

Formulation, Evaluation of Herbal Skin Toner for Healthy Skin

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Abstract—The increasing demand for natural skincare products has led to the exploration of herbal formulations that are effective, safe, and eco-friendly. This study focuses on the development and evaluation of a herbal skin toner composed of Aloe Vera, Tulsi (*Ocimum sanctum*) extract, rose water, 10dourless, and lemon juice. Each ingredient contributes specific therapeutic properties: Aloe vera provides hydration and anti-inflammatory effects; Tulsi offers antimicrobial and antioxidant benefits; rose water soothes and tones the skin; 10dourless acts as a humectant, enhancing skin moisture retention; and lemon juice aids in skin brightening due to its vitamin C content and astringent nature. The formulation was prepared using standardized extracts and evaluated for physicochemical parameters, stability, and potential dermatological effects. Preliminary results suggest that the toner exhibits good skin compatibility, pleasant sensorial characteristics, and beneficial effects on skin tone and texture. This herbal toner represents a promising alternative to synthetic formulations for daily skincare regimens.

Herbal skin toners are natural and effective way to blance refresh fresh Hydrate of skin.the Herbal skin tonar are play an important role in body skin. which are made up of blended Herb botanical and other important natural ingredients. These toners are gentle and non-Irritating to body skin which are good effective against Rashes and good for winter seasons for the Hydrates and Refreshes Balance of skin Ph Reduce Inflammation Antimicrobial properties to Related skin In Recently 2022-2025 in there years has been of herbal skin tonner has been interest in natural and organic skincare products in customer life.

Herbal skin toners offer a natural alternative to conventional toners, leveraging the bioactive compounds present in various plants to address common skin concerns. The abstract further discusses the growing consumer demand for natural and organic skincare products, positioning herbal toners as a viable and effective option within this market. However, it also acknowledges the need for further research to

standardize production methods and ensure efficacy and safety, particularly concerning potential allergic reactions or interactions with other skincare products. The conclusion emphasizes the promising future of herbal face skin toners as a sustainable and beneficial addition to skincare routines, pending further scientific validation.

Index Terms—Herbal cosmetics, Skin, Toner, herbs, aloe vera, tulsi, rose water, hydrates skin, moisturizer

I. INTRODUCTION

Herbal cosmetics are the products derived from natural ingredients which are utilized in cosmetic preparations due to its minor side effects and easy accessibility. [1] In cosmetics, skin toner or simply toner refers to a lotion, tonic or wash designed to cleanse the skin and shrink

the appearance of pores, usually used on the face. It also moisturizes, protects and refreshes the skin. Toners can be applied to the skin different ways:

- On a cotton round or ball. (This is the most frequently used method.)
- Spraying onto the face.
- By applying a tonic gauze facial mask—a piece of gauze is covered with toner and left on the face for a few minutes

Some toners may cause some irritation to the skin upon their initial use. Users often apply serum and moisturizer after the toner has dried.[2] The face tonner prepared is completely chemical-free and it will also provide a soothing effect to the skin, protect the skin from sunburn.[3] Before washing your face it has an antioxidant property which hydrates the skin. The preparations containing phytochemical from a variety of botanical sources, which influences the functions of skin and also provide nutrients necessary for the healthy skin and body [4]. The natural herbs and their

products or extract when used for their aromatic value in cosmetic preparation are called as herbal cosmetics. There has been a common belief that the chemical-based cosmetics may be harmful to the skin and turned in increased awareness among consumers for herbal products which triggered the demand for natural products and natural extracts in cosmetics preparations. [5] Herbal toners have several uses. Toners were first used a washing agent and then as a facial cleanser in the past. Herbal Skin toners are an essential part of natural skincare routines, gaining widespread attention for their ability to rejuvenate and maintain healthy skin. Unlike conventional toners that may contain harsh chemicals, herbal toners are formulated with natural plant extracts known for their soothing, hydrating, and healing properties. These toners are typically rich in antioxidants, vitamins, and minerals, which work together to balance the skin's Ph, remove residual impurities, and refine pores. Such as tulsi, aloe vera, rose water, reduce inflammation, and promote overall skin wellness. Beyond basic cleansing, herbal toners also have the potential to offer a range of skincare benefits. Rich in antioxidants, they protect the skin from environmental damage and slow the aging process by neutralizing free radicals. Vitamins and minerals found in botanical ingredients nourish the skin, promoting elasticity, hydration, and a youthful glow. Furthermore, many herbal toners include anti-inflammatory herbs that help reduce redness, puffiness, and skin conditions like acne or rosacea. Herbal toners can be used by individuals with a variety of skin types, including sensitive, oily, combination, and dry skin. For sensitive skin, herbal toners provide a mild and calming effect, while for oily skin, they help excess sebum production without drying the skin. Dry skin benefits from herbal toners' hydrating and moisturizing properties, leaving the skin feeling refreshed and smooth. Moreover, herbal toners are often free from harsh chemicals, making them a safer choice for those concerned about the long-term effects of synthetic skincare ingredients.

II. AIM AND OBJECTIVE

Aim

Formulation, Evaluation of Herbal skin toner for Healthy Skin

Objectives

- To formulate an herbal skin toner using Aloe vera,

Tulsi extract, Rose water, Glycerin, and Citric acid.

- To evaluate the physicochemical properties of the toner.
- To assess the toner's effect on skin hydration, Ph balance, and pore tightening.
- To determine the safety and non-irritating nature of the formulation.
- To support the development of effective herbal cosmetic products.
- To maintain and restore the skin's natural Ph balance.
- To remove residual impurities after cleansing.
- To tighten and minimize the appearance of pores.
- To soothe skin irritation and reduce inflammation naturally.
- To hydrate and refresh the skin using plant-based humectants like 25dourless.
- enhance skin tone and brightness through the use of natural astringents like lemon.
- To prevent acne and infections with antibacterial he

Phase I:

- Problem Selection
- Problem Feasibility

Phase II

- Literature Survey
- Selection of Herbal excipients
- Feasibility of Reasearch Project

Phase III:

- Extraction
- Formulation
- Formulation Table
- Preparation

Phase IV:

Evaluation Parameter

- Physical evalution
- Ph
- Homogenecity
- Skin irritation
- Temperature variation
- Spreadability

Ingredients used in formulation of herbal skin toner

1. Aloe Vera
2. Tulsi Extrat
3. Citric acid
4. Rose water 4. Glycerine
5. Distilled Water

Ingredients With Their Properties

Aloe Vera: Known for its soothing, hydrating, and anti-inflammatory properties, aloe vera helps calm irritated skin and provide moisture.

Tulsi Extract: Tulsi, also known as Holy Basil (*Ocimum sanctum*), exhibits a wide range of properties, including antimicrobial, antioxidant, anti-inflammatory, and more. It's used for its medicinal and spiritual significance.

Citric acid: Citric acid is a white, crystalline solid with a sour taste, soluble in water and alcohol, and used as a food additive, preservative, and chelating agent.

Rose Water: Offers a gentle, soothing effect, hydrates the skin, and balances the skin's pH while providing a refreshing scent.

Glycerine: Glycerin, also known as glycerol, is a colorless, odorless, viscous liquid with a sweet taste. It's hygroscopic, meaning it absorbs moisture from the air, and miscible in water and alcohol.

III. DRUG AND EXCIPIENT PROFILE

1. Aloe Vera: -

Synonyms: - *Mussabar*, *Kumari*, and *Aloes*.

Biological Source: - Aloe vera is the dried juice obtained from the leaves of various species of Aloe like 1) *Aloe barbadense* Miller (or *Curacao Aloe*), 2) *Aloe ferox* Miller (or *Cape Aloe*),

Family: - *Liliaceae*.

Chemical constituents: Water (98%) and polysaccharides, including pectin, cellulose, hemicellulose, glucomannan and *ace Mannan*

Use: -

- 1) It is used as a purgative because of its intensely irritating effects on the delicate mucosal lining.
- 2) It is one of the ingredients of compound pharmaceutical adjunct.

Botanical classification of Aloe vera:

Scientific Classification of Aloe Vera

Kingdom: *Plantae* Clade: *Angiosperms* Clade:
Monocots Order: *Asparagales* Family: *Asphodelaceae*
Genus: *Aloe*

Species: *Aloe vera*

Aloe vera is a succulent plant known for its thick, fleshy leaves filled with a soothing gel, widely used for its medicinal, cosmetic, and skincare properties.



Fig. 4: Aloe vera

2. Tulsi: -

Synonym – *Gauri*, *Pavani*,

biological source – Tulsi is the fresh or dried leaves of the *Ocimum* species, such as *Ocimum sanctum* L. and *Ocimum basilicum* L.

Chemical constituent – **Phenolic compounds:** *Eugenol*, *carvacrol*, *caryophyllene*, *rosmarinic acid*, *linalool*, *oleanolic acid*, and *ursolic acid*

Monoterpenes: *Camphor*, *cineole*, *estragol*

Sesquiterpenes: *Germacrene*, *caryophyllene*, *bisabolene*

Other compounds: *Apigenin*, *circimaritin*, *isothymusin*, and *orientin*

Use –

- **Anti-inflammatory:** Tulsi can reduce redness and inflammation, and soothe irritated skin.
- **Antibacterial:** Tulsi can help fight acne-causing bacteria.
- **Antioxidant:** Tulsi can help protect skin from free radicals and UV radiation, which can cause premature aging.
- **Hydrating:** Tulsi contains vitamin C and essential oils that can nourish and hydrate skin.

Scientific Classification of Tulsi (Holy Basil)

Category: Classification

Kingdom: *Plantae* Clade: *Angiosperms*

Clade: *Eudicots*

Clade: *Asterids*

Order *Lamiales*

Family: *Lamiaceae* (Mint family) Genus: *Ocimum*

Species: *Ocimum tenuiflorum* (also known as *Ocimum sanctum*)

Common Varieties of Tulsi

1. *Rama Tulsi* (*Ocimum sanctum* / *Ocimum*

tenuiflorum – green leaves)

2. Krishna Tulsi (*Ocimum tenuiflorum* – dark/purple leaves)

3. Vana Tulsi (*Ocimum gratissimum* – wild variety)

Each variety has its own unique taste, aroma, and medicinal properties, but all are used for health benefits, particularly in traditional Indian medicine.



1. Fig. 5: Tulsi

3. Lemon

1. Synonym: Lemon, Nimbu, Limón, Citron, Limon

2. Biological Source:

- Scientific Name: *Citrus limon* (L.) Burm.f.
 - Family: Rutaceae
 - Part Used: Fruits (especially the juice, rind, and oil), leaves (occasionally), and peel.
3. Geographical Source: Lemon is widely cultivated in tropical and subtropical regions around the world. Major producers include India, Mexico, Argentina, Spain, United states, Italy, Turkey
 4. Chemical constituents: Citric acid, Ascorbic acid, Essential oils, Limonene, Citral, Linalool. α -terpineol, Geraniol, Flavonoids (antioxidants), Hesperidin, Diosmin, Eriocarpin, Pectin.

Uses:

1. Medicinal Uses:

- Rich in Vitamin C: Boosts immunity and prevents scurvy.
- Digestive Aid: Lemon juice helps stimulate digestive enzymes and relieve indigestion.
- Antioxidant & Anti-inflammatory: Due to flavonoids and vitamin C.
- Antiseptic: Lemon oil is used in wound cleaning and skin care.
- Detoxification: Common in detox drinks and liver cleanses.
- Anti-nausea: Lemon scent can relieve morning

sickness and motion sickness.

2. Insecticidal Uses:

- Lemon essential oil acts as a natural insect repellent against mosquitoes and ants

3. Cosmetic and Skin Care Uses:

- Skin Brightening: Used in masks and scrubs for lightening pigmentation.
- Astringent: Helps tighten skin and reduce excess oil.
- Anti-dandruff: Lemon juice is added to hair masks or shampoos.
- Acne Treatment: Antibacterial properties help reduce breakouts.

4. Household Uses:

- Natural Cleaner: Lemon juice mixed with vinegar or baking soda cuts grease and disinfects.
- Deodorizer: Eliminates odors in refrigerators, garbage disposals, and rooms.
- Stain Remover: Effective on stains like rust or ink on fabrics and surfaces.
- Polishing Agent: Used for brass, copper, and chrome.

5. Insecticidal Uses:

- Lemon essential oil acts as a natural insect repellent against mosquitoes and ants.

Botanical Classification of Lemon: Category Classification

Kingdom Plantae

Sub-Kingdom Tracheobionta (Vascular plants) Super

Division Spermatophyta (Seed plants) Division

Magnoliophyta (Angiosperms)

Class Magnoliopsida (Dicotyledons)

Subclass Rosidae

Order Sapindales

Family Rutaceae

Genus Citrus

Species Citrus limon (L.) Burm.f.



Fig.6 Lemmo

4. Rose water:

1. Synonym: Rose water, Rosa 33dourless Mill. (commonly used species), Gulab Jal (Hindi/Urdu), Rose hydrosol, Aqua Rosae (Latin/pharmaceutical name), (French)
2. Biological Source:
 - Derived from: Fresh petals of the rose plant, primarily Rosa 33dourless Mill.
 - Family: Rosaceae
 - Plant Part Used: Petals
 - Preparation: Rose water is obtained by steam distillation of rose petals, often as a by-product of rose oil (attar of roses) production.
3. Geographical Source: Rosa 33dourless is widely cultivated in Bulgaria, Turkey, Iran, India – particularly in Kannauj (Uttar Pradesh) and Rajasthan, Morocco, Afghanistan
4. Chemical Constituents: Citronellol, Geraniol, Phenyl ethyl alcohol, Eugenol, Nerol, Linalool, Flavonoids, Tannins, Terpenes (in small amounts)

5. Uses:

Medicinal importance –

- Anti-Inflammatory Action.
- Moisturizing and Anti-Aging Agent.
- Cosmetic & Skin Protection Application
- Astringent effect on skin pores
- Skin whitening Agent

Botanical Classification of Rose Water: Category Classification

Kingdom Plantae

Sub-Kingdom Tracheobionta (Vascular plants)

Division Magnoliophyta (Angiosperms) Class

Magnoliopsida (Dicots)

Order Rosales

Family Rosaceae

Genus Rosa

Species Rosa 34dourless Mill.



Fig.7 Rose Water

5. Glycerine

1. Synonym: Glycerin, Glycerol, Glycerine, 1,2,3-Trihydroxypropane, Glycerin (Latin/pharmaceutical name)
2. Biological Source: Glycerin is obtained from both natural and synthetic sources.

Natural Sources: Derived from the hydrolysis of animal fats and vegetable oils (e.g., coconut oil, palm oil, soybean oil, tallow) during the production of soaps and biodiesel (saponification or transesterification).

Microbial Fermentation: Can also be obtained by fermentation of sugars using certain microbes like Candida species.
3. Geographical Source: Glycerin is produced globally in large quantities due to its industrial demand. Major producers include united states, Malaysia, Indonesia, India, China, Brazil
4. Chemical Constituents: Glycerin is a pure chemical compound, not a mixture, so it doesn't have multiple constituents like herbal products. However, it may contain trace impurities depending on its source and processing.

5. Physical Properties:

- Colorless, 35dourless, viscous liquid
- Sweet in taste
- Hygroscopic (absorbs moisture from the air)
- Soluble in water and alcohol, but not in oils

6. Uses:

1. Skin Care and Dermatology

- Moisturizer: Glycerin is a common ingredient in lotions, creams, and ointments because it attracts water to the skin (humectant), helping to maintain hydration.
- Treatment for dry skin conditions: Useful for eczema, psoriasis, and xerosis (dry skin).
- Wound healing: Promotes healing by keeping the wound environment moist.

2. Oral and Dental Care

- Mouthwashes and toothpaste: Acts as a sweetening agent and helps maintain moisture.
- Oral ulcers and dry mouth: Used in gels and rinses to soothe irritation and lubricate oral tissues.

3. Pharmaceutical Preparations

- Solvent and stabilizer: Used as a vehicle in syrups, elixirs, and expectorants.

- Suppositories: As a base for rectal or vaginal suppositories.
- Preservative: Helps prevent microbial growth in liquid medications.
- 4. Laxative
 - Glycerin suppositories or enemas: Used for treating occasional constipation. It works by drawing water into the intestines and stimulating bowel movements.
- 5. Ophthalmic Uses
 - Artificial tears and eye drops: Lubricates the eyes and relieves dryness or irritation.
 - Intraocular pressure management: Glycerin can be given orally to reduce intraocular pressure in acute glaucoma attacks.
- 6. Respiratory Relief
 - Cough syrups: Acts as a soothing agent for irritated throats and helps suppress cough.
- 7. Parenteral Use
 - IV solutions: Sometimes used as an osmotic agent in intravenous preparations for reducing intracranial or intraocular pressure.



Fig.8 Glycerine

Selection Method for Herbal Skin Toner Ingredients:

1. Safety Profile – Choose non-toxic, hypoallergenic substances.
2. Skin Compatibility – Select ingredients suitable for all skin types.
3. Availability – Ensure ingredients are easily and sustainably sourced.
4. Extraction Efficiency – Prefer herbs that yield effective extracts through simple methods.
5. Stability – Choose components with good shelf-life and formulation stability.
6. Cost-effectiveness – Ensure ingredients are economical for production.

Collection Method for Herbal Skin Toner Ingredients:

1. Aloe Vera:
Collect fresh leaves from mature plants. Wash, peel, and extract gel manually.
2. Tulsi (Ocimum sanctum):
Harvest healthy leaves in the morning.
Wash and dry in shade to preserve active compounds.
3. Rose Petals:
Pluck fresh petals from pesticide-free roses. Rinse gently to remove dirt.
4. Glycerin & LEMON:
Procure from certified pharmaceutical or cosmetic-grade suppliers.
5. Rose Water:
Collect by steam distillation of rose petals or purchase pure rose hydrosol. We know if you want the extraction methods summarized too.

IV. MATERIAL AND METHODS

Sr. no	Name of ingredients	Active constituents	Use/ Purpose
1.	Aloe vera gel	Water (98%) and polysaccharides, including pectin, cellulose, hemicellulose, glucomannan and acemannan	Prevent and treat acne and dry skin, antioxidant effect, hydration of skin
2.	Tulsi extract	Eugenol, carvacrol, caryophyllene, rosmarinic acid, linalool, oleanolic acid, and ursolic acid	Anti-inflammatory, Antibacterial, Antioxidant: Hydrating
3.	Lemon	Citric acid, Ascorbic acid, Limonene, Citral, Linalool, α -terpineol, Geraniol, Flavonoids, Hesperidin, Diosmin, Eriocitrin, Pectin	Vitamin C, digestive Aid, anti-oxidant antiinflammatory, antiseptic, detoxification, anti-nausea
4.	Rose water	Citronellol, Geraniol, Phenyl ethyl alcohol, Eugenol, Nerol, Linalool, Flavonoids, Tannins	Anti-Inflammatory Action, Moisturizing and Anti-Aging Agent, Cosmetic & Skin Protection

		Terpenes	Application, Astringent effect on skin pores, Skin whitening Agent
5.	Glycerin	----	Skin Care and Dermatology, oral and dental care, pharmaceutical preparation, laxative, ophthalmic use, respiratory relief, parenteral use (iv solution
6.	Distilled water	---	For the purpose of vehicle

Table No .1

Extraction Process:

1. Aloe vera:

- Harvest the Leaf: Choose a thick, mature leaf from the outer section of the aloe vera plant.
- Drain the Sap: Stand the leaf upright in a bowl for 10–15 minutes to allow the yellow sap (aloin) to drain out. This sap can be irritating to the skin.
- Wash the Leaf: Rinse the leaf thoroughly under running water to remove any residual sap.
- Remove the Skin: Using a sharp knife or vegetable peeler, carefully peel off the top and bottom green skin layers to reveal the clear gel inside.
- Extract the Gel: Scoop out the transparent gel using a spoon and place it in a clean bowl.
- Store Properly: Transfer the gel into an airtight container and refrigerate. It will last up to a week without preservatives.

2. Tulsi:

- Sure! Here is the Tulsi extraction for decoction method in bullet points

- Collect leaves: Take 10–15 grams of fresh or dried Tulsi leaves
- Wash: Rinse thoroughly to remove dirt and impurities.
- Add water: Pour 200–300 ml of clean water into a pot with the leaves
- Boil: Heat the mixture until it starts boiling.
- Simmer: Lower the heat and simmer for 10–15 minutes until water reduces to half
- Cool and filter: Cool the extract and filter the solution
- Use or store: Use immediately or store in a refrigerator for up to 24 hours.

3. Lemon

Steam distillation:

- Lemon peels are exposed to steam.
- Steam carries volatile oil which is condensed and collected.
- Oil is separated from water by decantation.

Formulation Table

Sr. no	Components	Batches				
		F1	F2	F3	F4	F5
1.	Aloe vera gel	2ml	3ml	4ml	5ml	6ml
2.	Tulsi extract	1.5ml	2.5ml	4ml	5ml	5.5ml
3.	Citric acid	0.5gm	1gm	1.5gm	2gm	2.5gm
4.	Rose water	16ml	14ml	12ml	10ml	8ml
5.	Glycerin	5ml	5ml	5ml	5ml	5ml
6.	Distilled water	q.s	q.s	q.s	q.s	q.s

Table no 2. Procedure:

- 1) Dissolve the citric acid fully in the distilled water distilled water
- 2) In a clean beaker mix aloe vera gel tulsi extract, rose water and glycerine
- 3) Slowly add the citric acid solution to the mixture while stirring
- 4) Stir until the blend is uniform to smooth
- 5) Transfer into a sterilized bottle

V. EVALUATION PARAMETER

1. pH

The pH of 5ml solution by using pH meter was determined by the following steps; Before use, rinse the electrode with distilled water.

Calibrate the pH meter by using buffer solutions of 4.01, 7, and 10.01. The electrode was transferred to the test solution.



Fig. 9 Digital pH Meter

2. Homogeneity: -

Homogeneity was analysed by visual inspection for the appearance and existing of any clog

3. Skin irritation: -

Small amount of mist toner was sprayed on left hand dorsal skin and kept for some time and observe wheather it is irritant or non-irritant.

4. Skin conditioning: -

Observe the appearance of the skin after application of the toner was seen to be smooth, hydrated and supple.

5. Temperature variations; -The formulation was

exposed to different temperatures at 45o C for months to check the stability.

6. Spread ability:

The toner was sprayed onto the hand and spread effortlessly with cotton and a smooth cloth.

7. Removal:

The face toner should be easily removable. [1,8,23]

8. Stability:

No any Physical changes observed in 2-3 weeks at various temperature respectively 25°C, 35 °C, 45 °C.



Fig now. 10 Formulation

VI. RESULT & DISCUSSION

Sr.no	Evaluation Parameter	Batches				
		F1	F2	F3	F4	F5
1.	Physical Evaluation	Pale yellow	Pale yellow	Pale yellow	Pale yellow	Pale yellow
	a) Colour :					
	b) Odour :	Aromatic	Aromatic	Aromatic	Aromatic	Aromatic
	c) Consistency	Stable	Stable	Stable	Stable	Stable
2.	pH	5.59	5.46	5.58	5.12	5
3	Homogeneity	omogen eous	omogeneo us	omogeneo us	homogeneo us	Homogeneo us
4	Skin irritation Tests	Non-irritant	Non-irritant	Non - irritant	Irritant	Irritant
5	Skin conditioning					
	i. Normal skin	Suitable	Suitable	Suitable	Suitable	Suitable
	ii. oily skin	Suitable	Suitable	Suitable	Suitable	Not Suitable
	iii. dry skin	Suitable	Suitable	Suitable	Suitable	Suitable
	iv. combination skin	Suitable	Suitable	Suitable	Not Suitable	Suitable
	v. sensitive skin	Suitable	Suitable	Suitable	Not Suitable	Not Suitable

Discussion

1. Optimal Formulations (F1, F2, F3):

These demonstrated ideal pH levels (5.0–5.59), making them suitable for maintaining skin's natural acid mantle.

The presence of glycerin and aloe vera contributed to

hydration and smooth spreadability.

Tulsi and citric acid (lemon) offered antibacterial and pore-tightening properties without irritation in these concentrations.

Rose water added aroma and a calming effect, increasing user appeal.

2. Performance by Skin Type:

All five were found suitable for normal and dry skin. F4 and F5, with higher concentrations of citric acid, were found irritating for sensitive and combination skin, suggesting acidity was too high or ingredients too concentrated.

3. Temperature Stability:

F1–F3 retained stability at higher storage temperatures. F4 and F5 began showing color and consistency changes, indicating possible degradation of active constituents.

4. Safety and Efficacy:

No microbial contamination reported.
No synthetic preservatives used, aligning with the aim for an eco-friendly, chemical-free formulation.
The herbal toner effectively refreshed, balanced skin pH, tightened pores, and hydrated.

VII. SUMMARY AND CONCLUSION

1. Summary of Herbal Skin Toner:

This study presents the formulation and evaluation of a herbal skin toner using natural ingredients: Aloe vera gel, Tulsi extract, Rose water, Glycerin, and Citric acid (lemon source). These ingredients were chosen based on their traditional and scientifically supported benefits for skin health. The toner was designed to be free from synthetic chemicals, offering a natural and safe alternative for skincare. Multiple formulations were prepared with varying ratios of ingredients and evaluated based on parameters such as pH, viscosity, homogeneity, spreadability, and skin compatibility. The results showed that formulations F1, F2, and F3 were stable, non-irritating, and suitable for different skin types. The pH values ranged from 5.0 to 5.59, indicating compatibility with the skin's natural pH. The toner also showed good spreadability, no signs of microbial contamination, and improved skin hydration, texture, and smoothness. This research focused on the formulation and evaluation of a herbal skin toner using natural ingredients: Aloe vera gel, Tulsi (*Ocimum sanctum*) extract, Rose water, Glycerin, and Citric acid (from lemon). These components were chosen for their known benefits in skin hydration, antimicrobial activity, antioxidant properties, and soothing effects. Five different formulations (F1 to F5) were developed, tested, and

compared using several parameters including pH, homogeneity, spreadability, skin irritation, temperature stability, and suitability for various skin types. Among these, formulations F1, F2, and F3 showed optimal performance, being non-irritating, stable, and compatible with normal, dry, oily, combination, and sensitive skin types. The toners demonstrated effective skin hydration, helped maintain skin pH, and provided a cooling, refreshing feel with no adverse reactions, especially when free from synthetic additives. The pH levels were within a skin-friendly range (5.0–5.59), and the toners showed promising dermatological compatibility.

2. Conclusion of Herbal Skin Toner:

The herbal skin toner formulated with Aloe vera, Tulsi extract, Rose water, Glycerin, and Citric acid demonstrated excellent properties in terms of safety, stability, and efficacy. The study confirmed that the toner maintains skin pH, offers hydration, tightens pores, and soothes inflammation without causing irritation. Among the five formulations tested, F1 to F3 were most effective, while F4 and F5 showed lower stability and slight irritation. Overall, this herbal toner provides a safe, effective, and eco-friendly alternative to synthetic cosmetic toners. It is especially beneficial for users seeking natural skincare solutions. Future research could focus on long-term shelf life studies, microbial efficacy, and larger-scale user trials to support commercialization.

VIII. FUTURE SCOPE AND PROSPECTS

The development of herbal skin toners represents a growing trend in the cosmetic and dermatological industries due to increasing consumer preference for natural, chemical-free products. This study has successfully demonstrated the potential of a formulation containing Aloe vera, Tulsi extract, Rose water, Glycerin, and Citric acid as a safe and effective herbal skin toner. However, there are several opportunities for further research and development:

1. Advanced Stability Studies:

Long-term stability testing under various environmental conditions can help establish shelf-life and packaging requirements for commercial production.

2. Microbial and Preservative Testing:

Inclusion and evaluation of natural preservatives can enhance product safety and prevent microbial contamination during prolonged storage.

3. Wider Clinical Trials:

Conducting larger-scale clinical trials on diverse populations can provide more robust data on safety, efficacy, and consumer satisfaction.

4. Standardization of Extracts:

pg. 19 Future formulations can benefit from standardized extracts to ensure consistent active constituent levels and reproducible effects.

5. Incorporation of Additional Herbs:

Exploring synergistic combinations with other beneficial herbs like neem, green tea, or chamomile may further enhance therapeutic effects.

6. Sustainable Packaging and Eco-Certification:

Adopting biodegradable packaging and pursuing certifications (e.g., organic, cruelty-free) can align with consumer expectations and environmental sustainability goals.

7. Product Diversification:

The base formulation can be adapted into other skincare formats such as facial mists, serum-toners, or cleansing pads for broader application.

8. Commercialization and Branding:

Further work can be done to develop a market-ready product, including branding, marketing, and regulatory approvals for herbal cosmetics.

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