



Formulation and Evaluation of Herbal Face Scrub

¹*Bushra S. Sayyed*, ²*Tejal Vishe*

Department of Pharmaceutics, P.R.E.S.'s, College of Pharmacy (For Women), Chincholi, Nashik, Maharashtra, India.

ABSTRACT-

The study's goal was to develop an herbal face cleanser. The skin on the face is frequently in contact with dirt, pollution, and other pollutants. The scrub contains natural ingredients that are safe to use and have anti-depilation, antibacterial, anti-infective, antioxidant, and anti-aging qualities. The primary goal of this study was to create an herbal facial scrub utilizing natural ingredients to prevent and fight against numerous skin problems, as well as to control oil secretion on the skin's surface. To treat all of these issues and de-tan the face, use a scrub made entirely of natural substances that improves washing, softening, moisturizing, and skin fairness, as well as removing excessive facial hair. Herbal products are the product that improve the function of skin. The objective of this work to formulate and evaluate herbal face scrub for skin exfoliation & glowing skin by using natural ingredients with the varying concentrations, four different formulations containing orange peel, Lemon peel, Turmeric, Tulasi, Neem, Red lentils and Multani mitti used as ingredient and incorporated into the herbal scrub along with Charcoal powder into the formulation. All prepared formulations were evaluated by different parameter such as organoleptic properties, physico-chemical parameters and stability along with irritancy test and microbial load. All formulation was found to be good in physical parameters, free from skin irritation and maintained its consistency even after stability storage conditions and also having microbiological stability.

Keywords: Scrub, Natural, Herbal, Formulation, Evaluation

Introduction

Some people are born attractive, while others are created to look beautiful. Those of herbal products has expanded dramatically in the current circumstances. Demands for herbal products are increasing day by day due to the great health benefits of synthetic components, which contribute to environmental destruction. Individuals' confidence can be increased by using skin care products. Women were supposed to be the main consumers of skin care products, but males are now just as concerned about their appearance. A balanced diet should be consumed to keep the skin healthy and supple. Environmental variables such as UV radiation, pollution, dust, and climatic fluctuations will exacerbate skin problems. Herbal products come in a variety of forms, each with its unique function on the skin. Skin gets dull and lacks luster due to a variety of factors, which can be efficiently addressed with the use of scrubs. On the skin, there are two types of scrubs: facial scrub and body scrub. It exfoliates the skin and eliminates dead skin cells. Scrub can be use on any skin type.

Ideal Properties of Scrub

An ideal scrub is accepted to possess the following properties.

It should be-

- Non toxic
- Possess small gritty particles
- Mild abrasive
- Non irritating
- Non sticky
- Able to remove dead skin cells

Benefits Of Scrubbing Skin

1. For A Squeaky-Clean Skin:

Scrubbing gives you clean skin, free from dirt, oil, and sweat. Actually, the bottles of cleansing milk, face wash and facial cleansers cannot pull out all the dust that accumulates in the pores of your skin. Scrubbing does this job successfully

2. Frees Your Skin from Flakes:

Flaky skin gives rise to dry patches. It allows dead cells accumulate over time. Scrubbing your skin can help you deal with flaky skin effectively.

3. Helps in Removing Dead Cells:

Dead cells make your skin look dull and tired. Scrub them off with a gentle scrub.

4. Adds Glow to Skin:

Exfoliation can actually make your skin glow.

5. Removes Dark Patches:

Use of scrub twice a week to get results. It is especially effective on knuckles, elbows and knees.

6. Removes Acne Scars:

Exfoliation helps in doing away with acne scars.

7. Prevents Ingrown Hair:

Ingrown hair is a perennial problem and scrubbing is the solution to prevent this problem.

8. For Smooth Skin:

Smooth skin is the key to a more beautiful you. The scrub will not only make your skin look flawlessly smooth, but will also make it soft and well-nourished.

9. Improves the Texture of Your Skin:

Scrubbing your skin gives you clean and smooth skin with an improved texture.

10. Promotes Clear Complexion:

As soon as the flakes, dead cells, blemishes and accumulated impurities are done away. The scrub has natural skin whitening ingredient, the effect is even better.

MATERIALS AND METHODS:

Materials

- Orange Peel powder
- Lemon Peel powder
- Tulsi leaves powder
- Neem leaves powder
- Multani mitti
- Masoor dal
- Turmeric
- Charcoal

Orange peel powder



[Fig.1]

Synonyms- Orange zest

Biological source- It consists of dried fruits of *Citrus sinensis*

family -Rutaceae.

Description- color- Dark orange red

Odour Aromatic

Taste – Bitter

Chemical constituents- Terpenes, Carotenoids, Flavonoids

Uses- Reduce skin marks, skin spots, help to skin whitening, Treat pimples, acne.

Lemon peel powder



[Fig.2]

Synonyms-Cortex limonis

Biological source-Lemon peel is the outer part of the pericarp of the ripe fruits of *Citrus limon* burm. it contains not less than 2-5% of volatile oil.

Family- Rutaceae

Description Colour- yellow

Odour– fresh, clean, biting

Taste – sour

Chemical constituents- Camphene, bpinene, Sabinene etc.

Uses-antimicrobial, antifungal, anti-inflammatory, anti-cancer, depurative, Anticancer, antioxidant, Antiparasitic, treat scurvy, skin astringents.

Tulsi leaves powder



[Fig.3]

Synonyms- Tulsi

Biological source- It consists of dried leaves of *Ocimum sanctum* L

Family-Lamiaceae

Description colour- Green

Odour - Aromatic

Taste – Pungent

Chemical constituents -oleanolic acid, ursolic acid, rosmarinic acid

Uses- Prevents acne and pimples, Improve skin texture, Cleanser

Neem leaves powder



[Fig.4]

Synonyms- Neem

Biological source- It consists of dried leaves of *Azadirachta indica*

Family- Meliaceae

Description colour- Green Odour - Pungent Taste – Bitter

Chemical constituents- Nimbinin, Nimbidin, Quercetin

Uses- Skin toner, lightens skin blemishes, Remove blackheads

Multani Mitti



[Fig.5]

Synonyms- Multan clay

Biological source- It consists of hydrous aluminum silicates (clay minerals)

Description colour- White Odour - Pleasant Taste – Pleasant

Chemical constituents- Montmorillonite, Kaolinite, Attapulgit

Uses- Nourishes skin, reduce oiliness, Remove blackheads

Masoor Dal



[Fig.6]

Synonyms- red lentil

Biological source- bushy [annual plant](#) of the [legume](#) family.

Description colour-Orange

odour-sweet

Taste-earthy ,sweet

Chemical constituents- Phenolic acid, Phytic acid, Flavonoids, Saponins

Uses-for the heart and for managing blood pressure and cholesterol,Expholiator,

Turmeric



[Fig.7]

Synonyms- Curcuma longa

Biological source- It consists of dried rhizomes of Curcuma longa belonging to **family-** Zingiberaceae

Description Colour – Yellow

Odour - Aromatic

Taste - Bitter

Chemical constituents- Curcumin, Curcuminoids

Uses- Reduce acne, Glowing skin, Lightens skin.

Charcoal



[Fig.8]

Synonym-Wood Coal,

Biological source-It is made from peat, coal,wood,coconut shell,petroleum.and mostly from Trema orientalis.







Description-colour-Black



odour-odourless,Aromatic

taste-Earthy,Smoky

Chemical Constituents- Carbon,Oxygen.

Uses-hair removing property ,remove dirt.

no.	Name	Diagram	Role
1.	Orange peel powder	 A close-up photograph of several bright orange peels, showing their textured, bumpy surface.	Reduce skin marks, Treat pimples, acne.
2.	Lemon peel powder	 A photograph showing several whole lemons and a pile of lemon zest on a wooden cutting board, with a zester nearby.	antimicrobial, , treat scurvy, skin astringents.
3.	Tulasi leaves powder	 A photograph of fresh, green Tulasi (holy basil) leaves on a dark surface.	Improve skin texture, Cleanser
4.	Neem leaves powder	 A photograph of fresh, green neem leaves, showing their characteristic pinnate structure.	Skin toner, lightens skin blemishes,
5.	Multani mitti	 A photograph of a mound of fine, yellowish-brown powder (Multani mitti) on a dark surface.	Nourishes skin, reduce oiliness
6.	Turmeric	 A photograph showing a small bowl of bright orange turmeric powder, some whole turmeric roots, and a sprig of green herb on a dark surface.	Reduce acne, Glowing skin

7.	Masoor dal		Expholiator,
8.	Charcoal		hair removing property ,remove dirt.

METHOD OF COLLECTION

Orange peel powder- Orange peel powder is obtained by crushing the shade-dried peels of oranges. All you have to do is keep collecting the peels instead of throwing them away. Then just air dry them. Once they are totally dry, just crush them into a superfine powder and you are done.

Lemon peel powder- Dehydrate the lemon peels until they are completely dry. The lemon peels are finished drying when they easily crack and snap in half, rather than bending. Use a blender, food processor, or coffee grinder to churn the dried lemon peels into powder.

Turmeric- The rhizome is usually harvested once its leaves start browning and falling off the plant in autumn. These finger-shaped rhizomes can be extracted from the soil

Tusi- Wash tulsi or basil leaves well Spread on a kitchen towel. ...After 3days of drying inside the room, leaves have lost moisture.

Neem- The leaf samples were washed with water to remove dust and foreign particles. The leaves were separated from the stems and were dried at 40–45 °C for 5 days. After drying, the leaves were ground into a powder by using a grinder. The leaf powder sample was kept in an amber coloured bottle.

Formulation

Sr no.	Name	composition	
		F1	F2
1.	Orange peel powder	1.8gm	1.7gm
2.	Lemon peel powder	1.8gm	2gm
3.	Tulasi leaves powder	1.8gm	1.8gm
4.	Neem leaves powder	1.8gm	1.5gm
5.	Multani mitti	1.8gm	2gm
6.	Turmeric	1.8gm	2gm
7.	Masoor dal	1.8gm	1.5gm
8.	Charcoal	1.8gm	2.5gm

Table 1: List of Ingredients

Evaluation parameters

Parameters	Result
Color	Greenish black
Tapped density	0.57gm/ml
Bulk density	0.74gm/cm ³
Car's index	22.11
Hausner ratio	1.29
Angle of repose	20.80

LOD	1%
Ash value	66
spreadability	Easily spreadable

Following evaluation parameters were performed to ensure superiority of prepared face Scrub:

1. **Physical Appearance:** Physical appearance of formulation was observed visually. In this test colour, odour, nature, and consistency were observed.
2. **Homogeneity:** Homogeneity of the formulation was inspected visually.
3. **pH:** pH of prepared scrub formulation was determined by using digital pH meter.
4. **Bulk density-**Prepared powder was poured into the 100 ml measuring cylinder and bulk density was calculated using following formula;

$$i. \text{ Bulk density} = \frac{\text{mass of the powder}}{\text{Bulk volume of a powder}}$$

5. **Tapped density-**Powdered granules poured into the 100 ml measuring cylinder were tapped for 100 times and then volume of a measuring was observed. Tapped density were calculated according to the following formula;

$$\text{Tapped density} = \frac{\text{mass of the powder}}{\text{Tapped volume of a powder}}$$

6. **Hausner's ratio** -Calculated by using the following formula;

$$i. \text{ Hausner's' ratio} = \frac{\text{tapped density}}{\text{Bulk density}}$$

7. **Carr's index** -Compressibility index is determined by following formula;

$$\text{Carr's index (\%)} = \frac{\text{Tapped density} - \text{Bulk density}}{\text{Tapped density}} \times 100$$

8. **Angle of repose** -Angle of repose were determined by using funnel method.

Following formula was used;

$$\Theta = \tan^{-1} [h/r]$$

Where,

h = height of powder cone formed.

r = radius of the powder formed Funnel method

9. **Determination of spreadability of scrub:** small amount of the scrub was placed on the glass slide and another glass slide was placed on the gel. A wooden weight of 20gm was placed on it the time required for the scrub to spread and the area was measured. The amount and the area of scrub on the glass slide represent the efficiency of spreadability,

i.e., Spreadability= $M \times L/T$

Where, M= Mass, L= Length, T=Time

10. **Irritability:** Little quantity of the scrub was applied on the surface of skin and kept for few minutes and check redness or irritation occurs or not.
11. **Washability:** Little quantity of scrub was applied over the skin and washed with water.
12. **Foamability:** Small amount of scrub was shaken with water in a measuring cylinder and the foam was measured.
13. **Stability study:** The formulation was stored at different temperature conditions or a period of 56 days and evaluated for parameters like colour, odour, pH, and consistency.

How to Apply

Make the paste by mixing final mixture of herbs with rose water or butter milk.

Apply paste locally on face for 10-15 mins.

Rub the face for 2-3 mins and wash with fresh water

Results of evaluation

Parameters	Result
Color	Greenish black
Tapped density	0.57gm/ml
Bulk density	0.74gm/cm ³
Car's index	22.11
Hausner ratio	1.29
Angle of repose	20.80
LOD	1%
Ash value	66
Spreadability	Easily spreadable

Table :2 Evaluation Parameters

DISCUSSION

The above results suggest that the new scrub formulation is safe to use, and the coffee powder used to get good effects as a scrubbing agent. The majority of the substances are natural, and there are low chances of adverse effects. It is suitable for all skin types, including dry, oily, and normal. It produces better results and leaves the skin looking radiant and bright. A less amount of the mixture was applied to the dorsal area of the hand for some times and found to be edema, non-irritating, with no redness or other adverse effects.

CONCLUSION

This study, we discovered that the Face Scrub had good aesthetic effects on human skin. The skin is the body's outermost organ, and it is regularly and directly exposed to prooxidants such as UV rays, medicines, and air pollution. Vitamin C is an important vitamin with antioxidant capabilities that is gaining popularity in the skin care industry. We discovered that Orange Peel powder, Lemon Peel powder, Tulsi leaves powder, neem leaves powder, Multani miti, Masoor dal, Turmeric, Charcoal and other components are excellent and efficient for the skin and may be used to stimulate blood circulation, reduce dark circles, acne, and scars by conducting and analyzing numerous formulations.

The face scrub is beneficial, economical & passed all evaluation Parameter.

Acknowledgement

I would like to thank all our college Faculty members for their kindness and support.

REFERANCE

1. Aburjai T, Natsheh FM. Plants used in cosmetics. *Phytother Res* 2003; 17:987-1000.
2. Aglawe SB*, Gayke AU, Khurde A, Mehta D, Mohare T, Pangavane A, Kandalkar S. Preparation and Evaluation of Polyherbal Facial Scrub. *J Drug Delivery and Therapeutics*.2019; 9[2]:61-63
3. Ashawat, M. S., Banchhor, M., Saraf S. and Saraf, S. (2009). Herbal Cosmetics: Trends in Skin Care Formulation. *Pharmacognosy Review*. 3 (5):82-89.
4. Aswal A, Kalra M, Rout A. Preparation and evaluation of polyherbal cosmetic cream. *Asian Pac J Trop Med* 2012; 5:83-88, 1-411.
5. Banchhor M, Ashawat MS, Saraf S, Saraf S. Herbal cosmetics: Trends in skin care formulation. *Phcog Rev* 2009; 3:82-9.
6. Bhanu PV, Shanmugam and Lakshmi PK. Development and Optimization of Novel Diclofenac Emulgel for Topical Drug Delivery. *Int J Comprehen Pharm*, 2011; 9(10):4.
7. Charulata T. Nemade*, Nayana Baste. Formulation and Evaluation of a Herbal Facial Scrub. *World J Pharm Res* 2014; Vol. 3, Issue 3, 4367-4371.
8. Chaudhari, V. A., Girase, M. V., Borase, B. G., Kailas, S. and Chaudhari, K. A. (2020).Formulation and Evaluation of Multipurpose Herbal Scrub in Gel Form Using *Limonia acidissima*. *International Journal of Research and Analytical Review*. 7 (2):637-649.
9. Daud, F. S., Pande, G., Joshi, M., Pathak, R. and Wankhede, S. (2013). A Study of Antibacterial Effect of Some Selected Essential Oils and Medicinal Herbs against Acne Causing Bacteria. *International Journal of Pharmaceutical Science Invention*. 2 (1):27-34.

-
10. Dureja, H., Kaushik, D., Gupta, M., Kumar, V. and Lather, V. (2005). Cosmeceuticals: An Emerging Concept. *Indian Journal Pharmacology*. 37:155-159.
 11. Fatima Grace X, Anbarasan B, Kanimozhi T, Shanmuganathan S*. Preparation and Evaluation of Deep Cleansing Exfoliator. *Asian J Pharm Clin Res* 2018; Vol. 11, Issue 7.
 12. Fatima, Grace X., Anbarasan B., Kanimozhi T. and Shanmuganathan S., 2018 Preparation And Evaluation Of Deep Cleansing Exfoliator, *Asian Journal Of Pharmaceutical And Clinical Research*, 11 (7), Page no. 356-359.
 13. Fuizz and C.Richard, 2012. Transdermal delivery system. US Patent 5736154 .
 14. Garg, A., Agarwal, D. and Garg, S. Spreading of semisolid formulation. *Pharm Tech*. 2002; 9:89-105.
 15. Garg, A., Agarwal, D. and Garg, S. Spreading of semisolid formulation. *Pharm Tech*. 2002; 9:89-105.