



PREPARATION AND EVALUATION OF HERBAL TONER

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Abstract:

This research paper presents the formulation and characterization of a novel herbal toner utilizing natural extracts and ingredients known for their skin benefits. The formulation integrates witch hazel extract, cucumber extract, papaya extract, aloe vera extract, menthol crystals, rose water, disodium EDTA, propylene glycol, and honey to create a synergistic blend targeting various skin types and concerns. The selection of ingredients was based on their individual properties, including antioxidant, astringent, moisturizing, and smoothing effects. The toner was developed through a series of experiments to optimize ingredient concentrations and ensure stability and efficacy. Characterization studies, including pH measurement, viscosity analysis, and stability testing, were conducted to evaluate the quality and performance of the formulation. The results demonstrate that the formulated herbal toner exhibits desirable characteristics, including a balanced pH, suitable for application, and good stability over time. Furthermore, the toner demonstrates compatibility with various skin types, offering potential benefits such as hydration, toning, and revitalization. Overall, this research contributes to the development of natural and effective skincare products, highlighting the potential of herbal formulations in promoting skin health and beauty. They are often used to remove traces of makeup and dirt, leaving the skin feeling rejuvenated. The result highlighted a promising formulation with notable skin friendly attributes, suggesting its potential as a natural alternative in the skin care industry.

Key words : Herbal Toner, witch hazel, characteristics, evaluation, rejuvenated.

1). INTRODUCTION:

Herbal cosmetics are the products derived from natural ingredients which are utilised 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 in 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 toner 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 as a washing agent and then as a facial cleanser in the past. ^[6]

2. TYPES OF TONER:^[7]

There are three main types of toner available on the market today:

2.1) Alcohol-based formulation

2.2) Glycerin or glycol-based 2.3) Water-based water-based toner without alcohol, fragrance, or witch hazel to reduce the risk of irritation.

3). Toner for specific skin type.

3.1) For oily skin

Toners all work to counteract too much oil. Try a mattifying toner with glycolic and salicylic acid for exfoliation, though, for the greatest effect. A wonderful component to try if you want to minimize the appearance of your pores is niacinamide. Niacinamide, antioxidants, and plant extracts are included in Paula's Choice Skin Balancing Pore-Reducing Toner to lessen oiliness and encourage cleaner, smoother skin.

3.2) For acne- prone skin

Choose a light and gentle formula if you are prone to pimples or severe acne breakouts.Avoid using toners with alcohol as the last thing you want to do is aggravate your skin worse.To get rid of dead skin and lessen the oil that might clog pores, try using a toner that contains one or two alpha hydroxy acids.A gentler and non-alcoholic alternative is Mario Badescu's Glycolic Acid Toner.

3.3) For dry skin

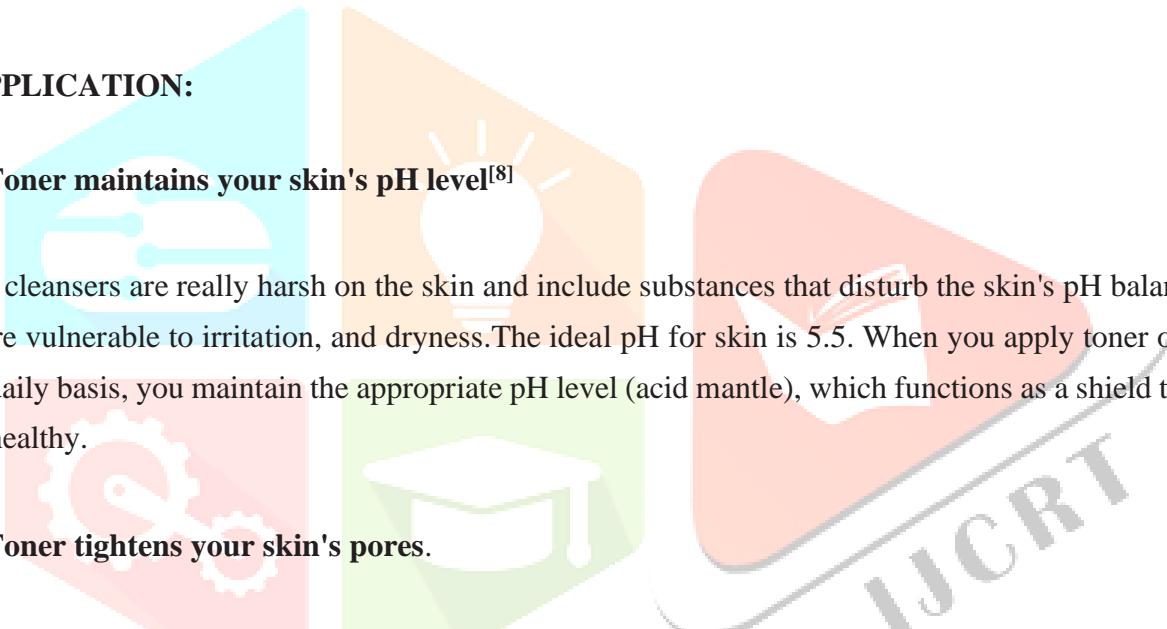
Thomas advises those with dry skin types to use toners that contain humectants. "Humectants are chemicals in cleansers and lotions that work like a magnet to draw water molecules to the skin to hydrate it." Once more, you should avoid using any harsh compounds that could cause skin drying, such as alcohol. Rather, seek out calming, hydrating components such as glycerin, vitamin E, and hyaluronic acid.

3.4) For combination skin:

The best of all worlds is what you desire if you have mixed skin. For toners, that means a mixture that will moisturize skin and take out extra oil. Toning Lotion with Iris by Clarins is an alcohol-free, well-balanced solution. Rather, it uses extracts of sage and iris to revitalize skin. Look for hydrating antioxidants and mild acids such as lactic, salicylic, and hyaluronic acid when evaluating alternative solutions.

4).APPLICATION:

4.1) Toner maintains your skin's pH level^[8]



Some cleansers are really harsh on the skin and include substances that disturb the skin's pH balance, leaving it more vulnerable to irritation, and dryness. The ideal pH for skin is 5.5. When you apply toner on your face on a daily basis, you maintain the appropriate pH level (acid mantle), which functions as a shield to keep your skin healthy.

4.2) Toner tightens your skin's pores.

When pores are big, more debris and oil enter the skin. Because of these pollutants, the skin is more likely to develop conditions like acne. The use of toner on a regular basis constricts the pores and reduces their overall size. As a result, less oil and pollutants deposit in the skin, giving it a fresher and cleaner appearance.

4.3) Toner aids in the prevention of skin outbreaks.

Skin breakouts occur when perspiration, oil, and debris get blocked in the pores. Because of this, oily skin is more susceptible to breakouts. Toners can be useful in dealing with this problem. By eliminating excess oil, residue, and dead skin, toner reduces the chances of breakouts.

4.4) Toner aids in thorough cleaning

Some pollutants stay on the skin even after cleaning. This might be leftover makeup or part of the oil content left by the cleansers. A toner's primary function is to remove them and clean the pores from the inside. Toners also get rid of residues, revealing a healthy complexion.

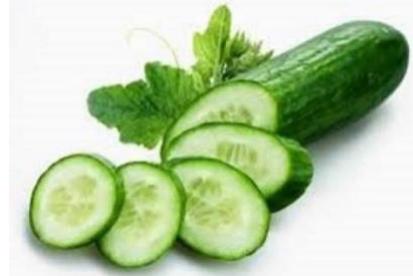
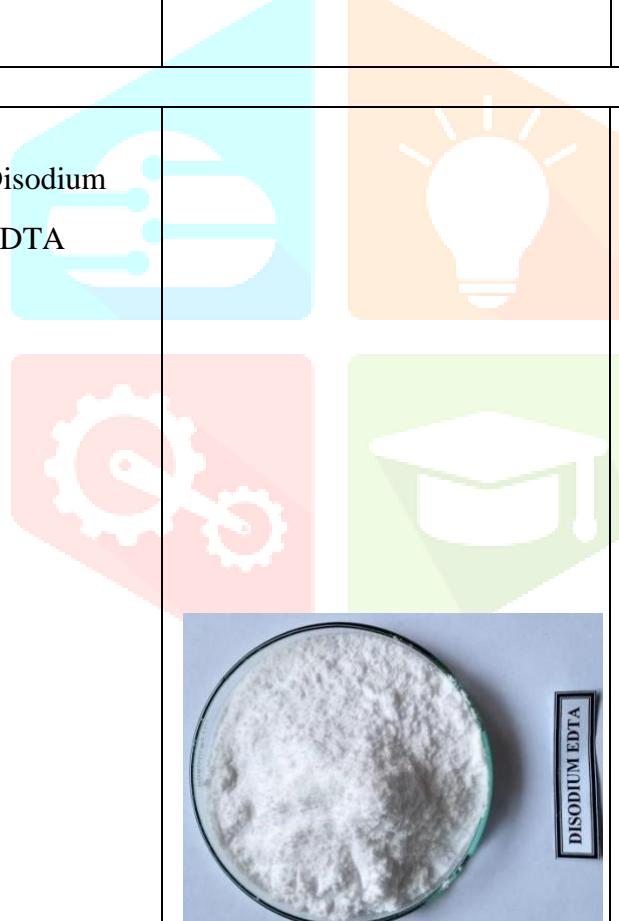
4.5) Skin hydration and nourishment

Toning is done shortly after cleaning and just before moisturizing for a purpose. The hydrating components in the toner prepare the skin to absorb moisture more effectively.

5). DRUG & EXCIPIENTS PROFILE:

Sr No	Name Of Ingredient	Image	Active Constituent	Uses
1	Witch hazel extract		Flavonoids, Catechins, Volatile Oil, Tannin.	Witch hazel is an astringent with anti-inflammatory and antiviral properties. It may help relieve inflammation and fight acne, among other uses.
2	Papaya Extract		<i>C.papaya</i> contains alkaloids, glycosides, tannins, saponins, flavonoids and glycosides which may be responsible for its therapeutic activity.	The papaya fruit extract is rich in antioxidants, including lycopene, which can help fight free radical damage and promote the healthy aging of your skin while minimizing damage.

3	Menthol Crystal			<p>Menthol Crystals contribute a cooling sensation to the skin, calm irritation, itching, and burning, and whiteheads, diminish the appearance of dark spots and age spots, and promote clearer skin.</p>
4	Honey		Fructose	<p>Honey is added for hydration which gives the skin a fresh, youthful glow and suppleness, making fine lines and wrinkles less. Honey also contains natural antioxidants.</p>
5	Aloevera extract		<p>Common active polysaccharide include glucomannan, polymannose, and acemannan, or β-(1-4)-acetylated polymannose.</p>	<p>Prevent and treats acne and dry skin, antioxidant effect, cooling effect, hydration of skin.</p>

6	Cucumber extract		cucurbitacins, cucumegastigmanes I and II, cucumerin A and B, glucoside.	Cucumber extract hydrates and soothes the skin. Its refreshing properties can reduce puffiness and relieve itching, as well as help to ease redness – for example sunburn. Cucumber extract is suitable for all skin types.
7	Disodium EDTA			Disodium EDTA is a good chelating agent that binds with metal ions and prevents them from clogging the minute pores present in our skin. Hence, the disodium EDTA in skin care products facilitates skin devoid of free radicals.

8	Propylene glycol			Propylene Glycol in cosmetics works as a humectant, skin conditioner, carrier in fragrance oils, solvents and viscosity reducers to retain moisture in the skin.
9	Rose water		aliphatic hydrocarbons like heneicosane, nonadecane, tricosane, pentacosane and eicosane.	Rose water is perfect for cleansing your skin and removing any impurities that could cause unwanted spots. it is suitable for people with any skin type.

6). MATERIAL AND METHOD:

Table : 01 Materials required for formulation of face toner

Sr.no	Phase		Name of Ingredients	Quantity(%/100 ml)
1	Phase A	Water 30% + disodium EDTA	Distilled water	Q.S
2			Disodium EDTA	0.1
3	Phase B	Propylene glycol + menthol crystal	Propylene glycol	1
4			Menthol crystal	0.1
5	Phase C	Papaya + aloevera extract + water 20%	Aloevera extract	2
6			Papaya extract	2
7		All extract	Witch hazel extract	8
8	Phase D		Cucumber extract	2
9			Honey	0.1
10			Rose water	2

6.1) Process of Manufacture

- 1) Phase A :- Weight disodium EDTA with 30% of water and add in a beaker.
- 2) Phase B :- In another beaker, take propylene glycol and menthol crystal and stir with a glass rod and Incorporate the phase B into phase A and give the name AB.
- 3) Phase C :- In phase C weight the powder extract of papaya and aloevera and dissolve in 20% water.
- 4) Phase D :- Mix all remaining extract of witch hazel, cucumber and incorporate it into phase C and give name phase CD .
- 5) Combination of phase AB and CD :- Incorporate the phase AB into phase CD and makeup the volume.
- 6) Check pH:- Check the pH and add the preservative. Stir properly with a glass rod.

7). METHODS FOR EVALUATION OF HERBAL TONER:

7.1) pH evaluation :

The pH of herbal toners is measured to determine their acidity or alkalinity. This data is essential because it ensures that the toner is in the ideal pH range for optimal skin health and effectiveness.^[9]

- Before use, rinse the electrode with distilled water.
- Calibrate the pH meter by using buffer solutions of 4.00, 7.00, 9.00 ○ The electrode was transferred to the test solution.
- The pH was recorded for 5 samples respectively.^[11]

7.2) Surface tension: The formulation was transferred in the stalagmometer and the surface tension recorded by drop count method.

7.3) Organoleptic properties : The organoleptic characterization of herbal face toner, such as colour, odour and texture were investigated.

7.4) Physical evaluation :

- a) **Skin conditioning :** The appearance of the skin after application of the formulation seen to be smooth, hydrated and supple.
- b) **Light Exposure:** The product is exposed to direct sunlight in its original packaging to see and discoloration of formulation occurs

7.5) Skin irritation: After applying a small amount of the toner to the dorsal skin of the left hand and letting it sit for a while, it was found that the skin was not irritated.

7.6) Homogeneity :

A visual assessment was carried out to assess consistency for the presence and appearance of any blockages in the formulation.

8). RESULT :

1) pH evaluation :

The pH of the face toner, which is made entirely of herbs, was measured using a pH metre. The evaluation grade is F4 shows that the pH of face toner is 5.71 which is suitable for skin.

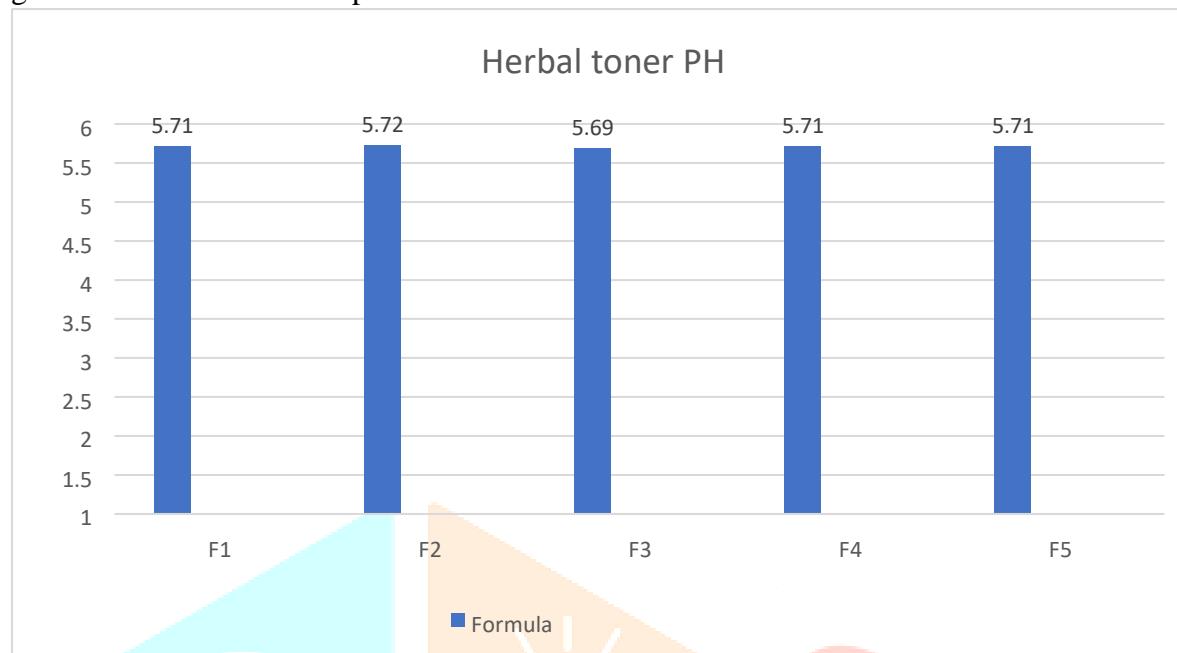


Fig 01: pH of herbal toner.

2) Surface tension:

A stalagmometer was used to test the surface tension of formulations of polyherbal face toners. The surface tension value of F4 were 60.52 dyne/cm² respectively.

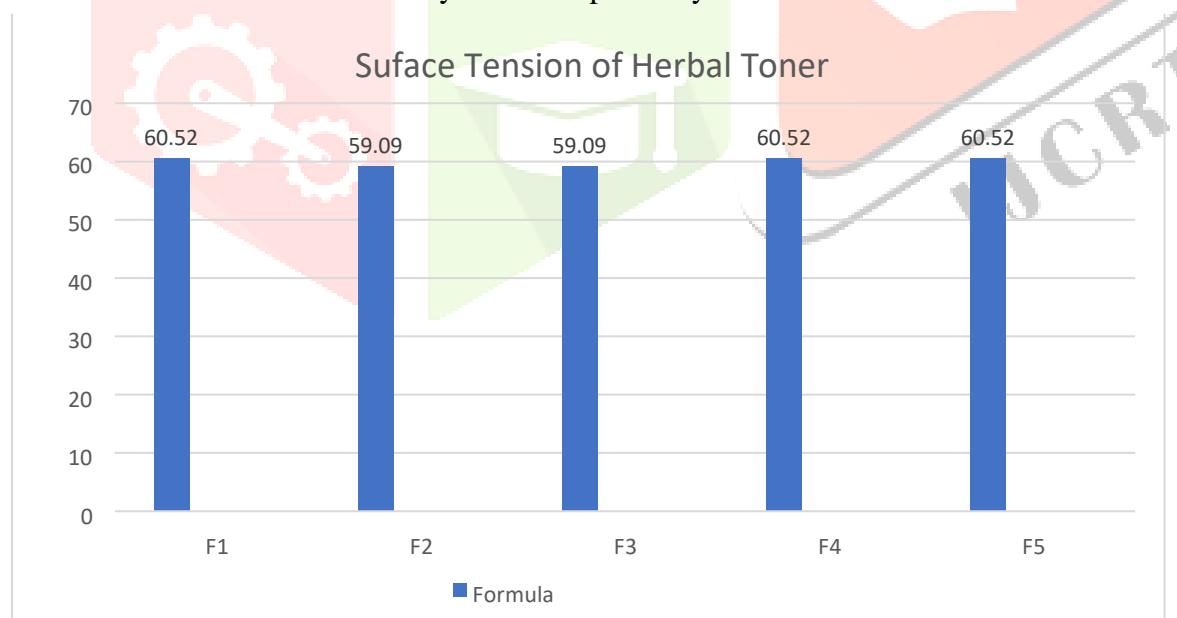


Fig 03: surface tension of herbal toner.

3) Organoleptic properties :

An organoleptic test was performed by examining the colour, and smell of the product. It is clear from the organoleptic test findings that the preparation of the polyherbal face toner is translucent colourless. All polyherbal face toner products have an aromatic scent to them. Every polyherbal face toner recipe is easy to absorb, non-sticky, and smooth.

Table:- Organoleptic test results

Formulas	Colour	Odour
F1	Translucent colourless	Aromatic
F2	Translucent colourless	Aromatic
F3	Translucent colourless	Aromatic
F4	Translucent colourless	Aromatic
F5	Translucent colourless	Aromatic

4) Physical evaluation :

a) Skin conditioning :

Description: Skin appearance after using a toner.

Result: The skin was hydrated after using herbal toner.

b) Light exposure:

Description: The product is in its container and exposed to direct sunlight for 48 hours to check for discolouration.

Result: No changes in discolouration, chemistry, or physical characteristics were noted.

5) Skin irritation: After applying a small amount of the toner to the dorsal skin of the left hand and letting it sit for a while, it was found that the skin was not irritated.

6) Homogeneity :

A visual assessment was carried out to assess consistency for the presence and appearance of any blockages in the formulation.

DISCUSSION:

There are several benefits to using herbal toners in skincare, such as hydrating skin, balancing pH levels, reducing pores, protect skin from sunburn and leaving skin feeling renewed. In this work, a herbal toner including witch hazel extract was created and evaluated. For this study, a number of distinct formulations of the herbal toner have been created. It was found after numerous evaluation studies which of these formulations worked best for the herbal toner. In the laboratory, cost-effective methods were employed for the formulation and assessment. The components were found to be completely miscible with one another without forming an interface. The formulation for the face toner was developed using Table 01, where the levels of the constituents were gradually increased and lowered. The intention Determining the physical properties of the prepared toner was the aim of the evaluation trials. Testing for surface tension, pH, and revealed that the face toner with formula code F4 performed better the other three formulations. After being exposed to light, the formulation exhibited no symptoms of discoloration. The composition also did a good job of conditioning the skin.

9). CONCLUSION:

The formulation of the herbal toner delivered very nice results. Studies have shown the benefits of the herbal face toner, which aims to reduce pores, moisturize skin, balance pH levels, protect skin from sun burn and provide skin with a stimulating sensation. The conclusions derived from the evaluation test were as follows: The designed face toner's organoleptic qualities displayed no immiscibility or uneven colour distribution. The formulation F4 showed values within range in contrast to the other three formulations (F1, F2, F3, and F5), which showed values higher than the standard range, according to the findings of the pH, and surface tension tests. The formulation did not appear to have discolored after being exposed to direct sunshine, according to the physical evaluation. The formulation F4 proved to be more stable than the formulations F1, F2, F3 and F5 when stored at varying temperatures, according to the results of the stability test. In light of this, it can be said that formulation F4 performed better than the other three formulations, F1, F2, F3 and F5, and produced the desired results.

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