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Formulation and Evaluation of Rice Face Cream

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Abstract: ***The skin healing benefits of rice have been. known for centuries. Rice is potentially be incorporated into cosmetic formulations. However no scientific evidence supports their role in skin care product Aloe vera is medicinal plant. It is used as traditionally from ancient year in various herbal medicines such Ayurveda ,siddha, and Homeopathic cosmetics and some medicinal products are made up from the mucilaginous tissue in the centre of aloe vera leaf and called aloe vera gel Aloe vera contains 75 potentially active constituents. The aim of this project is to design and develop rice face. Cream, and to which for the brightness of skin.***

Keywords: Rice, aloe vera , traditionally , cosmetic.

I. INTRODUCTION

Rice (Oryza sativa) extract and other natural components are used to make rice face cream, a form of facial moisturiser. Due to its many skin-friendly properties, including its capacity to moisturise, brighten, and shield the skin from environmental damage, rice has been utilised in skincare treatments for ages.

A study in the Journal of Cosmetic Science found that rice extract has a high concentration of antioxidants that can help shield the skin from free radical damage brought on by UV rays and other environmental stressors. [(1)] Rice extract is a well-liked component in skincare products for sensitive skin since these antioxidants also have anti-inflammatory qualities that help relax and soothe the skin.

Rice extract has antioxidant capabilities in addition to having elements that can aid to improve the tone and texture of the skin. Gamma-oryzanol is one such substance that has been demonstrated to increase skin suppleness and lessen the visibility of fine lines and wrinkles. [(2)]

The addition of rice extract to other all-natural ingredients like shea butter, jojoba oil, and vitamin E can produce a luscious and nutritious face cream. Rice face cream can aid in moisturising and hydrating the skin, leaving it feeling supple, luminous, and smooth.

All things considered, rice face cream is a fantastic option for anyone searching for a healthy and efficient approach to take care of their skin. It is understandable why rice extract has gained popularity as a component in skincare products all over the world given its many benefits and mild formulation.

A study that appeared in the Journal of Cosmetic Dermatology demonstrated that rice extract had anti-aging benefits for the skin by increasing skin suppleness and minimising the visibility of wrinkles and lines of aging [(3)]. Another study found that rice bran extract provided moisturising and illuminating benefits on the skin, making it an excellent component for beauty products.[4]

To enhance the skincare advantages of rice face creams, these components are frequently combined with hyaluronic acid, niacinamide, and glycerin. They are safe for all types of skin, even fragile skin, and are suitable for use as a daily moisturiser or as a remedy for dehydrated or dry skin.



Fig1:Rice (Oryza sativa)

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Aloe vera is a cactus-like plant that grows easily in hot, arid climates and is farmed in enormous amount. Aloe barbadensis is a member of the 300 species-strong Liliaceae family. Aloe vera gel, a mucilaginous substance found in the centre of aloe vera leaves, is used to make beauty products and some medicines. Aloe vera gel contains no Antraquinone. They are in charge of aloes' potent laxative effects. Nevertheless, antraquinone may be present in whole leaf extract. [5] There are 75 potentially active components in aloe vera, including vitamins, enzymes, minerals, sugars, saponins, and amino acids. [6]



Fig.2 :Aloe vera (barbadensis miller)

A. Objective

The objective of rice face cream is to provide nourishment, hydration, and protection to the skin. Rice contains various nutrients and antioxidants that can help to improve the overall health and appearance of the skin. Rice face cream is formulated to moisturize the skin, reduce the appearance of fine lines and wrinkles, and improve the skin's elasticity and firmness. It may also help to brighten the complexion and reduce the appearance of dark spots and uneven skin tone. In addition, rice face cream may contain ingredients such as sunscreen or other protective agents to shield the skin from environmental stressors such as UV rays, pollution, and free radicals. Overall, the objective of rice face cream is to promote healthy, radiant, and youthful-looking skin.

II. MATERIALS AND METHODS

A. Rice



- Common name :Asian rice ,Indica rice.
- Biological name: Oryza sativa
- Family: Poaceae.
- Chemical constituent: Starch, protein, lipids (fats), dietary fiber, vitamins, and minerals.

Uses:[7]

- Exfoliation[facial scrubs]
- Skin brightening
- Moisturizing
- Anti-aging

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B. Aloe vera



- Common name : Aloe vera.
- Biological name: Aloe barbadensis miller.
- Family: Asphodelaceae (Liliaceae).
- Chemical constituent: Aloe vera contains 75 potentially active constituents: vitamins, enzymes, minerals, sugars, lignin, saponins, salicylic acids and amino acids.

Uses

- Acne treatment
- Skin moisturizing
- Wound healing
- Sunburn relief

C. Extraction Processes

1) Extraction Process of Rice[8]

a) Cleaning and Soaking: Cleaning the rice grains to get rid of any impurities like dirt, stones, or other foreign objects is the first stage in the extraction of rice starch. The rice is then given a prolonged soak in water to soften the grains. To make sure that the starch can be easily extracted from the grains, this step is crucial.

b) Grinding: After the rice has been soaked, it is milled or blended into a fine paste. To create a slurry, the paste is combined with water. The rice grains are broken down during the grinding process, releasing starch granules that are subsequently suspended in the slurry.

c) Separation: The starch and protein in the slurry are then divided into two groups. By letting the slurry to settle, the heavier starch and protein particles sink to the bottom and float to the top, respectively. The pH and temperature of the slurry can be changed to enhance the separation procedure.

d) Washing: After that, the starch is thoroughly washed to get rid of any leftover protein fragments. To achieve this, add water to the starch and then wait for it to settle. After draining the water, the starch is what is left over. The starch's purity is increased during the washing process, which also helps to remove contaminants.

e) Drying: The drying of the starch completes the extraction process. The starch is commonly dried in an oven or by spreading it out on a flat surface and letting it air dry. The starch can be pounded into a fine powder and utilized in a variety of food products once it has dried. To improve the starch's shelf life and get rid of any remaining moisture, drying is crucial.

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Fig.3

2) Extraction Process of Aleo Vera Gel.[9]

a) Harvesting: Harvesting the aloe vera leaves is the first stage in the extraction process. For gel extraction, only full grown leaves that are at least 3–4 years old should be utilised.

b) Washing: To get rid of any dirt or debris, the leaves are carefully washed after harvesting and wash out the impurities.

c) Peeling: A sharp knife or peeler is used to remove the leaf's outer coat. Aloin, a yellow liquid found in this stratum, has a harsh taste and may irritate the stomach.

d) Filleting: The gel within the leaves is then removed by filleting. Cutting the leaves lengthwise and using a spoon or knife to scrape out the gel are steps in the filleting process.

e) Straining: After that, the gel is squeezed to get rid of any last bits of fibre or leaf.

f) Stabilization: A natural preservative, such as vitamin C or citric acid, is added to the gel to solidify it. This keeps the gel fresh longer and increases its shelf life.



Fig.4 Formulation of cream

In a borosilicate glass beaker, heat liquid paraffin and beeswax to 75 °C and keep it there throughout the heating process. (Phase oil). Borax and methylparaben should be dissolved in distilled water and heated in a separate beaker to 75 °C to produce a clear solution. Phase of water. The heated oily phase will then gradually receive this watery phase .[10]Then incorporate a precise amount of Aloe Vera gel, rice extract (starch), and vigorously stir until a creamy cream appears. Then, as a fragrance, add a few drops of rose oil. Place this cream on the surface and, if necessary, add a few drops of distilled water. Then, mix the cream geometrically on the slab to give it a smooth texture and ensure that all the elements are thoroughly combined. Slab technique or extemporaneous cream preparation is the name of this technique. (Table 1 is the formulation table.)

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Table 1: Formulation of cream

Sr.no	Ingredients	Formulation
1.	Rice extract	2 gm
2.	Aloe vera gel	1.5 gm
3.	Bee wax	3 gm
4.	Liquid Paraffin	10ml
5.	Borax	0.2gm
	Methyl Paraben	0.002gm
6.	Distilled water	Q.S
	Rose water	Q.S
7.		
8.		

III. FORMULATION



Fig.5: Formulation of Cream Base

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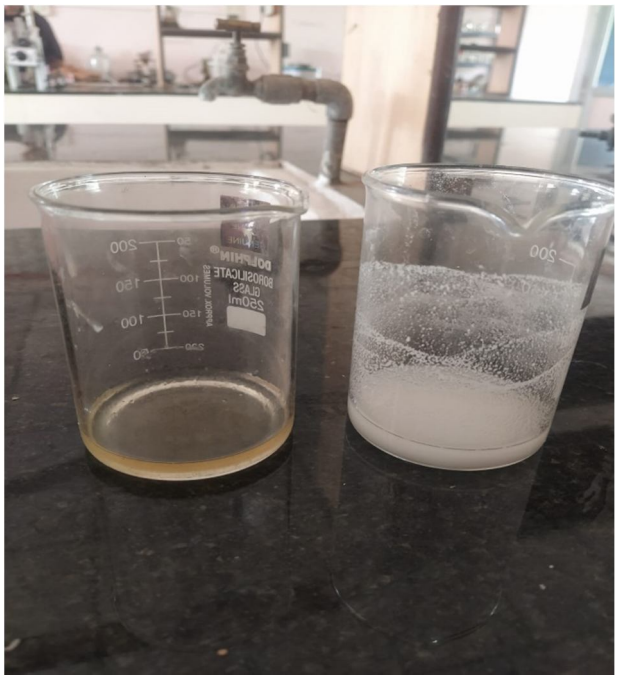


Fig.6:Oil Phase and Aqueous Phase

A. Evaluation of Cream

1) *Physical Evaluation:* The following physical characteristics of the developed herbal creams were also evaluated: color, smell, consistency, and status of the formulation.
2) *Colour:* Visual examination was used to determine the color of the cream. The outcome is shown in the table.
3) *Odour:* The odour of cream was found to be characteristics.
4) *State:* The status of the cream was visually inspected. The cream was solid in its current state, as shown in the table.
5) *Consistency:* Manually massaging the cream on the hand to test the formulation revealed that it had a smooth feel.
6) *Spreadability:* Spreadability of the formulated cream was determined by sandwiching the sample between two slides, compressing it to a uniform thickness by applying a specific weight for a predetermined amount of time, and measuring the amount of time needed to separate the two slides.[21] Spredability was determined using the formula below, and the results are shown in table.

$$\text{Spredability(S):} \quad \frac{\text{Weight tide to upper slide (W) x Length of glass slide (L)}}{\text{Time taken to separate slide (T)}}$$

7) *Washability:* After applying the product to the skin, the ease of water washing was evaluated. Results were displayed in a table.
8) *Non- irritancy Test:* The non-irritancy test results for a herbal cream formulation were assessed. No irritation or redness were visible during preparation. The condition was observed for 24 hours and 28 minutes[11].Result were displayed in table.
9) *Viscosity:* Cream's viscosity was measured using a Brooke field viscometer at a temperature of 25 degrees Celsius and spindle number 63 at rpm. Table results were displayed.
10) *Greasiness:* Here, a thin layer of cream was put to the skin's surface, and its grease- or oil-likeness was assessed. We can conclude from the findings that the cream is not greasy.
11) *Homogeneity:* By looking at it and touching it, the uniformity of the formulation was evaluated.
12) *Removal:* By rinsing the area where the cream had been applied with tap water, the creams ease of removal was evaluated.
13) *After Feel:* Emolliency, slipperiness, and the quantity of leftover residue after applying a specific amount of Cream was examined.
14) *Type of Smear:* After applying the cream, the kind of film or smear that developed on the skin was examined.

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15) *pH:* With a digital ph meter, the ph of the prepared herbal cream was determined. 100 ml of distilled water were used to produce the cream solution, which was then left to sit for two hours. Ph for the solution was derived as an average after three determinations. Table displays the outcomes.

Table

Sr.no	Parameter	Results
1.	Color	white
2.	Odour	charecteristic
3.	State	solid
4.	Consistency	semisolid
5.	Spreadability	3.38gm.cm/sec
6.	Washability	washable
7.	Non- irritancy test	No irritation
8.	Viscosity	4406.3cps
9.	Homogeneity	uniform
10.	Removal	removable
11.	After feel	Emollience
12.	Type of smear	Thin smear
13.	pH	7.22

IV. CONCLUSION

In conclusion, rice herbal face cream is a skincare item made with rice-based ingredients that are reputed to provide positive skin-care effects. Antioxidants, vitamins, and minerals found in rice are said to nourish the skin, keep it hydrated, and encourage a more even complexion. Additionally, rice-based herbal extracts may be relaxing and anti-inflammatory, which may be able to calm sensitive skin and lessen redness.

It's crucial to remember that a rice herbal face cream's effectiveness might change based on a number of variables, including a person's unique skin type, sensitivity, and general skincare regimen. While some people could find rice herbal face cream to be a useful addition to their skincare regimen, others might not experience any noticeable effects.

V. RESULT

The present research was the formulation and evaluation of rice face cream. The evaluation parameters were coming under results, like the physical evaluation of rice face cream, PH of the cream, Spreadability, Washability, non-irritancy test, viscosity , Homogeneity of rice face cream.

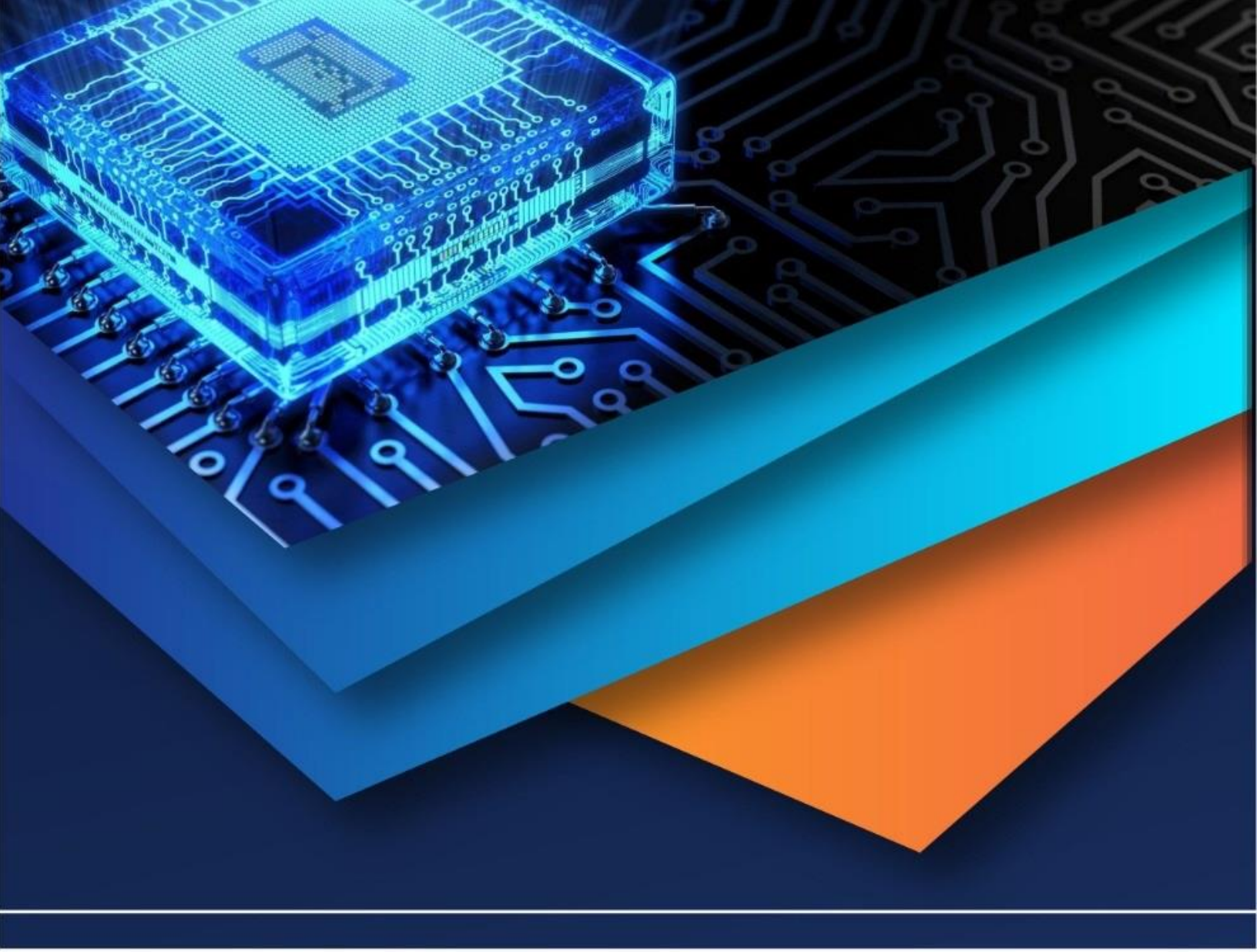


Fig.7.Cream

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