

FORMULATION AND EVALUATION OF HERBAL FACE SERUM

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ABSTRACT

Serums are skin care products that the skin can absorb rapidly. They are formulated to contain high doses of certain active ingredients, such as vitamin C and retinol. They are not moisturizers. Instead, they are an additional step in skin care routines selected to address specific skin concerns.

Serum get rapidly absorbed and have the ability to penetrate into deeper layers together with its active ingredients, to moisture and deliver added nutrients. serum contain high concentration of active ingredients, so are usually made to contain just a few active ingredients. Due to high concentrations of active ingredients serums produce the desired results faster than other creams or similar products. formulation containing 96% rice water was biocompatible with the human skin and presented suitable cosmetic properties.

Rice water should be thus considered as an anti-aging ingredient to be used as raw material for skincare applications.

The skin healing benefits of rice have been known for centuries. Rice (*Oryza sativa*) water is a food processing waste that can potentially be incorporated into cosmetic formulations.

The gel formulation containing 96% rice water was biocompatible with the human skin and presented suitable cosmetic properties. Rice water should be thus considered as an anti-aging ingredient to be used as raw material for skincare applications.

KEYWORDS: Rice water ,anti-aging topical application hydrogel ;skincare ;waste into value

INRODUCTION

Serum is a skin care product containing a gel or lightweight lotion or moisturizing consistency and have ability to penetrates deeper to deliver active ingredients into the skin.

A good skin Serum may provide your skin a firmer, smoother texture, makpores appear smaller and increase moisture Whether it is moisturizer, antiwrinkle or anti-aging product or skin serum, all these products should contain antioxidants, cell-communicating ingredients and skin identical ingredients.

All skin type needs these ingredients to be as healthy as possible. Gel and liquids preparations are best for oily and combination skin, serums and light lotions are best for normal to dry skin, more emollient lotions and moisturizing creams are best for dry to very dry skin The polysaccharides present in Aloe Vera have excellent moisturizing property and when mixed with essential oils, it makes an excellent skin soothing moisturizer and sun block lotions. Due to its soothing and cooling qualities Ayurveda recommends Aloe Vera for a number of skin disorders. Aloe Vera extract have antibacterial and anti-fungal activities, which may help in the treatment of minor skin infection.

CLASSIFICATION OF SERUM :

1. Anti-aging.
2. Skin brightening serum.
3. Acne frightening serum.
4. Hydrating serum.
5. Exfoliating face serum.

1. Anti-aging: -

Anti-ageing serums fight skin sagging, exfoliates and hydrate your skin, reduce hyperpigmentation, improve skin texture and unveil a softer and more youthful appearance. Serums that support aging gracefully are skin care products containing active ingredients that target the visible signs of aging, such as fine lines, wrinkles, and age spots, with the goal of improving the appearance of your skin.

Suitable for : All skin types.



Skin brightening serum

A skin brightening serum is a product with high-performance ingredients designed to visibly reduce dullness and discoloration. These products are designed to help visibly brighten an uneven skin tone for a more uniform look.

Suitable for: All skin types.



3 Acne fighting serum:

This serum easily penetrates the pore lining and scoops out the dirt, debris, and sebum; giving you clean and clear skin. It removes blackheads and whiteheads by keeping your pores clean and controls excessive oil. It neutralizes skin damage caused due to environmental exposure and helps to avoid patchy skin tone and acne scars. It evens out the complexion and minimizes pigmentation and helps to reduce acne breakouts and fade scars. It calms redness and skin irritations and assists in purifying the skin and minimizing pores.

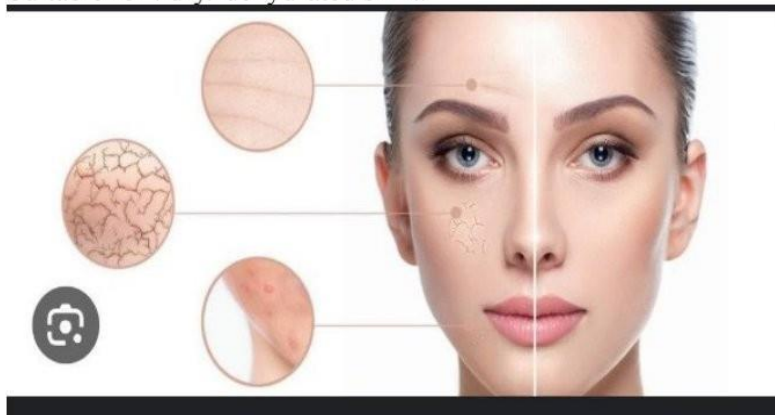
Suitable for: oily skin, acne prone skin

Hydrating serum:

Hydrating serums enhance your skin's hydration, prevent it from drying out and improve its moisture retention. Many serums contain lipid-replenishing ingredients, which deeply nourish the skin. Using one before you apply your favourite SPF moisturizer is the ultimate skin hydration combination for your face. Serums can also be used to combat signs of aging, plump

up your skin and reduce the appearance of wrinkles and fine lines.

Suitable for : dry/ dehydrated skin..



Exfoliating serum:

Exfoliates dead skin cells. Reduces blemishes and clears the skin. Deep cleanses your pores to bring out the natural glow. Exfoliating serums have blends of acids that work together to remove dead skin cells,” explains Dr. Jaliman. These serums work best on skin experiencing “dryness, hyperpigmentation, fine lines and wrinkles, as the acids help slough off dead skin and tackle concerns having to do with discoloration.

PROBLEMS RELATED WITH THE SKIN

Acne is a common skin condition where the pores of your skin clog. Pore blockages produce blackheads, whiteheads and other types of pimples. Pimples are pus-filled, sometimes painful, bumps on your skin

The medical term for acne is acne vulgaris.

USE OF SERUM TO TREAT ACNE

Face serums help shrink pores and increase cell turnover further leading to the minimisation of large pores. They also help unclog and clear dirt and sebum from the pores, thanks to the antioxidants and exfoliating acids present in them. This helps in reducing the formation of blackheads and whiteheads on the skin.



DERMATITIS

Dermatitis is a general term that describes a common skin irritation. It has many causes and forms and usually involves itchy, dry skin or a rash. Or it might cause the skin to blister, ooze, crust or flake off. Three common types of this condition are atopic dermatitis (eczema), seborrheic dermatitis and contact dermatitis.

Dermatitis isn't contagious, but it can make you feel uncomfortable and self-conscious. Moisturizing regularly helps control the symptoms. Treatment may also include medicated ointments, creams and shampoos

uses

The Vit C Serum is Anti-oxidant Rich which Brightens Your Skin from the First Application. Buy the Garnier Bright Complete Vitamin C Serum Online at the Best Price.



DEAL PROPERTIES OF FACE SERUM;

1)Skin irritation

Small amount of serum was sprayer on left hand dorsal skin and kept for the some time ,resultwas found non irritation on the skin.

2)Stickness

The mist particles was not found to be much sticky in nature .

3)Skin conditioning

The appearance of the skin after application of the mist was seen to be smooth, hydrate and supple.

4)Light exposure testing

The product is placed in direct sunlight/in light chamber 48 hours to check discoloration of the product .

5)Temperature variation

The formulation was exposed different temperature.

6)Surface tension

The formulation was transferred in the stalagnometer tension was recorded.

Advantages:

1. Serums get rid of such remaining impurities to supply your face additional and complete cleanse.
2. The appearance of pores can minimize by regular use of the serum.
3. Serums are helpful to reinstate the pH balance of the skin
4. Serum boost of hydration.
5. They are good humectants since they contain substances like glycerin. It means they aid in absorption of moisture through the skin. They prepare the skin so that it can absorb the serums and creams that will be used in the future.
6. Serum can make your skin feel instantly refreshed.
7. Serum are water-based liquids with calming and anti-inflammatory characteristics that can help prevent infections and breakouts. They are crucial in the prevention of skin infections.
8. A serum adds a layer of protection to your skin. It works as a barrier against dirt, dust, pollution, and the sun, among other environmental stressors.
9. Serum are made up of a number of substances that are used to treat a variety of skin problems.
10. Serum are a boon for oily or acne-prone skin.
11. Reducing the appearance of fine lines and wrinkles.
12. Helping the skin to retain moisture.

REVIEW OF LITERATURE

1) Author : Smriti ojha (feb 2011) Formulation and evaluation of face serum containing bevenom and aloe vera gel. Facial wrinkles and skin aging are undesirable outcome of photodamage and ultraviolet(UV) rays. Currently no effective strategies are available to delay skin aging process. Aloe Vera, glycerin and honeybee venom face serum is a highly concentrated cosmetic product.

2) Author : Ra vikant upadhyay (march 2017)
Tulsi a holy plant with high medicinal and therapeutic value in face serum. The present review article explains medicinal and therapeutic uses of Tulsi plant in traditional medicine. Tulsi (*Ocimum sanctum* [OS] Linn.) is an aromatic plant belongs to family Lamiaceae.

3) Author : Denia pratiwi (feb 2021)
The Combination of Turmeric (*Curcuma domestica*) Rhizome Extract and Collagen in A Serum Formulation as an Antioxidant. Turmeric (*Curcuma domestica*) has nutritious compounds called curcuminoids, which can be used as antioxidants. As an antioxidant, *C. domestica* extract can be used to ward off free radicals that damage collagen and elastin, a protein that keeps skin moist. This study aimed to determine the antioxidant activity of serum combined with the addition of collagen using the DPPH method.

4) Author: Aurora garre contreras(may 2018)
Antiaging effects of a novel facial serum containing L-Ascorbic acid proteoglycans, and proteoglycan-stimulating tripeptide: ex vivo skin explant studies and in vivo clinical studies in women .

5) Author: Debjit bhowmik(may 2022)
Review Article Traditional Indian Herbal Plants Tulsi and Its Medicinal Import. Tulsi has got the great medicinal value. Studies have also shown Tulsi to be effective for diabetes, by reducing blood glucose levels. The same study showed significant reduction in total cholesterol levels with Tulsi. Another study showed that Tulsi's beneficial effect on blood glucose levels is due to its antioxidant properties.

6) Author: Hanna a. Yamani (march 2016)
Antimicrobial Activity of Tulsi (*Ocimum tenuiflorum*) Essential Oil and Their Major Constituents against Three Species of Bacteria. The aims of this project were to examine the antimicrobial properties of essential oils distilled from Australian-grown *Ocimum tenuiflorum* (Tulsi), to quantify the volatile components present in flower spikes, leaves and the essential oil, and to investigate the compounds responsible for any activity.

AIM:

The aim of this project is to design and develop a formulation containing rice water, rose oil, aloe vera gel ,glycerin ,vitamin capsule to evaluate face serum which containing biological properties, namely, the anti-aging and antioxidant rice water properties.

OBJECTIVE

The main objective of face serum is

1. Provides hydration
2. Provides antioxidants and a concentrated dose of nutrients to the skin.
3. Absorb quickly into skin.
4. Promotes healthy and glowing skin.
5. Help to brighten skin decreased physical activity in the urban population.
6. safety and Gentlness
7. multifaceted Benefits

PLAN OF WORK

- 1 .Selection of pure drug ;
2. Preparation of material and Methods
3. Selection of effective method of preparation
4. Experimental design-
5. Formulation and preparation of facial herbal scrub
6. Comparative study ; graph representation
7. Result & discussion
8. Conclusion
9. Reference

1 .Rice water

Rice water is a suspension of starch obtained by draining boiled rice or by boiling rice until it completely dissolves into water. Using rice water for a skin is a natural home remedy that contains amino acids, vitamins, and minerals that are known to protect and repair skin.



Fig1.2rice water

Synonym – surge

Biological source-

The petals and sepals of the Rose plant , usually the Damask [rose damascena]

Colour – white

Odour – tasteless

Taste – no taste

Chief chemical constituents-

Dextrose and laevulose (70 - 80 %)

Dextrin (0.06 - 1.25%) Proteins

Uses- Good for wrinkles and aging Prevent acne Remove dirt and pimple

2 Aloe vera gel



Synonym- Aloe barbadense

Biological source -
Dried latex of leaves of it .

Color- Green

Oduor- odorless

Taste- normally bitter in taste

Chief chemical constituents - chromone and anthraquinone

Uses- safest and stimulating purga -tive ,in higher dose may tonic and vuneray

3.vitamin capsule



Synonym- tocopherol

Biological source -plant oil

Description –

Color-orange

Taste- bitterness

Chief chemical constituents – 15000 microgram retinol equivalents equal to 50000 international unit of vitamin

Uses- skin clean and free from acne

Deeply moisturizing

4. GLYCERIN



Synonym- GLYCERIN

Biological source - triglycerides

Description –

Colour- colorless

Odour- does not have any characteristic odour

Taste- sweet taste

Chief chemical constituents – eight hydrogen atom and oxygen

Use

s-moisture content ,soft candies and .

Materials and Methods

Sr .no	Ingredients	uses	Quantity
1.	Rice Water	Binding agent,improveskin hydration	5 ML
2.	Aloe Vera Gel	Pimple alone ,topically and orally ,skin health	2 ML
3.	Vitamin oil	Moisturizing the skin ,reducing itchiness	1 ML
4.	Perfume	Pleasant.	0.1
5.	Glycerein	Accelerate wound healing.	0.9

Rice water preparation :

water prepared by the boiling process (RWB): 400 g of paddy rice whole grains were boiled in 1 L of deionized water for 30 min. Rice water was filtered through cotton gaze and Frozen at -30 c unit used .

Water prepared with the intact grain (RWM): 400 g of paddy rice whole grains were mixed with 1 L of deionized and left to shake, at room temperature, for 24 h. Rice water was then filtered through cotton gaze and frozen at -30 °C until used.

Water prepared with the crushed grain (RWS): 400 g of paddy rice grains were grinded into smaller pieces using a kitchen robot, for 10 s, mixed with 1 L of deionized water and left to shake, at room temperature, for 24 h. Rice water was then filtered through cotton gaze and frozen at -30 °C until used.

Aloe vera gel extraction :

The gel is removed by trimming the rind and aloin layer from the leaf and the remaining gel digested under ultraviolet radiation at ambient temperature to produce a biologically sterile and chemically stable extract of composition having characteristics similar to fresh aloe vera juice.

METHODS

- Wash the containers with running water
- Dry the containers
- Take prepared rice and extracted aloe vera gel
- Then ,rip open 2vitamin e capsules and pour the ingredients into the mix .shake the bottle so that the three ingredienta are nicely blended and your serum is ready to use .
- Add other iexcirvation like preservatives and perfume

CONCLUSION :

The aim of study was to formulate various herb as into a serum form nourishing and glowing activity on face skin. Within the serum Aloe vera and oil are mainly used. The burn plant gel from the inner central a part of the leaf often incorporates a superb action in acne, pimples and other skin problems, burns thanks to heat, sun exposure and in treatment of radiation dermatitis. Aloe vera is rich in vitamins and minerals that have an honest moisturizing capacity and anti-aging effects to keep up healthy- and fresh-looking skin. The Spreadability was found to be good. No residues were form and was easy to clean out. The gel stimulate cell growth and in and of itself enhance the restoring of harm skin. So, this serum will be use treat skin related problem.

2. RESULT AND DISUSSION:

Formulation and evaluation of herbal face serum performed and studied various properties of serum and benefits of it . successfully. We performed the 10ml batch each. While performing we find some changes in facial brightening and get a glass skin.

Observation table:

Sr.no	Parameters	Observation
1	Colour	White
2	Odour	
3	Consistency	Good
4	Homogenicity and texture	Smooth
5	PH	
6	Severability	Easily spread
7	Washability	Easily washed
8	Skin irritation	Non irritant
9	Patch test	No test
10	Accelerated stability test	Stable
11	Garrity	Garrity

EVALUATION OF FACE SERUM:

1. Physical Evaluation

The Colour and appearance of the formulation was observed visually. The formulation uniform distribution of extracts. This test was confirmed by visual appearance and by touch.

2. PH meter:

A pH meter was calibrated using a standard buffer solution. Nearly 1 ml of the face serum was properly weighed and dissolve in 50 ml of distilled water and finally its pH was calculated. The skin has an acidic range and the pH of the skin serum should be in the range of 4.1-6.7.

3. Determination of Spreadability

2 gm of serum sample was placed on a surface. A slide was attached to a pan to which 20 gm weight was added. The time (seconds) required to separate the upper slide from surface was taken as a measure of Spreadability.

4 Microbial Examination of the Product

In this method, the mixed culture is diluted directly in tubes of liquid agar medium. The medium is maintained in a liquid state at a temperature of 45°C to allow thorough distribution of the inoculum. The inoculated agar medium is transferred into petri plates, allowed to solidify and incubated. In the series dilution technique, the original inoculum may be diluted by using sterile water or saline solution so that the concentration of the microbes gradually become less. Mix 1 ml dilute in 20 ml of liquid nutrient agar medium at 45°C. Shake the liquid agar nutrient agar medium & pour in a sterile petri plate, solidify and incubate it.

5. Stability Studies

Formulation and development of a pharmaceutical product is not complete without proper stability analysis carried out on it to determine physical and chemical stability and thus safety of the product. The stability studies is carried out as per ICH guidelines. Short term accelerated stability study was carried out for the period of few months for the prepared formulation. The samples were stored at different storage conditions of temperatures such as 3-5°C, 25°C RH=60% and 40°C±2% RH=75%.

6. Cyclical Temperature Test

This test is not carried out at any fixed temperature and humidity. In this test, temperature was changed cyclically every day. At room temperature and frizzling temperature to stimulates the changes in temperature

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