



PREPARATION AND EVALUATION OF Tribulus Terrestris LIQUID FACE WASH FORMULATION

*Arya Hanumant Barbole*¹, Kadambari.S.Ghatpande²*

¹Student, Bachelor of Pharmacy, Talegaon Dabhade, Pune 410507, India.

²Assistant professor, department of pharmaceutical chemistry, Talegaon Dabhade, Pune 410507, India.

ABSTRACT :

Liquid face wash is a popular skincare product that is used to cleanse the face, remove dirt, oil, and impurities, and improve the overall appearance of the skin.⁽⁷⁾ This product typically contains water, surfactants, and other cleansing agents, as well as ingredients such as moisturizers, exfoliants, and antioxidants. Liquid face wash is available in a wide range of formulas to suit different skin types and concerns, such as oily, dry, sensitive, or acne-prone skin.⁽³²⁾ Many face washes are also infused with natural ingredients like botanical extracts, essential oils, and vitamins to provide additional benefits for the skin. Regular use of liquid face wash can help to maintain a healthy complexion by unclogging pores, preventing breakouts, and promoting cell turnover.⁽²⁴⁾ It is essential to choose a face wash that is suitable for your skin type and to use it as part of a daily skincare routine for optimal results. Overall, liquid face wash is a versatile and effective product that can help to keep the skin clean and healthy, providing a foundation for a glowing and radiant complexion.

A facewash is a facial care product that's used to remove makeup, dead skin cells, oil painting, dirt, and other types of adulterants from the skin of the face. This helps to unclog pores and help skin conditions similar as acne. ⁽³⁾ A facewash can be used as part of a skin care authority together with a color and moisturizer. Face marshland is the products which are used to cleanse face without drying it out. Face marshland is also generally known as "cleaner".

INTRODUCTION :

Synonym : Tribulus and Puncture wine.

Biochemical Source: Dried ripe seeds from Tribulus terrestris Linn.

Family :Zygophyllaceae

Colour- Fruits are greenish to gray

Odour- odourless

Size- 1.0 to 1.5cm in diameter, 8.5mm in thick

Shape- Fruits are globose, consisting of 5 to 10 Woody cocci

Texture- Hard⁽⁷⁾

Taste- Slightly bitter and astringent

Vernacular Classification: ⁽⁹⁾

English: Caltrop fruits

Gujarati: Bethagokhru,

Telugu: Pallerukayalu

Hindi: Gokhru

Tamil: Nerinjil⁽¹⁴⁾

Sanskrit: Shvadanstra

Oriya: Gukhura

Kannada: Sannaneggilu

Marathi: Sarate

Kashmiri: Michirkand,

Urdu: Khorkashak

Punjabi: Bhakhra



Whole plant



Flower



Fruit

Tribulus terrestris

Pharmacological action

1. Nephroprotective activity⁽²⁰⁾
2. Anti-ulcer activity⁽¹⁶⁾
3. Anti-inflammatory activity⁽¹⁷⁾
4. Anti-oxidant activity⁽¹⁵⁾
5. Hepatoprotective activity⁽²¹⁾
6. Anti-arrhythmic activity⁽¹⁸⁾
7. Anti-hypersensitivity activity⁽¹⁹⁾
8. Anti-bacterial activity⁽¹³⁾

Formulation and evaluation of *Tribulus terrestris* liquid face wash formulation

Development of *tribulus terrestris* liquid face wash⁽²⁵⁾

- ✓ We explore the potential utilization of the anti-bacterial properties of the *Tribulus terrestris* plant.
- ✓ Harnessing its natural anti-bacterial activity, we intend to develop a formulation that effectively targets and eliminates harmful bacteria from the skin.
- ✓ Our research will involve studying the optimal extraction methods.
- ✓ Determining the appropriate concentration of *Tribulus terrestris* extract, conducting extensive testing to ensure its safety and efficacy for the use in the formulation.
- ✓ Ultimately our goal is to bring forth a high quality formulation that combines the power of nature and science.
- ✓ offering consumers a natural and effective solution for maintaining clean, healthy, and radiant skin.

Formulation table⁽²⁷⁾:

SR.NO	INGREDIENTS	QUANTITY TAKEN	USES
1	Gokhru liquid extract	50 ml	Anti-bacterial
2	Glycerin	10 ml	Moisturize
3	Aloe vera gel	20 ml	Smoothing
4	SLS	5 ml	Foaming agent
5	Triethanolamine	2 ml	p H adjuster
6	Acacia gum	1 gm	Thickening agent
7	Sodium benzoate	3 gm	Preservative
8	Rose water	Q.S	Fragrance

Table no.1

Method of preparation

1. Take a 20 gm of Tribulus terrestris powder in 200 ml of water⁽¹²⁾
2. Percolate it for 24 Hrs
3. Collect the liquid extract
4. In a clean mixing bowl, add the liquid extract, glycerine and aloe vera gel. Mix well to combine all the ingredients.
5. Add the SLS and mix well until it is completely dissolved.⁽²⁸⁾
6. In a separate container, mix the triethanolamine and water until well combined. Slowly add this mixture to the face wash and stir well.
7. Add sodium benzoate and gum acacia to the face wash and mix well
8. Finally add the rose oil and mix well to combine all ingredients
9. Pour the face wash into a clean, sterilized container for storage.



Fig no.1



Fig no.2



Fig no.3



Fig no.4

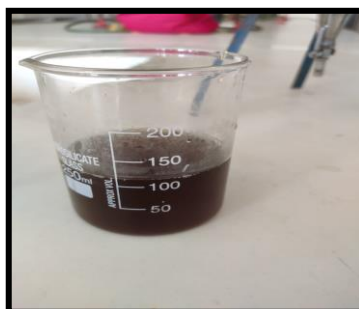


Fig no.5



Fig no.6

Fig No.	Description
1	Gokhru powder
2	Percolation
3	Magnetic stirrer
4	Insertion of chemicals
5	Formulation will be formed
6	Face wash

Table no.2

Evaluation studies

The prepared face wash was evaluated for various parameters as follows :

1. pH: The pH of a 1% aqueous solution of the formulation was measured using a calibrated digital pH meter at a constant temperature.
2. Colour: The colour of the face wash was visually checked.
3. Odour: The formulation was evaluated for its odour by smelling it.
4. Consistency: The consistency was determined manually.
5. Spreadability: The spreadability of the face wash was evaluated by applying it to the skin and gently rubbing it with a hand or finger.
6. Foamability: A small amount of face wash was mixed with water in a beaker, shaken 10 times, and the change in volume was noted.

7. Washability: Formulations that were easily removed from the skin by washing with water were checked manually.

SR.NO	Parameters	Result
1	Colour	Dark brown
2	Odour	Odourless
3	Texture	Smooth
4	State	Liquid
5	Consistency	Liquid
6	Ph	5.5 – 7.0
7	Washability	Good
8	Skin irritation test	Nil

Table no.3

Confirmatory test

Saponins

. Foaming test⁽²⁶⁾ : 1ml solution of extract diluted with 20ml Distilled water, shake in a cyclinder fo 15 min.

Result : Development of stable foam suggest the presence of saponin.



Face wash test



Patch test :

Patch testing is a skin test used to determine the cause of an allergic Reaction on the skin.

Anti-bacterial test⁽⁶⁾ :

This test will help to find out which Antibiotic will be the most effective in treating your infection



Foaming test :

Measures a lubricants foaming tendency and stability⁽²²⁾.

Result

(23)The result was a highly effective liquid face wash that left the skin feeling clean, refreshed, and hydrated. The Glycerin and Aloe vera gel helped to moisturize and smoother the skin, while the Acacia gum and Sodium benzoate provided a gentle cleansing action.(31)The SLS and Triethanolamine acted as surfactants to help remove dirt and impurities from the skin, while the Rose water and gokhru powder liquid extract added a subtle fragrance and additional skin-nourishing benefits. Overall, the liquid face wash proved to be a successful formulation that provided a thorough cleansing experience without stripping the skin of its natural oil



Fig. 1 - (a) Before use (b) After use.

CONCLUSION :

The conclusion from this result is that the liquid face wash is highly effective in cleansing the skin without stripping it of its natural oils. The combination of ingredients including Glycerin, Aloe vera gel, Acacia gum, Sodium benzoate, SLS, Triethanolamine, Rose water, and gokhru powder liquid extract work together to provide a thorough cleansing experience while also moisturizing and nourishing the skin. The product leaves the skin feeling clean, refreshed, and hydrated, making it a successful formulation for skincare.

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