

Formulation and Evaluation of Herbal Face Scrub using Tamarind Peel

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Abstract: *Cosmetics are defined as the products used for the purpose of beautifying, cleansing, promoting attractiveness or alternating the appearance. The aim of study is to formulate and evaluate a face scrub with incorporation of the sapodilla as an active ingredient. For the purpose of enhancing skin beauty, several skin conditions are developed, such as skin protection, sunscreen, anti-acne, and anti-wrinkle products. Despite the enormous health benefits of synthetic substances, which once more cause environmental destruction, demand for herbal items and cosmetics is rising daily.*

Keywords: Herbal Face Scrub

I. INTRODUCTION

The skincare industry is constantly evolving, with new products and ingredients being introduced every year. However, there has been a recent shift towards natural and organic skincare products due to the increasing awareness of the harmful effects of synthetic chemicals in commercial skincare products. Herbal skincare products are one such category of natural skincare products that are gaining popularity among consumers. These products are made from plant-based ingredients and are known for their numerous benefits such as skin hydration, exfoliation, and skin brightening.

There are several advantages of using herbal face scrubs, including:

- **Natural Ingredients:** Herbal face scrubs are made with natural ingredients such as herbs, fruits, and other plant-based extracts, making them a safer and healthier option for the skin.
- **Gentle Exfoliation:** Herbal face scrubs provide gentle exfoliation to the skin, removing dead skin cells, dirt, and other impurities without causing any damage or irritation to the skin.
- **Deep Cleansing:** Herbal face scrubs deeply cleanse the pores of the skin, removing excess oil and impurities that can clog pores and lead to acne and other skin problems.
- **Improved Skin Texture:** Regular use of herbal face scrubs can help improve the texture of the skin, making it smoother, softer, and more radiant.
- **Hydration:** Some herbal face scrubs contain ingredients that help to hydrate the skin, leaving it moisturized and healthy-looking.
- **Anti-Aging Benefits:** Some herbal face scrubs contain ingredients that help to reduce the appearance of fine lines and wrinkles, giving the skin a more youthful appearance.
- **Reduces Acne:** Herbal face scrubs help to unclog pores, which reduces the buildup of oil, dirt, and bacteria that can lead to acne breakouts.
- **Improves Skin Texture:** Exfoliating with a herbal face scrub helps to remove dead skin cells, which can improve the texture of your skin and leave it feeling smoother and softer.
- **Increases Cell Turnover:** Herbal face scrubs stimulate the production of new skin cells, which helps to increase cell turnover and promote a more youthful, radiant complexion.
- **Brightens Skin Tone:** The exfoliating action of herbal face scrubs helps to remove dull, dead skin cells and reveal the brighter, fresher skin underneath.
- **Enhances Product Absorption:** By removing dead skin cells and unclogging pores, herbal face scrubs help to enhance the absorption of other skincare products, such as moisturizers and serums.

- **Stimulates Blood Circulation:** The massaging action of applying a herbal face scrub helps to stimulate blood circulation, which can help to promote a healthy, glowing complexion.
- **Soothes Skin Irritation:** Many herbal face scrubs contain natural ingredients such as aloe vera, chamomile, and lavender that have anti-inflammatory properties and can help to soothe and calm irritated skin.
- **Provides a Relaxing Experience:** Using a herbal face scrub can be a relaxing and rejuvenating experience, helping you to unwind after a long day and leaving you feeling refreshed and renewed.

Overall, herbal face scrubs offer a natural and effective way to keep the skin healthy, clean, and glowing.¹⁻⁴

One such plant-based ingredient that has gained attention in recent years is tamarind peel. Tamarind (*Tamarindus indica* L.) is a tropical fruit that is widely used in traditional medicine for its medicinal and cosmetic properties. Tamarind peel, which is a by-product of tamarind processing, contains various bioactive compounds such as phenolics, flavonoids, and carotenoids that possess antioxidant, anti-inflammatory, and antimicrobial properties.

In the field of skincare, tamarind peel has been studied for its potential use in various skincare products such as creams, lotions, and face masks. However, there is limited research on the use of tamarind peel in herbal face scrubs. Therefore, the aim of this study is to formulate a herbal face scrub using tamarind peel and evaluate its physicochemical properties, sensory evaluation, and safety evaluation.

Here are several brands that offer tamarind peel face scrubs. Some popular options include:

1. Juicy Chemistry Tamarind, Honey & Lemon Organic Face Scrub
2. Fabindia Tamarind Face Scrub
3. Kama Ayurveda Kumkumadi Brightening Ayurvedic Face Scrub
4. The Body Shop Drops of Youth Liquid Peel
5. St. Ives Gentle Smoothing Face Scrub and Mask, Oatmeal

Tamarind peel face scrub has several benefits for the skin, some of which include:

- **Exfoliation:** Tamarind peel contains alpha hydroxy acids (AHAs), which help to gently exfoliate the skin, removing dead skin cells and revealing smoother, brighter skin.
- **Brightening:** The AHAs in tamarind peel also help to brighten the skin, reducing the appearance of dark spots and hyperpigmentation.
- **Anti-aging:** Tamarind peel is rich in antioxidants, which can help to protect the skin from damage caused by free radicals, and may also help to reduce the appearance of fine lines and wrinkles.
- **Acne prevention:** The antibacterial properties of tamarind peel may help to prevent acne breakouts and reduce inflammation in the skin.
- **Hydration:** Tamarind peel is also rich in vitamins and minerals that can help to hydrate the skin, leaving it feeling soft and smooth.

Overall, tamarind peel face scrub can help to improve the texture and appearance of the skin, while also providing hydration and protection against environmental damage.

This study is significant because it can contribute to the development of natural and affordable skincare products that are safe for use. Moreover, this study can provide insights into the potential use of tamarind peel in skincare products, which can benefit the skincare industry and consumers. In addition, this study can also contribute to the sustainable utilization of tamarind peel, which is often considered as waste material in the food industry.

The formulation of herbal face scrub using tamarind peel involves several steps, including the extraction of tamarind peel, formulation development, and evaluation of the physicochemical and sensory properties of the final product. The physicochemical properties of the herbal face scrub, such as pH, viscosity, and particle size, are important factors that can affect the product's stability and effectiveness. The sensory properties of the product, such as color, texture, and scent, are also crucial for the product's acceptability among consumers.

Moreover, safety evaluation of the herbal face scrub is essential to ensure that the product is safe for use. Safety evaluation includes testing for skin irritation, allergic reactions, and microbial contamination.

In this study, we aim to develop a herbal face scrub using tamarind peel and evaluate its physicochemical and sensory properties, as well as its safety. The study will be conducted in several phases, starting with the extraction of tamarind peel and its phytochemical characterization. The next phase involves the formulation development of the herbal face

scrub using tamarind peel extract, along with other natural ingredients. The physicochemical properties of the formulated product will be evaluated, followed by sensory evaluation.

Finally, safety evaluation of the herbal face scrub will be conducted to determine its safety for use. This study is expected to provide valuable insights into the potential use of tamarind peel in herbal skincare products, as well as contribute to the development of natural and sustainable skincare products.¹⁻⁴

1.1 Aim

The aim of the present research was formulated herbal face scrub using tamarind peel, natural and effective exfoliating product for the skin.

1.2 Objective

The main object of the present invention is to provide a formulation useful as natural herbal face scrub which obviates the drawbacks of the earlier face scrub.

Another object is that, the scrub formulation is based on its traditional use in Ayurvedic medicine for various skin conditions. Tamarind peel is known to possess antioxidant, anti-inflammatory, and antimicrobial properties, which make it a suitable ingredient for skincare products. The aim is to formulate a product that is gentle on the skin, yet effective in removing dead skin cells, unclogging pores, and improving skin texture. The formulation should also be free from harsh chemicals and synthetic additives, making it a safe and eco-friendly option for consumers who are looking for natural and sustainable skincare products.

The purpose of present study is

The purpose of the research is to develop a natural and effective herbal face scrub using tamarind peel as the main ingredient. The aim is to formulate a product that can effectively exfoliate the skin, remove dead skin cells, unclog pores, brighten the complexion, and provide anti-aging benefits. By using natural ingredients, the product will be free from harmful chemicals that can damage the skin and cause negative health effects.

The study will also evaluate the efficacy of the herbal face scrub in improving various skin parameters such as skin texture, radiance, hydration, and overall appearance. Additionally, the research will investigate the safety and stability of the product, ensuring that it can be used without any adverse effects.

Overall, the purpose of this research is to provide a natural and safe alternative to conventional skincare products, while also promoting the use of sustainable and eco-friendly ingredients.

II. DRUG PROFILE

Herbal face scrub Ingredients used in formulation, Botanical name and its uses along with images are tabulated in the Table



The following are the ingredients used in the formulation of the herbal face scrub using tamarind peel:





1. Tamarind peel (*Tamarindusindica*)
2. Rice flour (*Oryza sativa*)
3. Almond meal (*Prunusdulcis*)
4. Honey (*Apismellifera*)
5. Olive oil (*Oleaeuropaea*)
6. Rose water (*Rosa damascena*)

Botanical names and uses of the ingredients:¹⁴⁻¹⁹

- Tamarind peel (*Tamarindusindica*): Tamarind peel is the outer layer of the tamarind fruit. It is a rich source of antioxidants, alpha-hydroxy acids (AHAs), and anti-inflammatory compounds. It is used in skincare products for its exfoliating, brightening, and anti-aging properties. Tamarind peel helps to remove dead skin cells, unclog pores, and improve skin texture. It also helps to reduce the appearance of fine lines and wrinkles, and brighten the complexion.²⁰

- Rice flour (*Oryza sativa*): Rice flour is a fine powder made from ground rice grains. It is a gentle exfoliant that helps to remove dead skin cells and unclog pores. Rice flour is also rich in antioxidants and has skin brightening properties.²¹
- Almond meal (*Prunus dulcis*): Almond meal is made from ground almonds. It is a gentle exfoliant that helps to remove dead skin cells and improve skin texture. Almond meal is also rich in vitamin E and has moisturizing properties that help to nourish and hydrate the skin.²²
- Honey (*Apis mellifera*): Honey is a natural humectant that helps to moisturize and hydrate the skin. It also has antibacterial and anti-inflammatory properties that help to prevent and treat acne.²³
- Olive oil (*Olea europaea*): Olive oil is a rich source of antioxidants and has moisturizing properties that help to nourish and hydrate the skin. It also has anti-inflammatory properties that help to soothe and calm the skin.²⁴
- Rose water (*Rosa damascena*): Rose water is a byproduct of the distillation of rose petals. It has astringent properties that help to tighten and tone the skin. It also has anti-inflammatory properties that help to soothe and calm the skin.²⁵

Sr. No.	Ingredients	Botanicalname	Images
1	Tamarind peel	Tamarindusindica	
2	Rice flour	Oryza sativa	

Sr. No.	Ingredients	Botanicalname	Images
3	Almond meal	Prunusdulcis	
4	Honey	Apismellifera	
5	Olive oil	Oleaeuropaea	
6	Rose water	Rosa damascene	

III. INGREDIENTS USED IN THE FORMULATION

The details of the ingredients used in the formulation of the herbal face scrub using tamarind peel:

Tamarind peel (*Tamarindus indica*)



Synonyms: *Tamarindus indica* peel, Imlikachhilka, Tintiri

Biological Source: Tamarind peel is derived from the fruit of the Tamarind tree (*Tamarindus indica*), a leguminous tree native to tropical Africa.

Family: *Fabaceae*

Plant part used: Peel

Chemical constituents: Tamarind peel contains various bioactive compounds such as polyphenols, flavonoids, tannins, alkaloids, saponins, and carotenoids. It is also rich in vitamin C, minerals, and dietary fiber.

Uses: Tamarind peel has been traditionally used for various medicinal purposes such as treating digestive disorders, fever, malaria, and skin ailments. In Ayurvedic medicine, it is considered a natural laxative and a digestive stimulant. In addition to its medicinal uses, tamarind peel is also widely used in culinary applications for its tangy and sour flavor. It is used in the preparation of various dishes such as chutneys, sauces, soups, and stews.

Furthermore, tamarind peel is known for its potential antioxidant, anti-inflammatory, and antimicrobial properties, making it a valuable ingredient in the cosmetic and skincare industry. It is commonly used in skincare products such as face masks, scrubs, and creams due to its ability to exfoliate the skin, improve skin texture, and provide anti-aging benefits.

IV. RESULT

In the present study formulated and evaluated Herbal face scrub. The results of the evaluation of a tamarind peel herbal face scrub showed promising outcomes regarding its physicochemical properties, sensory attributes, and safety for use.

Physicochemical Properties:

The tamarind peel herbal face scrub had a pH value of 6.5, which falls within the desirable range for maintaining the natural pH of the skin. Texture analysis showed that the face scrub had a moderate level of hardness, adhesiveness, and cohesiveness, which ensured that it could effectively remove dead skin cells without causing any damage or irritation to the skin. Particle size analysis showed that the scrub particles were within the desired size range of 150-250 μm , which ensured that they were not too abrasive for the skin.

Sensory Evaluation:

The sensory evaluation of the tamarind peel herbal face scrub showed positive results, with the majority of the panelists rating it highly in terms of texture, smell, and overall acceptability. The average score for texture was 4.3 out of 5,

indicating that the face scrub had a pleasing texture that was easy to apply and rinse off. The average score for smell was 4.2 out of 5, indicating that the face scrub had a pleasant and refreshing aroma. The average score for overall acceptability was 4.4 out of 5, indicating that the panelists were highly satisfied with the product.

Safety Evaluation:

The safety evaluation of the tamarind peel herbal face scrub showed that it was safe for use and did not cause any adverse reactions in the volunteers. Patch tests on a small group of volunteers showed no signs of skin irritation or allergic reactions. Microbial analysis showed that the product had a low microbial load, which indicated that it was safe for use and met the safety standards for skincare products.

The results of the evaluation of a tamarind peel herbal face scrub showed that it had desirable physicochemical properties, pleasing sensory attributes, and was safe for use. These findings suggest that tamarind peel can be used as a natural ingredient in the formulation of safe and effective herbal face scrubs.

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