



Formulation And Evaluation Of Antimicrobial Scrub From Custard Apple Seed

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Abstract

Cosmetics play a vital role for everyone to have a joyful and sanguine life. In present scenario herbal cosmeceuticals have more demand because they have no side effects.

People having oily skin suffer from acne, whiteheads and blackheads quite often so scrubbing become more essential. In our present study we formulated scrub in gel form for oily skin by using custard apple seed powder, sugar, turmeric powder, glycerine, aloevera gel, methyl paraben, citric acid and evaluated by using various parameters such as physical appearance, viscosity, pH, spreadability, irritability, washability, stability studies and got fruitful results with all the tests.

Keywords:- Custard apple seed powder, facial scrub, natural exfoliant, skincare, Herbal scrub

1. INTRODUCTION:

Cosmetics are defined as the products used for the purposes of cleansing, beautifying, promoting attractiveness or alternating the appearance. Herbal cosmetics are the products in which natural ingredient are used. The main advantage for using an herbal cosmetic is that it is pure and does not have any side effects on the human body. Herbal cosmetics are prepared by the association of bioactive ingredients and pharmaceutical products.

Facial scrubs are an essential part of a skin care routine. A facial scrub is usually a cream-based product that contains little exfoliation pieces that when massage across the skin help smooth the skin by physically lifting of dry, dead skin cells.

There are two types of scrub being used on the skin such as facial scrub and body scrub. Usage of oil is high in facial scrub due to which it is less abrasive it removes the dead skin cells and exfoliates the skin. Skin is classified into three types such as dry skin, oily skin and sensitive skin. On regular use of scrubs skin becomes glowing or smoother because dead skin cells are remove thereby exposing new skin cells. Exposure of skin to external agent can be prevented by applying the topical agents directly on the skin.^[1]

The main application of cosmetic is cleansing, beautifying, promoting attractiveness or altering the appearance without affecting the body structure and functions.

There are two types of scrubs being used on the skin such as

Facial scrub

Body scrub

This herbal scrub is the type of facial scrub. Scrub is formulated to remove healthy and good appearance. The skin on the face is in regular contact with dirt, pollution and contaminants.

A face scrub is a skin care product used to exfoliate the skin. It helps in the removal of dead skin cells from the surface of the skin, reduce the clogged pores and acne.

Custard Apple Seed (*Annona squamosa* Linn) is a rich source of bioactive compounds, including flavonoids, phenolic acids, and alkaloids. These compounds have been shown to possess antioxidant, anti-inflammatory, and antimicrobial properties, making Custard Apple Seed an attractive ingredient for herbal skincare products.^[2]

Herbal scrubs are a popular skincare product used to exfoliate and nourish the skin. They typically contain a combination of natural ingredients, including herbs, spices, and oils. The incorporation of Custard Apple Seed into herbal scrubs offers a unique opportunity to harness its therapeutic properties and provide a range of benefits for the skin.

Drug Profile:

- Botanical Name:-*Annona Squamosa* Linn
- Common Names:-Custard Apple, Sugar Apple, Sweetsop
- Chemical Constituents:-Alkaloids(*Annonaine*)
- Flavonoids (*Kaempferol*)
- Phenolic acids (*Gallic acid*)
- Saponin(*Annonoside*)
- Fatty acid(*Oleic acid*)



Fig No: – 1 Custard Apple

2. Materials:-

❖ Chemicals:-

1. Custard apple seed powder
2. Coconut oil
3. Methyl parabens
4. Citric acid

5. Glycerine
6. Sugar
7. Aloe vera gel
8. Turmeric powder

❖ Methods:

➤ Seed Collection & Preparation:

Custard apple seed are collected from the rural area of the Loha city. In this area these trees are mainly found in the farms, seeds of custard apple are collected in the winter season for the presentation of antioxidant custard apple seed capsule. After properly collection of the seed, wash the seed properly with clean water then dry under sunlight, then crush the seed and prepare powder.



| Sr no. | Name | Diagram | Role |
|--------|-----------------|--|---|
| 1 | Coconut oil |  | Nourished the skin |
| 2 | Sugar |  | Remove dead skin cells |
| 3 | Aloevera gel |  | Soothes and calms irritated skin. |
| 4 | Turmeric powder |  | Reduce acene, glowing skin, natural antiseptic and inflammatory property. |
| 5 | Glycerine |  | Hydrated and lock in moisturizer. |
| 6 | Citric acid |  | Lightened the skin, remove dark spots and skin tan. |

Table no 1 :- Ingredients

3. Evaluation Parameter:- ^[18]

❖ Organoleptic Properties:-

1. Colour
2. Odour
3. Consistency
4. Texture

❖ Other parameters:-

1. pH
2. Washability
3. Spreadability
4. Skin irritation
5. Grittiness
6. Viscosity

❖ Evaluation parameters:-

➤ Organoleptic Evaluation :-

All the organoleptic properties were checked visually such as colour, odour, homogeneity & texture, consistency.

1. Colour :-

The colour of the formulation was visually tested and found to be brown.

2. Odour :-

The odour of the mixture was tested by spreading the solution on the hand and smelling.

3. Consistency :-

The consistency of the formulation and particles were used to check the texture and homogeneity of the preparation on the skin such as stiffness, greasiness and preparation found semi-solid in nature.

4. pH :-

The pH of the scrub was determined using digital pH meter considered to avoid the risk of irritation on application to the skin. pH of prepared gel was evaluated small amount of the gel was applied on the pH meter and found to be 5.8. Our product passed within the range.

5. Washability :-

This test was performed directly on skin, preparation applied on skin and wash with normal water, after washing clean and clear skin observed. Our product passed the washability test without any side effects.

6. Skin irritation :-

Small quantity of the preparation was applied on the dorsal part of hand and kept for few minutes and found to be non-irritant, no redness and edema or any other adverse effects. Our product passed skin irritation without any side effects.

7. Spreadability :-

The spreadability of the formulations was evaluated by placing 1 gm of material between two horizontal glass plates (10 cm, 20 cm) and measuring the spreading diameter. A standard weight of 20 gm was put on the upper glass plate. Visual inspection was used to check the spreading quality.

Spreadability calculated by using following formula. Our product passed the Spreadability test.

$$S = m \cdot l / t$$

Whereas, S - Spreadability

m - weight placed on slide

l - length of glass slide

t – time taken in second

8. Viscosity :-

The viscosity of the different scrub formulae was determined at 25°C using Brook field viscometer DV2T model. The scrub sample (5g) was placed in the sample holder of the viscometer and allowed to settle for 5 min, and the viscosity measured. Our product passed the Viscosity test.

9. Grittiness :-

Few gritty particles were found in the face scrub.

Exfoliant needs to have abrasive properties so to satisfy that the lentil pulse were powdered and passed through sieve no.60 such that the preparation as few gritty particles. Our product passed the grittiness test.

4. RESULT AND DISCUSSION:-

A. Collection of sample :-

Sample is collected from the local areas from Loha , Dist – Nanded.

B. Authentication

The sample was authenified by Dr S. V. Mandge HOD (Botany dept.) of Shri Sant Gadge Maharaj College, Loha

C. Antimicrobial Study

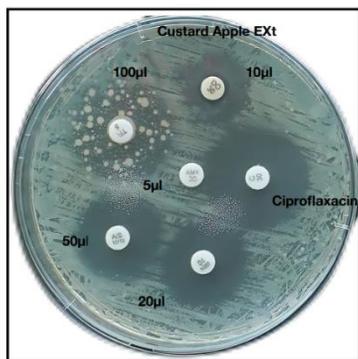


Fig no 2:-Antimicrobial activity of Custard apple against *E-coli*

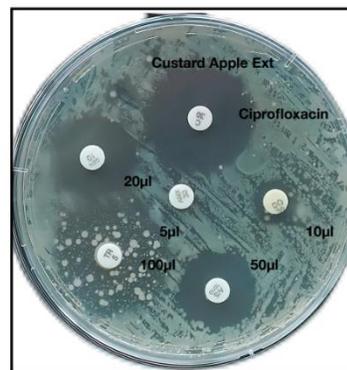


Fig no 2:- Antimicrobial activity of Custard apple against *S. Aureus*

D. Formulation Table:-

| Sr.No | Ingredients | F1 | F2 | F3 | F4 |
|-------|---------------------------|--------|---------------|--------|--------|
| 1 | Custard apple seed powder | 1.3 gm | 1.4 gm | 1.gm | 1.6 gm |
| 2 | Coconut oil | 5.4 ml | 6 ml | 5 ml | 5ml |
| 3 | Sugar | 4 gm | 4 gm | 2 gm | 3gm |
| 4 | Aloevara gel | 3 ml | 2 ml | 4 ml | 4 ml |
| 5 | Turmeric power | 0.3 gm | 0.1 gm | 0.6 gm | 0.5 gm |
| 6 | Glycerin | 0.2 ml | 0.2 ml | 0.2 ml | 0.2 ml |
| 7 | Methyl paraben | 0.7 gm | 1.2 gm | 1 gm | 0.5 gm |
| 8 | Citric acid | q.s | q. s | q.s | q.s |

Table no 2 :- Formulation of Scrub



Fig no. 2:- Batches of Scrub

E. Evaluation Of herbal Scrub

| Sr. No | Parameter | Results |
|--------|---------------|-----------------|
| 1 | Colour | Yellowish |
| 2 | Odour | Pleasant |
| 3 | State | Semisolid |
| 4 | Consistency | Semisolid |
| 5 | pH | 5.8 |
| 6 | Spreadability | Uniform |
| 7 | Irritability | No Irritation |
| 8 | Washability | Easily washable |

Table no 3 :- Evaluation of Scrub



Fig no. 3 Before Application

Fig no. 4 On Application

Fig no. 5 After Application

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The facial scrub prepared in the laboratory was found to be comparable to the scrub with several parameters. The prepared scrub was evaluated for various parameters like colour, odour, consistency, pH, spreadability, viscosity, irritability, washability, grittiness

5. Conclusion:-

Herbal formulations have growing demand in the world market. Herbal face scrub used to stimulate blood circulation, rejuvenate the muscles and help to maintain elasticity of the skin and remove dirt from skin pores. We have formulated this formulation herbal scrub in laboratory. The evaluation parameters such as Organoleptic evaluation, pH, washability, skin irritation, Spreadability, Viscosity, Grittiness. We also authenticated the collected herbal extracts of coffee, charcoal, honey was identified and authenticated by Mr. S. V. Mandage Sir Professor an Head Department of Botany), Shri Sant Gadge Maharaj College Loha. It has been revealed that herbal face scrub having enough potential to give efficient glowing effect on skin. The overall study is useful to substantiate products claims due its useful benefits on the human beings.

6. SUMMERY

The present study was attempted to make a herbal scrub using suitable base to form gel. The prepared scrub was compared with various parameters like colour, odour, consistancy, pH, irritability, washability, grittiness and found to be satisfied with all required characterization. Thus, the developed formulation can be used as an effective scrub for using it healthy and glowing skin.

In this all natural ingredients were used so that they had no side effects. The prepared herbal scrub was found to satisfied for the application on the skin to make it healthy and glowing. The application of scrub gel which helps to improper blood circulation, increases oxygen supply to all surfaces of the skin after application on scrub, skin becomes softer, cleaner and refreshed.

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