polysaccharide gum. It contains D- glucose and D-mannose as the dominant hexose units, along with D- glucuronic acid, and is prepared as the sodium, potassium, or calcium salt. The molecular weight is approximately 2×10^6 .

Description- Xanthan gum occurs as a cream or white-colored, odorless, free- flowing, fine powder.

6.2. Triethanolamine [16]

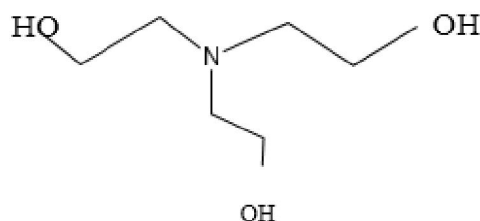


Fig 7 Triethanolamine

Description- Triethanolamine is an organic compound with the chemical formula $N(CH_2CH_2OH)_3$. It is a colourless viscous liquid. It is both a

8. Evaluation Parameter [19,20,21,22]

- Organoleptic Property
- Colour-

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- Odour
- Consistency- Check grittiness, saftiness,
- Homogeneity & Texture- it was tested by pressing a small quantity of formulated scrub between thumb and index figure.
- Wash ability- This test was performed on neck region.
- Grittiness- Gel was found to have Few gritty particles.
- pH-Using a digital pH metre, the pH value of face scrub is determined. A pH reading is made by dipping an electrode into the appropriate gel formulation after one gramme of gel has been dissolved in 100 ml of distilled water and left to stand for two hours.
- Spreadability- Keeping 1gm of sample between two transparent glass slides. The standard weight 20gm apply on upper glass of slide. It is calculated

$$S = m \times L / t$$

were,

S- Spreadability

m- Weightless on slide (1gm) t- Time taken in sec (22sec) L- Length of glass slide (7.5)

- Skin Irritation- The scrub can be used sparingly and left on the skin for a short time and found to be non-irritant.
- Extrudability – Small amount of gel was taken into a collapsible ointment tube. One end closed and the other end kept opened. Slight pressure was applied on the closed side. The time taken to extrude and the amount of gel extruded was noted.
- Stability Study- Stability of formulation can be tested by filling the scrub in plastic container. Placing it in humidity chamber at 45°C and 75% relative humidity.

9. Result and Discussion

The face scrub was easy to apply and wash effectively on all skin types. The formulated face scrub was evaluated by different physical properties

1. Organoleptic Property

- a. Colour - Light Brown
- b. Odour - Characteristic odour
- c. Consistency-Good
- d. Homogeneity & Texture-

2. Washability

Little quantity of face scrub was applied over the skin and washed with water. It was easily washable.

3. Grittiness

Gel was found to have a few small gritty particles

4. pH

The measurements of pH of the formulation were done and it was observed that the pH of formulations F1 to F5 was found to be in the range of 6.9 to 7. From the values of pH, it is concluded that the face scrub was compatible with skin.

5. Spreadability

Spreadability denotes the extent of area to which the gel readily spreads on application to skin or the affected part. The spreading was expressed in terms of time in seconds taken by two slides to slip off from the gel, placed in between the slides, under certain load. Lesser the time taken for separation of the two slides, better the spreadability. Two sets of glass slides of standard dimensions were taken. The gel formulation was placed over one of the slides. Spreadability of different scrub formulation were studied.

II. CONCLUSION

From the recent years studies the youth move towards the herbal formulation over the synthetic formulation. There are various herbal cosmetics available in market but youth focus for clean glossy skin and dirt removal formulation, so



overcome on the problems regarding with skin like oily skin, blackheads on skin, dull skin we formulate the Face scrub with goodness of chickoo.

This study target for enhancing the face skin appearance by formulating multi herbal facial scrub which includes Chickoo, Neem, And Tomato The combination of these herbal constituents produces an effect to minimize the Acne problem along with Antiaging, Antioxidant as well as antimicrobial effect.

The formulation results were appreciable and therefore, it may be considered as abest face scrub.

Overall, this study reports concluded that the formulation of multi herbal facial scrub may offer an effective which leads to patient adherence and compliance to theformulated product.

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