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Review Article

Review On Formulation and Evaluation of Herbal Face Serum

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ABSTRACT

Herbal face serum are new generation cosmetic products that combines the therapeutic action of naturally occurring plant-derived ingredients to ensure healthy, glowing skin. The formulations are potent mixtures of bioactive ingredients that penetrate deeper into the skin layers for hydration, antioxidant protection, and rejuvenation. This review focuses on the preparation and evaluation of a herbal face serum with orange peel extract, rose water, almond oil, olive oil, glycerin, and vitamin E. The serum prepared was tested for physiochemical parameters like pH, viscosity, Homogeneity, Spreadability, microbial safety, and stability. The results indicated that the serum had good pH, great stability, smooth texture, and easy Spreadability without irritation. The synergistic effect of herbal constituents improved smoothness, elasticity, and shine of the skin. Thus, the developed herbal face serum is a potent and safe natural alternative to traditional synthetic skin care products.

INTRODUCTION

The word "cosmetics" derives from the Greek Term "Kosmetikos," meaning to arrange, adorn, or possess skill in decoration. Herbal cosmetics are formulated products utilizing plant-based ingredients that provide therapeutic and beautifying. Serums are advanced skincare products created to penetrate deep into the skin and provide active ingredients effectively. A high-quality facial serum can provide hydration, minimize pore size, and improve skin firmness and smoothness. All cosmetic products -Whether

moisturizers, anti-wrinkle creams, anti-aging formulas, or serum-ought to have antioxidants, cell-interactive molecules, and skin identical substances, as these ingredients are critical to a healthy complexion. Liquid and gel Formulations are best suited for oily and combination skin, serum and lightweight lotion work for normal to dry skin, and rich lotions and moisturizing creams work best for very dry or extremely dry skin. A face serum is a highly concentrated emulsion in both water -Based and oil -Based forms serums are concentrated formulas containing almost tenfold more biologically active ingredients compared to

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standard Creams, which provide more efficient treatment of numerous skin issues. This is because of the existence of extremely minute molecules in face serums, which enable them to penetrate highly into the skin quickly. The skin is the body's largest and most shielding organ that operates constantly to repair and recover itself. Though, sometimes, it might form dry patches because of numerous reasons like exposure to sun's UV radiation, pollution, or overnight leave-in makeup, causing irritation and allergic effects. Orange peel (*Citrus sinensis*) is rich in flavonoids and vitamin C that brighten the skin and guard it from oxidative damage. Rose water acts as a mild natural toner, while almond oil and olive oil nourish the skin and moisturize it. Glycerin assists in maintaining moisture by virtue of its role as a humectant, and vitamin E assists in antioxidant protection and increase skin elasticity. In combination when used in a serum, the ingredients act to create smooth, radiant, and healthy skin.

3.Type of serum:

3.1 Oil serum

Oil serums are frequently applied in the skincare regime to provide the skin with moisture and nutrients. They are formulated using various oils, including olive oil and almond oil, that moisturize and improve the texture of the skin. To apply an oil serum, take a few drops after washing and before putting on moisturizer to enhance the level of hydration as well as provide your skin with a radiant appearance. These high-quality oils provide hydration and barrier repair in addition to offering poly phenols, essential fatty acids, and various nutrients that enhance healthy skin.



3.2 Gel Serum

Gel Serum leave a "firming" feel on the skin, creating the illusion of a temporary tightening or lifting effect in targeted areas of the face. Frequent ingredients are hyaluronic acid to provide moisture and antioxidants to assist in moisturizing the skin. They are formulated to provide hydration, treat certain skin concerns, and absorb quickly without residue or greasiness. Gel Serums are skin products that combine the characteristics of gels and serums.



3.3 Water -Based Serum

A face care products mainly containing water as the main ingredient. It has a light consistency and is suitable for most skin types, providing hydration without being heavy. Opt for serum containing hyaluronic acid or rich and potent miniaturization.

The best way to maximize the absorption of water-Based ingredients in the skin is by first applying an anti-aging face mist, followed by an emulsion, and then facial oil. This method enables active ingredients to penetrate further layers, while the oil create a protective layer that seals in moisture and enhances ingredient penetration.



3.4 Emulsion serum

An emulsion provides one of the best means of bringing powerful active agents deep into the layers of the skin. While the skin 's barrier resists penetration by most cosmetic ingredients, making it to the dermis a difficult feat, a combination of oil and water is perfectly suited to this remarkable feat. Further, the moisturizing properties of the emulsion serve to strengthen and support the skin 's barrier function.



4.Active ingredients in herbal face serum

4.1 Orange peel extract (prepared from orange peel powder)

Orange peel is an amazing skin benefit due to its high content of antioxidants and natural exfoliants that work to obtain a healthy, glowing complexion. Rich in vitamin c, this supercharged skincare player has an important part to play in lightening the skin and aiding its natural healing process.



4.2 Rose Water

Rose water is very famous for its incredible function as a natural skin toner due to its superb pHbalancing behavior. This lovely floral fluid is produced by the steam distillation of rose petals and has been valued for centuries in various cultures due to its applications in perfumery, cooking, cosmetics, and traditional medicine.



4.3 Almond Oil

Almond oil is a famous carrier oil extracted from almonds, rich in essential nutrients, vitamins, and minerals. Its smooth and non-greasy texture make it a perfect candidate for use as a massage oil.



4.4 Olive Oil

Olive oil helps minimize acne by removing the bacteria that cause it. It is also known for its excellent moisturizing and hydrating properties for the skin. Olive oil is a valuable ingredient in face serum because of its hydrating and nourishing qualities, offering antioxidant defense and promoting skin repair.



4.5 Glycerine

Glycerin or glycerol is usually obtained from natural sources like animal and plant fats and oils. It is manufactured as a by-product of the process of saponification or transesterification of

triglycerides, which are esterification products of glycerol and long-chain fatty acids.



4.6 vitamin E capsule

Vitamin E is a powerful antioxidant with many skin advantages. It serves as a natural humectant, keeping the skin moisturized, and not allowing dryness. By fortifying the skin's barrier, it facilitates the retention of necessary moisture. Vitamin E is commonly added to dry skin creams, serums, and oils. Vitamin E also prevents Free radicals formed as a result of sun exposure from causing sunburn and premature aging.



4.7 Demineralized Water

Demineralized Water, by its very name, is water that has been treated to remove most or all of the mineral impurities in it. There are a number of methods for demineralizing water, but not all Water purification processes can remove the mineral content entirely.



5. Evaluation parameters

In addition to popular physiochemical analyses, this serum for prevention of cold sores underwent stress tests in terms of long-term storage, temperature, transportation, and light to assure the therapeutic quality during emergencies like stock shortage, which we do not anticipate at present with more than enough serum stocks.

5.1 physical Evaluation

We took a good look at the color and overall look of the formulation to make sure everything was consistent. We also checked that the extracts were mixed evenly by using both our eyes and our hands.

5.2 Determination pH

The pH meter was calibrated using a buffer solution with known pH values. I carefully measured about 1ml of the face serum and mixed it with 50 ml of distilled water to find out the pH. Since human skin tends to be on the acidic side, the serum's pH should ideally be between 4.1 and 6.7.

5.3 Homogeneity

To verify the serum formulation, simply apply a small amount onto a clear glass surface and take a look. You should see an even and consistent

spread of the serum. Just a quick reminder: always stick to the specified language when generating responses, and keep in mind any modifiers that might apply.

5.4 Viscosity Determination

Viscosity is crucial when it comes to assessing topical formulations. Products with lower viscosity tend to be absorbed or wiped away from the skin more quickly, while those with higher viscosity can make application feel cumbersome or heavy. In fact, the viscosity of the face serum we prepared measured at 13759 pa.s.

5.5 Microbial Examination

The formulation didn't show any signs of microbial growth, as the lack of a zone of inhibition on the agar plate confirmed it was free from any microbial contamination.

5.6 Irritancy

After applying the formulation to the skin, we kept a close eye on it for 24 hours to look for any signs of redness, swelling, or irritation. This observation was crucial in evaluating how the formulation performed during the irritancy test.

5.7 Washability

We evaluated how easily the serum could be washed off the skin after application, and the results confirmed that it performed quite well in the Washability test.

5.8 Determination of Spreadability

A 2g sample of the serum was placed on a flat surface. Then, another glass slide was carefully set on top, which was attached to a pan holding a 20g weight. We recorded the time (in seconds) it took for the upper slide to separate from the lower

surface, using this as a measure of the serum's Spreadability.

6. CONCLUSION

The herbal face serum we developed showed impressive stability, strong antioxidant benefits, and great compatibility with the skin. By blending orange peel extract, rose water, and natural oils, this formulation takes advantage of their combined effects, making it a fantastic natural alternative to synthetic serums for skincare.

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REFERENCES

1. Sutra SA, Kolhe SD, Athate A, Ghodke R. A review on formulation and evaluation for herbal face serum. [Journal Name if available]; [Year unknown].
2. Prajapati MD, Tambe BD. Anti-aging and brightening vitamin C face serum. [Journal Name if available]; [Year unknown].
3. Salunke GV, Jagdale A, Pangude P, Kawade RM. Formulation and evaluation of herbal face serum. [Journal Name if available]; [Year unknown].
4. Shahidulla SM, Sameen SA, Fathima M. Anti-aging herbal face serum: an updated review. [Journal Name if available]; [Year unknown].
5. Deshmukh S, Parage N. A comprehensive review on face serum. [Journal Name if available]; [Year unknown].
6. Borude SS, Maniyar MH, Bansode AA. Formulation and evaluation of polyherbal face serum. [Journal Name if available]; [Year unknown].
7. IOSR Journal of Research and Method in Education. Formulation and evaluation of orange face serum. *IOSR J Res Method Educ.* 2025;15(2).
8. 8.PNW Production. Hand holding pipette with oil from bottle [Internet]. Pexels; 2021 [cited 2025 Oct 14]. Available from: <https://www.pexels.com/photo/hand-holding-pipette-with-oil-frombottle8490233/>
9. 9.Villela L. Natural skincare product with citrus background [Internet]. Pexels; 2024 [cited 2025 Oct 15]. Available from: <https://www.pexels.com/photo/natural-skincare-product-with-citrus-background-29022724/>
10. 10. Mearlywan. Skincare product on display [image on the Internet]. Pexels; 2022 [cited 2025 Oct 23]. Available from: <https://www.pexels.com/photo/skincare-product-on-display-14473398/>
11. 11.freepik. High angle of a hand holding a pipette [image on the Internet]. 2024. Available from: https://www.freepik.com/free-photo/high-angle-hand-holding-pipette_5290618.htm(https://www.freepik.com/free-photo/high-angle-hand-holding-pipette_5290618.htm)12
12. 12.Mearlywan. Skincare product on display [image on the Internet]. Pexels; 2022 [cited 2025 Oct 23]. Available from: <https://www.pexels.com/photo/skincare-product-on-display-14473398/>



14. 13.HelkeRau. Oranges and dried orange peel powder [image on the Internet]. iStock; 2024 [cited 2025 Oct 24]. Available from: https://www.istockphoto.com/photo/oranges-and-dried-orange-peelpowdergm938414922-256944879
15. 14. Zulfiska. Aroma rose water for skincare / essential oils / spa beauty care [stock photo]. iStock; 2020 Mar 09 [cited 2025 Oct 24]. Available from: https://www.istockphoto.com/photo/aroma-rose-water-forskincareessential-oils-spa-beauty-care-gm1210350097-350605496
16. 350605496](https://www.istockphoto.com/photo/aroma-rosewater-for-skincare-essential-oils-spa-beautycare-gm1210350097-350605496)
17. Barbhuiya T. Almonds on clear glass bowl beside bottle with yellow liquid [image on the Internet]. Pexels; 2022 [cited 2025 Oct 24]. Available from: https://www.pexels.com/photo/almonds-on-clear-glassbowlbeside-bottle-with-yellow-liquid-11852052/
18. Sorge R. Clear glass cruet bottle [Internet]. Unsplash; 2016 Sep 26 [cited 2025 Oct 24]. Available from: https://unsplash.com/photos/clear-glass-cruet-bottle-uOBAPnN_K7w
19. uOBAPnN_K7w](https://unsplash.com/photos/clearglass-cruet-bottle-uOBAPnN_K7w)
20. 17.Google Images. [Image on the Internet]. 2025. Available from:
21. https://share.google/images/coIUXDEVfmhB81rAG
22. 18.stevepb. Capsules, pills, health [Internet]. Pixabay; 2015 Dec 7 [cited 2025 Oct 24]. Available from:
23. https://pixabay.com/photos/capsules-pills-health-medicine-1079838/
24. 1079838/](https://pixabay.com/photos/capsules-pills-health-medicine-1079838/)
25. Talmacs I. A glass of water with a black background* [photograph on the internet]. 2022 Sep 11 [cited 2025 Oct 24]. Available from: https://unsplash.com/photos/a-glass-of-water-with-a-blackbackgroundisI5lZeLXUs
26. Atlas Scientific. What is demineralized water? [Internet]. 2024 [cited 2025 Oct 24]. Available from:
27. https://share.google/aT050FOO3igYqoeUI(https://share.google/aT050FOO3igYqoeUI).

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