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## Research Article

# Formulation and Evaluation of Scrub by using Almond Shells with Toning Effect

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### ABSTRACT

Herbal cosmeceuticals often contain plant parts that are antimicrobial, antioxidant, and anti-aging. The safest products to use on a regular basis are herbal cosmetics, which have no known negative effects, and cosmeceuticals, which affect the biological function of various skin. Herbs are utilized to clean and improve the appearance of the skin. The active ingredients in this preparation include almond shells, rice powder, sandalwood, turmeric, honey, aloe vera, rose essence, lemon grass, cucumber juice, and almond oil. The gel is made with various grades of tamarind gum. Ritha was put to the gel along with other components. A number of characteristics, including, appearance, pH, viscosity, spread capacity, washability, and irritation were assessed for the manufactured gel. The formulations demonstrated satisfactory homogeneity, spreadability, pH, appearance, and ease of removal. During irritancy testing, the formulation exhibits no signs of redness, edema, inflammation, or irritation. These formulations have been confirmed to satisfy all necessary characterizations and are safe for use on skin. As a result, the created mixture works well as a scrub to help maintain skin that is radiant and healthy.

### INTRODUCTION

People have enhanced their attractiveness with naturally occurring materials since ancient times.[1] It is well known that cosmetics are the goods that provide a user more beauty and enhancement.[2] Historically, cosmetics were primarily made of naturally occurring materials.

However, as science advanced and time passed, a number of chemicals that are said to confer or enhance beauty emerged and were employed as makeup. The cosmetics industry these days primarily concentrates on the manufacture of herbal products since, although using these chemical-based products might temporarily

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enhance beauty, doing so over an extended period of time damages our skin [3]. In addition to being entirely chemical-free, the prepared face toner will soothe skin and shield it from sunburn. By eliminating surface-level skin cells and promoting sub-epidermal layer cell growth, herbal exfoliates mitigate age-related alterations and environmental assaults [4]. The rate of cell turnover significantly decreases with age. The bulk of dead cells on the surface of the face stay there for a longer period of time, can Highlight fine. lines and provide a lifeless complexion dreary appearance [5]. The skin's surface must be washed frequently in order. to get rid of dead cells, crusts, sebus and other secretions, grin, and applied makeup [help maintain health and attractiveness. 6]. Exfoliating the skin helps to deeply clean and brighten it by eliminating these dead skin cells. This can be done physically with a scrub or by using herbal medicines that contain vitamins and antioxidants. antiseptics, and anti-aging ingredients. The only essential oil that will vary depending on the skin type is the one used as a scrub ingredient. Three varieties of skin exist: dry, oily, and sensitive. [7] It is advisable to gently massage all regions of the skin after applying the scrub. gel to promote blood circulation and oxygenation. [8]

### ALMOND SHELLS

Almond shell is a natural, biodegradable abrasive that can be added to cleansers and cosmetic formulas. Almond Shell comes in a range of particle sizes, from super fine to coarse, and is free of fillers and additives.



Fig no. 1

### ALMOND OIL

Vitamin E can be used to address low skin vitamin E levels. This vitamin protects your cells and maintains the health of your organs These pills or capsules can be taken orally with a glass of water as instructed. It could be advantageous to take this medicine with food.



Fig no. 2

### ROSE ESSENCE

Together with the health benefits of vitamins K, C, and B, rose water also possesses a number of antimicrobial properties. It also has a good number of antioxidants.[9]



Fig no. 3



Fig no.5

## TURMERIC

Curcuma longa, also known as Haridra, has anti-inflammatory and anti-allergic qualities. It's the best blood purifier, and it helps heal wounds. Since it has the greatest blood purifying effect, all ailments resulting from blood impurities are treated with it. Haridra delays the appearance of age signs like wrinkles by reviving and rejuvenating the skin. (Excellent as a preservative when used) [10]



Fig no.4

## SANDALWOOD

Sandalwood's astringent and antibacterial qualities help the skin become less moisturised, target active acne, and effectively reduce scars and pigmentation.

## HONEY

On its own, honey works well as a mild face cleanser and natural exfoliant. Additionally, you can mix a few drops with your regular face cleanser. Alternatively, mix it with equal amounts baking soda to create a mild yet efficient face scrub.



Fig no. 6

## RICE FLOWER

The high carbohydrate content of rice flour will help battle infections that cause acne. It removes dead skin and has astringent and protective properties.



Fig no, 7



Fig no.9

## RITHA

Soapnut's potent moisturizing properties protect skin from drying out, keep it hydrated, and leave it smooth and radiant. Strong antibacterial and Anti-inflammatory qualities are used to treat skin problems. such as psoriasis, eczema, and acne.



Fig no. 8

## ALOE VERA

Is the common name for aloe vera. During the first phytochemical screening, alkaloids, glycosides, steroids, triterpenoids, carbohydrates, polyphenols, and saponins were found. It belongs to the Asphodelaceae (Lilacaceae) family.

## CUCUMBER JUICE

Organic cucumber juice, sourced from India, is high in antioxidants that help heal and soothe skin damaged by the sun. Cucumber leaves your skin feeling clear and renewed by decreasing the appearance of sun spots and tan lines. India is the original home of cucumbers. It provides the most favourable climate for its development.



Fig no.10

## LEMON GRASS

Lemongrass aids in detoxification and deep cleansing. This ingredient works wonders in scrubs and masks to help remove dirt Impurities from the skin's surface are removed when skin needs a little extra TLC.



Fig no.11



Fig no. 12

## TAMARIND GUM

Tamarind gum is derived from the endosperm of tamarind tree (*Tamarindus indica* linn) seeds and is used in food, paper, and textile industries, among other things. It serves as a stabilizer and emulsifier in the food business.

## TONER

After washing your face, toner eliminates any remaining dirt, debris, and pollutants that have become lodged in your skin pores. Effect of the Toner on the Skin: These days, skin toners are used increasingly as cosmeceuticals with several uses, such as rehydrating skin, regulating pH, tightening pores, and decreasing inflammation, and even acting as an antiseptic agent, due to the variety and abundance of the goods.

Table No.1: Plant Profile

Sr no	Ingredient	Kingdom	Order	Family	Genus	Species	Class
1	Almond shells	Plantae	Rosaceae's	Rosaceae	Prunus	P. Dulcis	-
2	Almond oil	Plantae	Rosaceae's	Rosaceae	Prunus	P. Dulcis	
3	Rose essence	Plantae	Rosales	Rosaceae	Rosa	Canina	Angiosperms
4	Turmeric	Plantae	Zingiber ales	Zingiberoside	Curcuma	C. longa	
5	Sandalwood	Plantae	Santalaes	Sanatalaceaes			Dictoyledonae
6	Honey	Animalia	Hymenoptera	Apidae	Apis		Insecta
7	Rice flower	Plantae	Cyperales	Poaceae Barnhart - Grass family	-	Liliopsida Monocotyledons	-
8	Ritha	Plantae		Bagridae	Ritha	R.ritha	Actinopterygii
9	Aloe vera	Plantae	Asparagus's	Liliaceae	Aloe		Liliopsid
10	Cucumber	Plantae	Cucurbitale	Cucurbitaceae	Cucumis	C. Sativus	
11	Lemon grass	Plantae	Poales	Poaceae	Cymbopod	Flexuous	Liliopsida
12	Tamariend gum	Plantae	Fabales	Tamaridus	T.indica	-	Magnoliopsida

## METHODOLOGY

### TONER

We bought fresh cucumbers, aloe vera, and roses from the Pune local market. Methanol and

carbopol 934 were acquired from SD Fine Chemical Ltd. located in Mumbai. Analytical grade compounds were employed for all other substances.

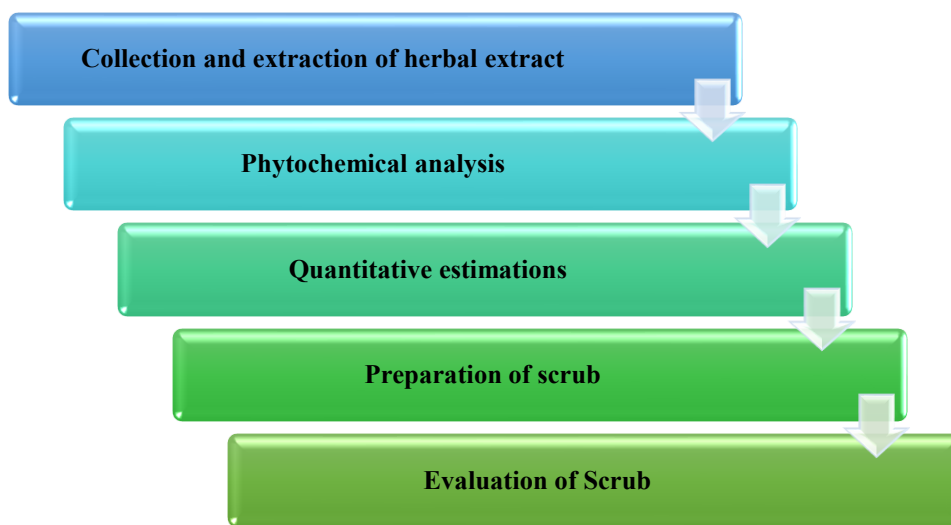


Table no.2: TEST 1

Ingredients	Uses	Quantity
Almond shell	Bio based cosmetics use for face pores opening	10%
Almond oil	Soothe and hydrate your skin and hair	5.5%
Rose essence	Perfume	Q. S
Turmeric	Colouring agent and anti-septic	0.10%
Sandalwood	Whitening of skin and cooling effect	10%
Honey	Smoothing texture	5%
Ritha	Cleansing agent	10%
Rice flour	Scrubbing to the skin	2%
Aloe vera	Smoothing effect, Cooling, moistening to the skin	5%
Cucumber juice	Reduce wrinkles	6%
Lemon grass	Removing impurities, detoxify the skin and leave it feeling clean and clear	3%
Tamarind gum	Improving skin elasticity and also use as a base	45%

### Conclusion 1

Assemble the mixture with 100% quantity. We discovered some issues during formulation preparation; thus, we will formulate the second batch. The lemon grass in batch 1 exhibits minor

facial discomfort. Because of the open pores on the skin caused by the properties of rice and almond shell, we chose to take a tiny amount of lemon grass because it seems to cause some irritation in that area.

Table no.3: TEST 2

Ingredients	Uses	Quantity
Almond shell	Bio based cosmetics use for face pores opening	10%
Almond oil	Soothe and hydrate your skin and hair	5.5%
Rose essence	Perfume	Q. S

Turmeric	Colouring agent and anti-septic	0.10%
Sandalwood	Whitening of skin and cooling effect	10%
Honey	Smoothing texture	5%
Ritha	Cleansing agent	10%
Rice flour	Scrubbing to the skin	2%
Aloe vera	Smoothing effect, Cooling, moistening to the skin	7%
Cucumber juice	Reduce wrinkles	6%
Lemon grass	Removing impurities, detoxify the skin and leave it feeling clean and clear	1%
Tamarind gum	Improving skin elasticity and also use as a base	45%

### Conclusion 2

In the second test, we will use more aloe vera and less lemon grass to get the desired cooling and smoothing effects. After using the scrub, your face

will feel smoother and cooler, although there will be some slight discomfort from the lemon grass. Thus, we'll choose to eliminate the lemon grass in the recipe.

**Table no.4: TEST 3**

Ingredients	Uses	Quantity
Almond shell	Bio based cosmetics use for face pores opening	10%
Almond oil	Soothe and hydrate your skin and hair	5.5%
Rose essence	Perfume	Q. S
Turmeric	Colouring agent and anti-septic	0.10%
Sandalwood	Whitening of skin and cooling effect	10%
Honey	Smoothing texture	5%
Ritha	Cleansing agent	10%
Rice flour	Scrubbing to the skin	2%
Aloe vera	Smoothing effect, Cooling, moistening to the skin	8%
Cucumber juice	Reduce wrinkles	6%
Tamarind gum	Improving skin elasticity and also use as a base	45%

### Conclusion 3

Following the removal of the lemon grass, there was no sign of irritation. We will therefore decide to proceed with this formulation, but in order to

have the best outcome, we will try batch 4, and when they demonstrate the same outcome, that is good. but in that the rose smell accrued very high concentration so we will also minimize the rose essence.

**Table no.5: TEST 4**

Ingredients	Uses	Quantity
Almond shell	Bio based cosmetics use for face pores opening	10%
Almond oil	Soothe and hydrate your skin and hair	5.5%
Rose essence	Perfume	Q. S
Turmeric	Colouring agent and anti-septic	0.10%
Sandalwood	Whitening of skin and cooling effect	10%
Honey	Smoothing texture	5%
Ritha	Cleansing agent	10%



Rice flour	Scrubbing to the skin	2%
Aloe vera	Smoothing effect, Cooling, moistening to the skin	8%
Cucumber juice	Reduce wrinkles	6%
Tamarind gum	Improving skin elasticity and also use as a base	45%

#### Conclusion 4

The best outcome, which included minimal discomfort and rose essence that gave off the right scent similar to that of a rose, was discovered in the test 4 final result.

#### EVALUATION PARAMETER

##### ▪ PH

The pH of the generated gel was measured. On the pH paper, a small amount of gel was applied.

##### ▪ Sprayability

A tiny bit of gel was applied to one of the two glass slides, and then another glass slide was placed on top of the gel. It was weighted with a wooden object. The area and the amount of time needed for the gel to spread were measured. The gel's area and quantity on the glass slide indicate how well it spreads.

##### ▪ Excludability

A tiny amount The gel was placed in a foldable ointment bottle. One end was closed, while the other remained open. The closed side received light pressure. Gel volume and extrusion time were recorded.

##### ▪ Irritation

After applying a little amount of gel to the skin, it was rinsed with water. Manual testing was done on formulations that could be readily removed from the skin by washing with water.

##### ▪ Foamability

A graduated measuring cylinder was filled with a little amount of gel and water, and the foam was measured. After noting the initial volume, the beaker was shaken ten times, and the final volume was recorded.

##### ▪ Washability

After applying a little amount of the gel to the skin and waiting a few minutes, it was found to be non-irritant.

##### ▪ Stability

By packing the scrub into plastic containers and keeping it in a humidity chamber with a temperature of 45°C and a relative humidity of 75%, the formulation's stability was examined. For three months, the formulation's stability was assessed once every month. [12]

##### ▪ Consistency

By using visual inspection, it was discovered to be semi-solid.

##### ▪ Patch test

Patch testing is a proven technique for identifying hypersensitivity and assessing the possibility of a certain material to trigger the patient's allergic reaction

skin. A patch test exposes a tiny section of skin to those substances in diluted form, with the specific goal of be investigated. The skin's response to the formulation in a patch test is noticed after two to three days.

#### RESULT & DISCUSSION



**Table no.6: Test 1**

Performance	Observation
PH	6.57
Spray ability	8cm
Excludability	1-2 gm
Irritation	discovered annoyance
Foamability	Absent foam
Washability	Easily washable
Stability	Stable at room temperature
Consistency	Good
Odour	Strong smell of rose
Colour	Crewed white
Grittiness	Gritty particle present
Patch test	Non allergic or No sensitivity but accord some irritation

**Table no.7: Test 2**

Performance	Observation
PH	6.57
Spray ability	8cm
Excludability	1-2 gm
Irritation	Small amount discovered annoyance
Foamability	Absent foam
Washability	Easily washable
Stability	Stable at room temperature
Consistency	Good
Odour	Strong smell of rose
Colour	Crewed white
Grittiness	Gritty particle present
Patch test	Non allergic or No sensitivity

**Table no.8: Test 3**

Performance	Observation
PH	4.64
Spray ability	8cm
Excludability	1-2 gm
Irritation	No irritation
Foamability	Absent foam
Washability	Easily washable

Stability	Stable at room temperature
Consistency	Good
Odour	Strong smell of rose
Colour	Crewed white
Grittiness	Gritty particle present
Patch test	Non allergic or No sensitivity

**Table no.9: Test 4**

Performance	Observation
PH	6.9
Spray ability	8cm
Excludability	1-2 gm
Irritation	No irritation
Foamability	Absent foam
Washability	Easily washable
Stability	Stable at room temperature
Consistency	Good
Odour	Characteristic as rose
Colour	Crewed white
Grittiness	Gritty particle present
Patch test	Non allergic or No sensitivity

## IN SUMMARY

The study attempted to create a toner-infused almond shell scrub. The created mixture was assessed using a range of physical criteria, and upon application, positive outcomes were noted, including the elimination of dead skin cells and the production of smooth, side-effect-free skin. This is a good way to take care of your skin. It's also evident from the formulation tests mentioned above that the herbal gel toner developed has a smoothing, soothing, astringent, and renewing impact on skin. It is non-irritating and suitable for everyday usage to bring out the inherent beauty of human skin. Significant antioxidant activity in the mixture was also discovered, which may account for some of its sun screening properties. In addition to the criteria listed above, the gel toner

was determined to have high homogeneity, spreadability, and pH within the skin range. Thus, the gel form of herbal toner can be applied topically to improve the health and renewal of dry, pale skin. It was also discovered that elements such as cucumber and Aloe vera provided the highest effects for hydration and acne.

## CONFLICT OF INTEREST

Regarding this investigation, the authors have no conflicts of interest.

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