



Formulation and Evaluation of Herbal Toner: A Review

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ABSTRACT

Skincare products demand is increasing globally due to the development of new innovative skin care products having multiple benefits with less side effects. Natural cosmetics are always proven to be safer and more effective. They have minimum side effects and are mostly trusted cosmetics among the consumers. Their demand is increasing on a global scale, and they provide major turnovers. Toners are a part of daily skincare routine. Toners are applied after cleansing the skin with a cleanser or after the exfoliation of skin. They provide hydrating, soothing effect and astringent effect to the skin. Toners are used for rehydrating the skin, balancing skin pH and tightening skin pores. Toners are liquid preparations. They are alcohol- based or water-based formulations.

Keywords: Herbal toner, Alum toner, Cucumber toner, Convolvus prostrate flower, Lemon grass, Sugarcane juice.

INTRODUCTION

People have been enhancing their attractiveness with naturally occurring materials since ancient times. It is well known that cosmetics are items meant to emphasize and impart attractiveness to the users. In the past, cosmetics were mostly made of naturally occurring material, but as time went on and technology advanced, new chemicals emerged that are claimed to improve or impart attractiveness, leading to its use as cosmetics. These chemical-based products can make us look beautiful for a short while, but if we use them frequently, our skin will suffer. Today's cosmetics sector primarily focuses on the preparation of herbal goods due to the many adverse impacts associated with the use of chemical-based products. The prepared face toner includes no chemicals and will have a calming effect and protects skin from sunburn^{1,2}

Basic structure of skin:

The skin is the largest organ of the body with a total area of about 20 square feet. The skin protects us from microbes and the elements, helps regulate body temperature and permits the sensations of touch, heat, and cold.

Skin has three layers as follows:

1. The epidermis: the outermost layer of skin provides a waterproof barrier and creates our skin tone.
2. The dermis: beneath the epidermis, contains tough connective tissue, hair follicles, and sweat glands.
3. Hypodermis: The deeper subcutaneous tissue, is made of fat and connective tissue

Cosmetics:

A substance used to preserve the appearance of the human body that is produced from both naturally occurring and synthesized chemical ingredients is known

as cosmetics. Several cosmetics maintain the skin's state while protecting it. Cosmetics are substances applied to the human body to improve and beautify its look.²

Herbal cosmetics:

Herbal cosmetics are formulations made with phytochemicals derived from various plant sources, which impact skin functions while providing essential nutrients for maintaining healthy skin and body. Herbal cosmetics are made from natural herbs and their products or extracts that are used for their aromatic qualities in cosmetic preparation.^{3,4}

Herbal products are more in demand and readily available due to their reduced adverse effects. These days, herbal ingredients are used more often in cosmetic formulations since they are more effective and less harmful than synthetic one's. Looking more attractive, presentable, and beautiful than one's actual age these days has a direct impact on the market's need for cosmeceuticals.^{2,3}

Advantages of herbal cosmetics over synthetic: ^{1,2,10}

The ability of herbs to prevent sickness and promote health makes them valuable.

1. Natural products: Natural and free from any synthetic ingredients that could be fatal to the skin, herbal cosmetics are safe for skin care.
2. Safe to use: Use of natural cosmetics is protected. Dermatologists have evaluated and shown that these products are hypo-allergenic and safe to use at any time or place. They are composed of natural substances, so users don't have to be concerned about developing skin rashes or itching on their skin.
3. Compatible with all skin type: Irrespective of your skin tone, you may discover appropriate natural cosmetics like lipstick, eye shadow, and foundation. They are also safe to be utilized by women with sensitive or oily skin, so they



never have to be concerned about damaging their skin conditions.

4. Wide selection to choose form: Compared to synthetic items, these are less expensive. They are sold during sales at an affordable cost and are offered at reasonable costs. According to a WHO estimate, due to the negative consequences and growing expense of modern medicine, approximately 80% of the world's population takes their medical care from natural goods.

5. No side effects: Your skin may become irritated by synthetic beauty products, leading to breakouts. They could cause pore blockage, leaving your skin feeling greasy or dry. One can use natural ingredients at anytime and anywhere, since they ensure no side effects.

6. Cosmeceuticals: The beauty industry's fastest-growing category is skincare. Cosmeceuticals are cosmetic-pharmaceutical products designed to provide a specific result, such as sun protection or acne control and anti-wrinkle effects, to enhance the health and appearance of the skin.

Herbal Face Toner:

A toner is a completely liquid, water-based product that has active ingredients to cleanse the skin, maintain a stable pH, shrink pores, and give the skin an instant glow. It clears the debris and pollutants that are lodged in skin pores prior to cleansing your face. It has a significant positive influence

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on the appearance and aging of skin when added to a regular skincare regimen. Its antioxidant quality keeps the skin well hydrated.^{2,7,9}

Types of toners^{2,3,10}

1. Bracers or skin fresheners: This is a mild toner. The toner containing glycerine and water (humectant). Humectants hydrate the epidermis. The most well-known example of it is rosewater. It works best on skin types that are normal, dehydrated, and sensitive.

2. Skin tonics: Typically stronger, skin tonics contain a small amount of alcohol (20%), water, and an agent known to humectants. Orange flower water is an effective example of a skin tonic. It is okay to use skin tonics on oily skin.

3. Acid toner: Usually comprising alpha hydroxy acid or beta hydroxy acid, acid. The most often utilized alpha hydroxy acids are glycolic, lactic, and mandelic acids; these acids are most suited for exfoliating the skin's surface. The most popular beta hydroxy acid that is most effective at exfoliating the skin's deeper layers is salicylic acid.

4. Astringents: The strongest type of toner, astringents have a high percentage of alcohol (20–60%) together with water, antiseptics, and humectants. When they utilize a lot of alcohol, these can remove the skin's surplus protective lipids, which can cause irritation and damage to the skin.

Table 1: Literature Review

Sr.no	Title	Abstract	Author	Year
1	Formulation and evaluation of herbal face toner.	In that formulation, author had done the evaluation of face toner like physicochemical properties, surface tension, pH and stability. In that formulation aloe Vera, cucumber, pepper mint and lemon grass are used. The formulation has an ability to decrease face irritation and enhance the beauty. ²	Sapana Mhaske, Vaishnavi Wayle, Harshada Tribhuvane, Poonam Kute, Shital Gaikwad	June 2022
2	Formulation and physical characterization of herbal face gel toner.	The author had done the herbal face gel toner. In that formulation aloe Vera, honey, cucumber and rose water are used. The formulation has an ability to calming, soothing, astringent effect.	Vibhavari M Chatur, Sanjay G Walode, Siddhi A Awate, Minal U Gandhi and Vaishnavi S Thorat	2021
3	Formulation and Evaluation of Basic Parameters of Herbal Toner Mist for Skin.	The author had done the herbal mist toner which is natural freshener, rejuvenating, cleansing, calming and soothing effect. In that formulation mist, aloe Vera, cucumber and honey are used. ³	Vibhavari M Chatur, Sanjay G Walode, Siddhi A Awate, Minal U Gandhi and Vaishnavi S Thorat	30 May 2021
4	Formulation and evaluation of herbal face toner.	In that formulation, author had done the formulation and evaluation of herbal toner in which the sugar cane juice, pomegranate juice, tomato juice, lemon juice, mint and rose water are used. The formulation is used for Balancing the pH of skin, tightening the skin pores, reduce the irritation and rehydrating the skin. ⁴	Gunjal Shubhangi S, Somvanshi Akanksha A, Rajdev Purva S, Walunj Kajal, IJARSCT	June 2022
5	Formulation and evaluation of Alum toner spray for anti-acne Effect.	In that formulation the author had done the formulation of evaluation of alum tone. The alum tone has many uses like Astringent, bacteriostatic, in inflammatory and anti-acne effect. In that rose water and glycerine are also used. ⁵	Mr. Tejas, Rajendra Paigude	5 May 2023



6	Formulation and evaluation of herbal toner.	In that formulation the author had done the formulation and evaluation of herbal toner in that they used the aloe Vera gel, convolvulus prostrate extract and glycerine. They had done the evaluation like colour, smell, pH, skin irritation test and antimicrobial test. ¹	Monali Parbhane, Ashutosh Acute & Harshada Khese	2022
7	Formulation and Evaluation of Herbal Toner Prepared Using Various Herbal Entities	In that author had done the formulation using the chrysanthemum indicum, aloe Vera, Tulsi and Lemmon grass. They had done the evaluation like antimicrobial test, skin irritation test, colour and odour. The formulation gives the rehydrating the skin, maintain the pH of skin and tightening the skin pores. ⁶	Shivtej Patil, Akshada Deshmukh, Riya Patil, Pratiksha Patil, Prajakta Patil, Sanjana Patil, Sayali Hogade.	May 2023
8	Formulation and Physical Characterization of Herbal Face Gel toner.	In that author had done the formulation using the aloe Vera, honey, cucumber and rose water. The formulation is used for soothing, calming and astringent effect to the skin. ⁷	Miss. Gayake Ranidevidas, Prof. Bagwan L.R.	June 2022
9	Formulation and Evaluation of a Turmeric Kombucha Facial Toner with Potential as an Anti-Acne Agent	In that author had done the formulation using the turmeric and kombucha. The main ingredient is kombucha which is against the P. Acne bacteria. This bacterium is gram positive bacteria. They had done an evaluation like colour, odour, antimicrobial test, viscosity, stability, and pH of skin. ⁸	Soni Muhsinin, Dini Zamzami Salsabilla, Yanni Dhiani Mardhiani, Garnadi Jafar	2023
10	Formulation and evaluation of herbal toner by using leaves of <i>Azadirachta indica</i>	In that author had done the formulation using the neem lemon grass, tween 80, rose water and peppermint. The formulation is used for the rehydrating the skin, tightening the pores, reduce the irritation, maintain the pH of skin and keeping the skin germ free. ⁹	Venu. S Agrawal, Dr. Manjeet singh, Dr Rajesh z mujariya, Atul bisen	8 August 2023.

MATERIALS AND METHODS

Following are the commonly used ingredients in formulations:

Benefits	Ingredients
moisturizer/humectant	Hyaluronic acid (2%), glycerin (2%), honey (5%)
Soothing agent	Rose water (20%), aloe Vera (5%), cucumber (10%), curd powder (5%)
Anti-acne	Tea tree oil (1%), turmeric (1%), apple cider vinegar, green tea (3%)
Antioxidant	Dragon fruit (5-15%), avocado, papaya (0.02%)
Protect from UV	Tomato (10%), Alum (1%), mint (3%)
Astringent	Alum (1%), mint (3%)
Preservative	Lemon juice (10%), vitamin C (1.5%)
Hydration	Sugarcane (20%), olive oil (0.5%)
Anti-inflammatory	Fennel seed extract (4%), alum (1%)
Anti-aging	Moringa leaf (1%), neem (20%), propolis (5-20%)

EVALUATION HERBAL FACE TONER:^{1,2,3,8}

Organoleptic properties:

We observed the colour, Odor, and the appearance of the herbal face toner's organoleptic properties.

pH measurement:

pH testing is used in herbal toners to determine their acidity or alkalinity levels. This information is important because it helps ensure that the toner is within the desired pH range for optimal skin health and effectiveness. The 25ml formulation was placed in a beaker with graduations and the calibrated pH metre was placed in the formulation for a period, and the measurement was taken.

Homogeneity:

The presence and appearance of any clogs were evaluated visually to determine homogeneity.

Light exposure testing:

The product is left in its original packaging in a light chamber or in the sun for 48 hrs to examine the discoloration.

Skin irritation:

The dorsal skin of the left hand was sprayed with a small amount of the toner and kept there for a while; the results indicated that the skin was not inflamed.

Skin Conditioning:

The skin appears hydrated, moisturized, smooth, and supple following the application of toner.

Surface tension:

They can determine if the toner will go across the skin an even layer or if it will form patches or droplets. Obtaining this knowledge is essential in ensuring correct toner use and a consistent experience for the user.



The formulation was collected using the stalagmometer, and the surface tension was determined.

(25°C), refrigerator temperature (5°C), and oven temperature (45°C) to check suitability.

Temperature variation:

Over the duration of 30 days, the formulation was subjected to varying temperatures at ambient temperature

Perfume stability:

The formulation herbal face toner was applied after 30 days, to record fragrance.

MARKETED FORMULATION:

Table 8: list of marketed preparations

Sr. no	Name	Ingredients	Skin type	Use	Formulation
1	Ayur herbal toner	Rosemary, Aloe vera, rose water	All skin types	Hydrating cleansing, minimize pore size, Balance pH of skin keeps skin fresh.	
2	Jovee's herbal skin toner	Cucumber aloe vera, Chamomile.	Acne prone skin	Cleansing, moisturizing, Soothing, astringent	
3	Wow vit c and niacinamide skin mist toner	Purified water, glycerine, propane diol, witch hazel extract, aloe vera extract, magnesium ascorbic phosphate, lemon essential oil, orange essential oil, polysorbate 20, phenoxyethanol, benzyl alcohol, sodium gluconate	All skin types	Brighten and refreshes skin, restores skin moisture, improve skin texture	
4	Sahdev ayurvedic pore tightening toner	Cucumber, coconut, wheat gram, aloe vera, rose, quincennial,	All skin types	Reduce enlarged pore, hydrates and soothes the skin, restores elasticity, reduce wrinkles	
5	Pore refining toner	Pomegranate, mandarin orange, lemon, aloe vera,	All skin types	Instantly refreshes, hydrate and moisturize, pore tightening	

CONCLUSION

In conclusion, herbal toners represent a significant development in the skin care industry. With the rising awareness of the adverse effects associated with the chemical-based cosmetics, there has been a major move towards herbal cosmetics, which offers numerous advantages over synthetic alternatives. The literature review focuses on various studies highlighting the efficacy and benefits of herbal toners in maintaining skin health. The studies underline the importance of using natural ingredients derived from herbal sources to formulate the toners. Such toners are not only effective but also gentle on the skin and have less side effects. The formulations mentioned in this review showcase the diverse range of Herbal toners that can be prepared using alum powder, aloe vera, cucumber extract, honey, Rose water, lemon grass, pepper mint and other natural ingredients. Each formulation is modified to address specific skin concerns such as hydration, anti-aging and anti-acne. Furthermore, the methods used for the preparation of toners ensure the stability and efficacy of the final product. Moreover, the evaluation methods outlined provide essential insights into the quality and performance of Herbal toners, addressing parameters such as pH, skin irritation and stability. These evaluation help ensure that the formulated toners meet the desired standards of effectiveness and user satisfaction. As the demand for natural skin care products continues to grow, further research and innovation in this field will contribute to the advancements of the herbal cosmetics and the well-being of consumers.

FUTURE SCOPE OF TONER:

It is projected that the size of the worldwide skin toner market will grow at a compound annual growth rate (CAGR) of 5.2% between 2023 and 2033. By 2033, its valuation is probably going to be close to US\$ 2.1 billion. By 2023, the skin toner market is expected to be valued US\$ 1.3 billion.

FUTURE DIRECTIONS:

- Summary of the findings and their implications for the development of herbal skincare products.
- Suggestions for future research directions, such as exploring new herbal ingredients or optimizing formulation parameters.

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REFERENCES

1. Prabhane Monali, Aute Ashutosh, Khese Harshada. Formulation and evaluation of herbal toner. WJPPS 2022; 11(9):784-97, DOI: 10.20959/wjpps20229-22649.
2. Mhaske Sapana, Wayle Vaishnavi, Tribhuvane Harshada, Kute Poonam, Gaikwad Shital. Formulation and evaluation of herbal face toner. IJARST 2022;2(5):619-23. DOI: 10.48175.
3. Chatur VM, Walode SG, Aware SA, Gandhi MU, Thorat VS. Formulation and physical characterization of herbal mist for skin. WJARR, 2021;21(2): 335-45.
4. Shubangi Gunjal, Somvanshi Akanksha, Rajdev Purva, Walunj Kajal. Formulation and evaluation of Herbal face toner. IJARST, 2022;2(1):786-90, DOI: 10.48175/IJARST-4660.
5. Paigude TR. Formulation and evaluation of Alum toner spray for anti-acne effect. IJCRT, 2022;11(5): 456-68.
6. Patil Shivtej, Deshmukh Akshada, Patil Riya, Patil Pratiksha, Patil Prajakta, Patil Sanjana, Hogade Sayali. Formulation and evaluation of herbal toner prepared using various herbal entities. IJIRT, 2023;9(12):1408-12.
7. Ranidevidas Gayake, Bagwan LR. Formulation and physical characterization of herbal face geltoner. IJPRA 2022;7(3):2374-78, DOI: 10.35629/7781-070323742378.
8. Muhsinin Soni, Salsabilla Zamzami, Mardhiani Dhiani, Jafar Garnadi. Formulation and evaluation of a Turmeric Kombucha Facial toner with potential as an anti-acne agent. JDDT 2023;13(1):68-75, DOI: <https://dx.doi.org/10.22270/jddt.v13i1.5721>
9. Agrawal VS, Singh Manjeet, Mujariya RZ, Bisen Atul. Formulation and evaluation of herbal toner. IJCRT 2023;11(8): 616-36.
10. Anurukvorakum Oraphan, Numnim Sarunpat. Development and clinical efficacy evaluation of facial toner containing *Houttuynia cordata* Thumb. MDPI 2023; 10(133):1-12, DOI: <https://doi.org/10.3390/cosmetics1005013>
11. Sadsyam Sriyanty, Auliah Nielma, Uko Anto Wisna, Basir Nasrawati, Ulfiana Andi. Antioxidant Evaluation of Facial Toner Formulations Containing Ethyl Acetate Fraction from *Garcinia mangostana* L. Fruit using ABTS 2,2'-Azinobis 3-ethyl Benzothiazoline 6-sulphonic Acid Method. IISTR 2022; 2(2):94-105, DOI: DOI: 10.56741/hesmed. v2i02.266.
12. Bargade PD, Patil Pranali, Umekar MJ. A formulation of face pack and hair products of rice water for the use of skin and hair problem. WJPPS 2020; 9(4):683-94, DOI: 10.20959/wjpps20204-15810.
13. Jiangseubchatveera Nadechanok, Saechan Charinrat, Leelakanok Nattawut, Arpa Petchsomrit. The evaluation of antioxidant and antityrosinase efficacy of *Carissa carandas* fruit extracts and the development of a preliminary



Skincare product. JAPS 2021;11(07):153-7, DOI: 10.7324/JAPS.2021.110717.

14. Thanaroat Timudom, Chaiyavat Chaiyasut, Bhagavathi Sundaram Sivamaruthi, Praty Tiampasook, Duangporn Nacapunchai. Anti-Sebum Efficacy of *Phyllanthus emblica* L. (Embllica) Toner on Facial Skin. MDPI 2020;10(22):1-16, DOI::10.3390/app10228193.

15. Khairunnisa Maulida, Luqman Arif. Investigation of the Effect of Cosmetics on Skin Staphylococci: A Study Case in Surabaya. IJRESM 2023;6(7):1-5.

16. Arora Riya, Aggarwal Geeta, Dhingra Gitika, Nagpal Manju. Herbal active ingredient used in skin cosmetics. AJPCR 2019;12(9):7-15.

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