

Herbal Two- Phase Skin-Brightening and Nourishing Serum

Sadhana Ganesh Zore¹, Rajeshwari Thokal²

¹Student, Sayali Charitable Trust College of Pharmacy, Mitmita, chh.sambhaji Nagar

²Assistant professor, Sayali Charitable Trust College of Pharmacy, Mitmita, chh.sambhaji Nagar

Abstract—Herbal face serums are becoming very popular because they can give the skin natural nutrients without harsh chemicals. This study focuses on making a simple, plant-based face serum using aloe vera, green tea, rosehip oil, licorice, and other herbal ingredients. These herbs were selected because they are known to brighten the skin, reduce damage from free radicals, and improve overall skin health. The serum is made by gently mixing water-based extracts with natural oils so that the skin can easily absorb the nutrients.

A phytochemical (plant compound) analysis of the herbs showed that they contain helpful components like polyphenols, flavonoids, vitamins, and essential fatty acids. These natural ingredients work together to protect the skin, promote collagen production, reduce dark spots, and improve uneven skin tone. Tests showed that the serum stayed smooth, had a good pH, and remained stable during storage. User feedback showed that the serum felt light on the skin, absorbed well, and left no oily feeling. Regular use helped improve hydration, brightness, pigmentation, and fine lines. Overall, the herbal serum is a gentle, effective, and skin-friendly alternative to chemical-based products. I.

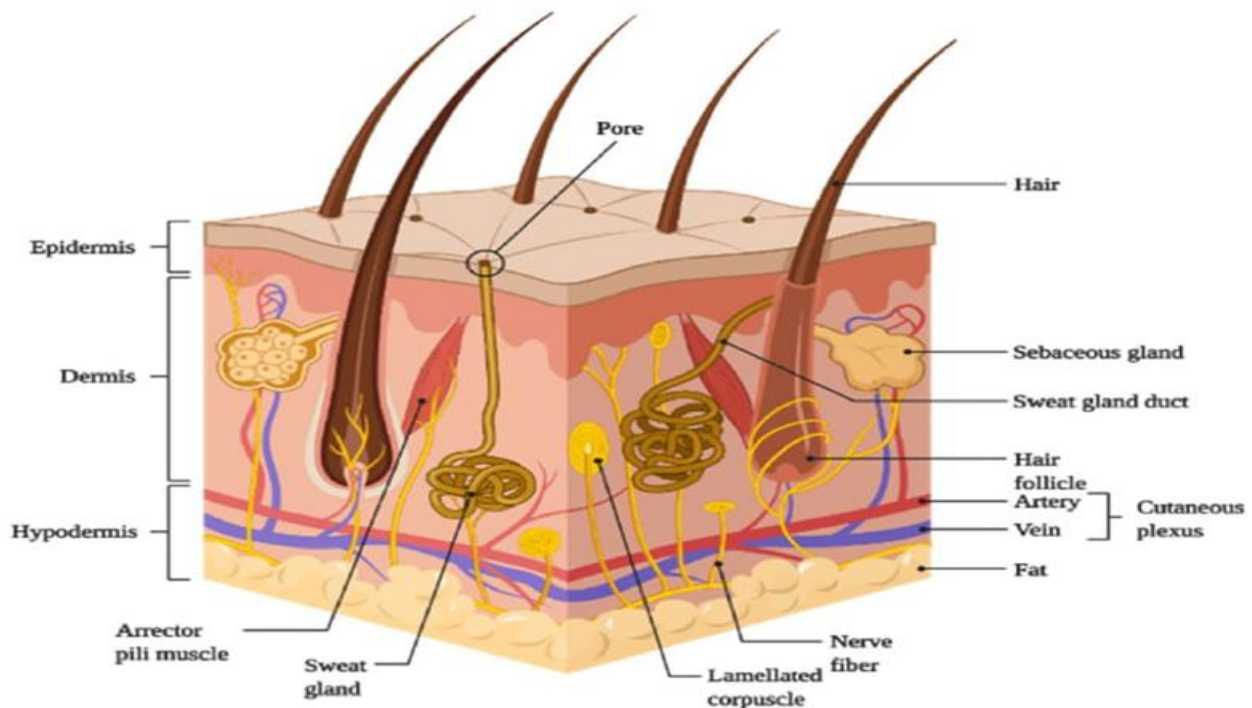
I. INTRODUCTION

Herbal face serums are a new and modern type of skincare made from natural ingredients. They are designed to give quick and effective results. Unlike thick creams or lotions, serums are light in weight and can go deep inside the skin to give better benefits. Because people are becoming more interested in natural skincare, herbal serums are now very popular. These serums are usually made from plant-based ingredients like Aloe vera, green tea, Turmeric, Rosehip, and Licorice. Each of these plants has different skin benefits. Plant extracts contain useful compounds such as flavonoids, polyphenols, vitamins, and essential fatty acids. These help protect the skin from damage, reduce inflammation, improve hydration, and support collagen production. They also help make the skin tone even and improve the skin's barrier without making it oily.

As people become more aware of the side effects of chemical skincare, herbal serums are seen as a safer daily option. They can be used for many skin problems like dryness, dullness, aging, and damaged skin. Because these serums suit almost all skin types, they are becoming more common in skincare routines.

With the growing interest in plant-based cosmetics, many studies continue to show that herbal serums are effective and useful in both modern and traditional skincare.

II. FUNCTION OF SKIN:[8]



1. Provide a barrier of defense against harmful substances, mechanical, thermal and physical harm.
2. Prevents moisture loss.
3. Minimizes the negative effects of UV light.
4. Aids in temperature regulation.
5. Serves as a sense organ.

III. ADVANTAGES OF FACE SERUM:[8]

- Keep skin moisturised
- Help remove skin blemishes
- Anti-aging benefits
- Helps protect against the future.
- Not effective for all skin issues.
- Can be pricey.
- Difficult to select the proper one.
- If not used effectively, it risked being wasted.

IV. DISADVANTAGES OF FACE SERUM:

- * The liquid or gel-like texture of a serum can be a poor match for people with chronic skin conditions like eczema or rosacea, which weaken the skin barrier.
- * For these people, serums may penetrate too quickly, causing irritation.

V. TYPE OF FACE SERUM: [9,10]

1. Oil serum.
2. Gel serum.
3. Water based serum.
4. The emulsion serum.
5. Pressed balm serum.

1. Oil Serum

An oil serum is the simplest form of face serum that contains a carrier oil as a base that absorbs, also known as dry skin. Premium oils have been used to bring out the moisturizing properties of the oil serum.



2. Gel Serum

The gel serum has a firming effect on the applied skin areas. Water based plant extract can be added to the gel serum to enhance the effect of the serum.



3. Water Based Serum

A watery serum that contains some gum and thickness. A water-based serum should be used under creams or lotions to apply the hydrophilic plant extract remaining on the skin. Water based serums have the best ability to penetrate deep into the skin and release the active ingredient.



4. Emulsion Serum:

An emulsion-based face serum is a kind of moisturizer that delivers high-performance skin components while reinforcing the skin's barrier. It joins two "immiscible" phases, such as water and oil, and uses an emulsifier to keep them together and in a stable form. High performance actives are best delivered by this serum deep into the skin's tissues.



5. Pressed Balm Serum:

A balm serum contains active ingredients that are oil-soluble (lipophilic) and may benefit the skin in addition to the traditional balm base of butters, waxes, and oils. The occlusive barrier that the butters and waxes create on the skin nourishes and moisturizes it while enabling the active ingredients in the pressed serum to perform their functions. Thousands of beautiful plant oils can be mixed with dozens of interesting, unusual butters and waxes to create a balm serum.



VI. PLANT PROFILE:

1) Aloe vera: [11,12,13,]



Common name: Aloe vera

Biological name: Aloe barbadensis

Kingdom: Plantae

Class: Liliopsida

Order: Asparagales

Family: Asphodelaceae

Uses:

- burns and wounds
- Moisturizer Heals for skin
- Anti-inflammatory, antibacterial
- Used for acne, sunburn, pigmentation
- Hair conditioning and dandruff control
- Aloe juice for digestion (caution with latex)

2. Green tea: [14,15,16]



Common name: Green tea

Biological name: *Camellia sinensis*

Kingdom: Plantae

Class: Magnoliopsida

Order: Theales

Family: Theaceae

Uses:

- Powerful antioxidant (EGCG)
- Weight loss and metabolism booster
- Improves brain function
- Reduces risk of cardiovascular disease
- Anti-inflammatory, anti-cancer potential
- Skin care (anti-aging, brightening)

3. Turmeric: [17,18,19]



Common name: Turmeric

Biological name: *Curcuma longa*

Kingdom: Plantae

Class: Liliopsida

Order: Zingiberales

Family: Zingiberaceae

Uses:

- Anti-inflammatory (curcumin)
- Antioxidant
- Wound healing
- Improves digestion
- Used in arthritis treatment
- Skin brightening and anti-acne
- Boosts immunity

4. Rosehip Oil: [20,21,22]



Common name: Rosehip

Biological name: *Rosa canina*

Kingdom: Plantae

Class: Magnoliopsida

Order: Rosales

Family: Rosaceae

Uses:

- Rich in vitamin C (immunity boosting)
- Anti-oxidant and anti-aging
- Reduces pigmentation and scars
- Joint pain relief (anti-inflammatory)
- Used in oils, teas, and skincare

5. Licorice: [23,24,25]



Common name: Licorice

Biological name: *Glycyrrhiza glabra*

Kingdom: Plantae

Class: Magnoliopsida

Order: Fabales

Family: Fabaceae

Uses:

- Soothes cough, sore throat
- Anti-ulcer and improves digestion
- Skin brightening and anti-pigmentation
- Anti-inflammatory, antiviral
- Used in herbal medicine and cosmetics

6. Sandalwood:[26,27,28]



Common name: Sandalwood

Biological name: Santalum album

Kingdom: Plantae

Class: Magnoliopsida

Order: Santalales

Family: Santalaceae

Uses:

- Skincare: reduces acne, scars, pigmentation
- Aromatherapy (calming, stress relief)
- Used in perfumes and soaps
- Antiseptic and anti-inflammatory
- Traditional medicine for cooling and healing

8. Rose water: [32,33,34]



Common name: Rose water

Biological source: Rosa damascena

Kingdom: Plantae

Class: Magnoliopsida

Order: Rosales

Family: Rosaceae

Uses:

- Natural toner (tightens pores)
- Reduces redness and irritation
- Hydrates and refreshes skin
- Helps soothe acne and inflammation
- Anti-aging due to antioxidants

7. Coconut oil :[29,30,31]



Common name: Coconut oil

Biological name: From Cocos nucifera

Kingdom: Plantae

Class: Liliopsida

Order: Arecales

Family: Arecaceae

Uses:

- Hair conditioning and growth
- Skin moisturizer
- Antifungal and antibacterial
- Cooking oil (healthy fats)
- Wound healing
- Used in soaps, cosmetics, and massage oils

9.Olive oil: [35,36,37]



Common name: Olive oil

Biological name: Olea europaea

Kingdom: Plantae

Class: Magnoliopsida

Order: Lamiales

Family: Oleaceae

Uses:

- Moisturizes and softens skin
- Anti-aging (rich in vitamin E and antioxidants)
- Helps treat dry skin and eczema
- Used in soaps, lotions, and creams

V. FORMULATION OF HEBAL FACA SERUM:

Sr.no	Ingredient	Quantity Taken30ml
1.	Aloe vera	10ml
2.	Green Tea	2ml
3.	Turmeric	0.1g
4.	Rosehip oil	5ml
5.	Licorice	0.3g
6.	Sandalwood oil	qs
7.	Coconut oil	3ml
8.	Olive oil	2ml
9.	Rose water	6ml

VI. METHODS OF PREPARATION:

1) Preparation of water phase:

Take clean, sterilized paper beakers and wipe with alcohol.

↓

Add 10 ml aloe vera + 6 ml rose water + 8 ml green tea extract.

↓

Incorporate the actives: Add 0.1 g turmeric + 0.3 g licorice (liquorice) powder.

↓

Mix thoroughly.

2) Preparation of oil phase Take beaker.

↓

Add 3 ml rosehip oil + 3 ml coconut oil + 3 ml olive oil. (the “wash with water” line is crossed out)

↓

Add sandalwood oil.

↓

Combine both phases.

↓

Pour oil phase into water phase.

VII. APPLICATION OF HERBAL FACE SERUM:
[38,39]

Face serum is a lightweight water-based skincare essential that targets different skin concerns. There are various kinds of serums that are made with breakthrough or gamechanging ingredients like niacinamide, hyaluronic acid, vitamin C, AHAs and BHAs. If you truly want to reap the benefits of a face serum, you must know how to choose one that.

- How many do we really need in our routine?
- When and how should we use them?
- When should I apply a serum? Is it when the skin is damp? If so, why?

Once the serum has been applied with upward sweeping motions to the face, from the décolletage and neck and has fully absorbed, eye cream, moisturizer, and sunscreen can be applied.

Unlike other skincare products like thick face creams and moisturizers that you massage into your skin in an upward direction, serums are meant to be applied to your face in small tapping motions with your fingertips or your palms. Do not rub your skin excessively, let the serum absorb into your skin on its own.

VIII. EVALUATION TEST OF HERBAL FACE
SERUM: [40,41]

Physical Evaluation:

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

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.

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.

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 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 becomes less. Mix 1 ml dilute in 20 ml of liquid nutrient agar medium at 45. Shake the liquid agar nutrient agar

medium & pour in a sterile petri plate, solidify and incubate it.

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 are 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.

IX. CONCLUSION

The aim of this report was to study about what exactly are facial serums and their history along with their overall importance. The study includes its proper selection and correct sequence of application. With tremendous amount of serums available in the market for each and every skin type and skin problem. it mixes a special water blend full of natural extracts with a rich oil blend, creating a unique and smooth product that gives both skin benefits and deep nourishment at the same time.

It is a natural two-phase skin-brightening and nourishing serum.

skin health is a crucial element of the altogether health of the body and having a proper skin care routine with an accurate serum for you, can sustain the ageing skin and ward off the ongoing damage. It eliminates fine lines, wrinkles, dark spots, and further blemishes if paired with appropriate moisturizer and sunscreen. This concludes that a facial serum is a boon for the cosmetic community and its addition is crucial in the care regime.

REFERENCE

- [1] Surjushe, A., Vasani, R., & Saple, D. G. (2008). Aloe vera: A short review. *Indian Journal of Dermatology*.
- [2] Katiyar, S. K. (2003). Green tea polyphenols and skin protection. *International Journal of Dermatology*.
- [3] Hewlings, S. & Kalman, D. (2017). Curcumin's dermatological benefits. *Foods*.
- [4] Çelik, P. et al. (2019). Rosehip oil in cosmetic formulations. *Journal of Cosmetic Dermatology*.
- [5] Saeedi, M. et al. (2018). Licorice applications in skincare. *Iranian Journal of Pharmaceutical Research*.
- [6] Dureja, H. et al. (2005). Cosmeceuticals: An expanding concept. *Indian Journal of Pharmacology*.
- [7] Sonti S, Makino ET, Garruto JA, Gruber JV, Rao S, Mehta RC. Efficacy of a novel treatment serum in the improvement of photodamaged skin. *Int J Cosmet Sci* 2013; 35:156-62.
- [8] EPRA International Journal of Multidisciplinary Research (1) MR) ISSN (Online): 2455-3662.
- [9] Begoun P, The original beauti bible (skincare facts for ageless beauty), United State book trade publisher group, west 1700 fourth street Berkeley, California. Edition 1st, 2009: 113.
- [10] Purva S Rajdev, Prof.Gaikwad S.D, Miss Akanksha A Somvanshi. Miss.Shubhangi S Gunjal, Formulation and evaluation of face serum, 2011: 1: 19-20.
- [11] Kokate CK, Purohit AP, Gokhale SB. Pharmacognosy. Nirali Prakashan.
- [12] EMA (European Medicines Agency). "Aloe vera (Aloe barbadensis) monograph"
- [13] Eshun K, He Q. "Aloe vera: a valuable ingredient." *Critical Reviews in Food Science and Nutrition*, 2004.
- [14] Trease & Evans. Pharmacognosy, Elsevier.
- [15] Chacko SM et al. "Beneficial effects of green tea." *Journal of Nutrition*, 2010.
- [16] Duke's Phytochemical and Ethnobotanical Database (USDA).
- [17] Tyler VE, Brady LR, Robbers JE. Pharmacognosy.
- [18] Aggarwal BB et al. "Curcumin: The Indian solid gold." *Advances in Experimental Medicine and Biology*, 2007.
- [19] WHO Monographs on Selected Medicinal Plants, Volume 1.
- [20] Petruzzello M. "Rose hip." *Encyclopaedia Britannica*.
- [21] Chrubasik C et al. "A systematic review on rose hip." *Phytotherapy Research*, 2008.
- [22] Trease & Evans. Pharmacognosy (botanical classification)

- [23] WHO Monographs on Selected Medicinal Plants, Volume 2.
- [24] Fiore C et al. "Licorice and its active compounds." Journal of Ethnopharmacology, 2005.
- [25] Kokate, Purohit & Gokhale. Pharmacognosy.
- [26] Basar S. "Sandalwood oil and its terpenoids." Journal of Essential Oil Research, 2005.
- [27] Indian Council of Forestry Research Publications (ICFRE) – Sandalwood monograph.
- [28] Trease & Evans. Pharmacognosy.
- [29] DebMandal M, Mandal S. "Coconut oil: health benefits." Asian Pacific Journal of Tropical Medicine, 2011.
- [30] USDA Plant Database: *Cocos nucifera* taxonomy.
- [31] Pharmacognosy textbooks for botanical classification.
- [32] Boskabady MH et al. "Pharmacological effects of *Rosa damascena*." Iranian Journal of Basic Medical Sciences, 2011.
- [33] WHO monograph: *Rosa* species.
- [34] Trease & Evans. Pharmacognosy.
- [35] Owen RW et al. "Olive oil minor components." Biochemical and Biophysical Research Communications.
- [36] Boskou D. Olive Oil: Chemistry and Technology.
- [37] USDA/GRIN Taxonomy database – *Olea europaea*.
- [38] Glaser D. (2003). Anti-aging products and cosmeceuticals. Facial Plastic Surgery Clinics of North America. 12(3):363-372.
- [39] 25. Vashist H. Sharma D. Pharmacognostical aspects of *glycyrrhiza glabra*. Asian J Pharm Clin Res, 2013; 6(4): 55-9.
- [40] <https://formulabotanica.com/organicfacial-serum-formulation/>
- [41] What is a Serum? Benefits, How to Use, Best Types by fleur and bee.