

A Review Paper of Herbal Shampoo

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Abstract - The results indicated the formulated shampoo is having excellent conditioning performance, at The study aimed to formulate a pure herbal shampoo and to evaluate and compare its physicochemical properties with the marketed synthetic and herbal shampoos. The herbal shampoo was formulated by adding the extracts of Acacia concinna, Sapindus mukorossi, Phyllanthus emblica, Ziziphus spina-christi and Citrus aurantifolia in different proportions to 10% aqueous gelatin solution. Small amount of methyl paraben was added as a preservative and pH was adjusted with citric acid. Several tests such as visual inspection, pH, wetting time, % of solid contents, foam volume and stability, surface tension, detergency, dirt dispersion etc, were performed to determine the physicochemical properties of both prepared and marketed shampoos. The formulated herbal shampoo was also evaluated for conditioning performance by administering a blind test to 20 student volunteers. The formulated herbal shampoo was clear and appealing. It showed good cleansing and detergency, low surface tension, small bubble size and good foam stability after 5 min. The prepared shampoo and commercial shampoos showed comparable results for % solid contents also. The score of the conditioning performance of the tress washed with herbal shampoo was found to be 3.0 out of 4, while the score of the marketed synthetic and herbal shampoo was 3.4 and 3.3 respectively par with commercially available shampoo.

I. INTRODUCTION

From ancient time beyond memory, mankind have been borrowing abundantly from nature to care for their health, skin and hair, as natural ingredients that have preventive, protective and corrective action. The warehouse of cosmetics, nature provides such versatile natural ingredients that enhance beauty of the skin and hair. Hair is one of the external barometers of internal body conditions. Shampooing is the most common form of hair treatment. The primary function of shampoo is aimed at cleansing of the hair necessitated due to accumulated sebum, dust, scalp debris etc. Various shampoo formulations are associated with hair quality, hair care habit and specific problems such as treatment of oily hairs, dandruff and for androgenic alopecia. Shampoos are liquid, creamy or gel like preparations. The consistency of the preparation depends on the inclusion of traditional soaps saturated

with glycerides and natural or synthetic fatty alcohols or the thickening agents (e.g. gum, resin and PEG). Indian women use herbals such as *shikkakai* and *reetha* that are natural cleansing agents without harmful effects. Nowadays natural sources remain attractive primarily when compared to the synthetic one, so herbal shampoos are popular with the consumer when compared to the synthetic one.¹ A shampoo is a preparation of a surfactant in a suitable form- liquid, solid or powder- which when used under the specific conditions will remove surface grease, dirt and skin debris from the hair shaft without adversely affecting the user.⁽²⁾

Ideal characters of shampoo

- Should effectively and completely remove the dust, excessive sebum.
- Should effectively wash hair.
- Should produce a good amount of foam
- The shampoo should be easily removed by rinsing with water.
- Should leave the hair non dry, soft, lustrous with good, manageability.
- Should impart a pleasant fragrance to the hair.
- Should not make the hand rough and chapped.
- Should not have any side effects or cause irritation to skin or eye.⁽²⁾

Composition of shampoo

- Principal surfactant
- Secondary surfactant
- Antidandruff agents
- Conditioning agents
- Pearlescent agents
- Sequestrants
- Thickening agents
- Colors, perfumes and preservatives.

Types of shampoo

- Powder shampoo
- Liquid shampoo
- Aerosol shampoo
- Cream shampoo

- Conditioning shampoo
- Antidandruff shampoo
- Baby shampoo

- Powder shampoo:- Powder shampoo is a dry, powdered form of shampoo used to clean hair. It absorbs oil and dirt from the scalp without using water or can be mixed with water to form lather. It helps refresh hair and add volume.
- Liquid shampoo:- Liquid shampoo is a most common form of shampoo in liquid form used to clean hair and scalp with water. It removes dirt, oil, and sweat and produces foam when applied to wet hair.
- Aerosol shampoo:- Aerosol shampoo is a spray form of shampoo packed in a pressurized container. It is sprayed on the hair to absorb oil and refresh hair without using water. It is also called dry spray shampoo.
- Cream shampoo:- Cream shampoo is a thick, creamy form of shampoo used to clean hair and scalp. It also moisturizes and nourishes the hair, making it soft and smooth. It is especially useful for dry or damaged hair
- Conditioning shampoo:- Conditioning shampoo is a type of shampoo that cleans the hair and also conditions it. It helps to make hair soft, smooth, and easy to manage while removing dirt and oil from the scalp.
- Antidandruff shampoo:- Anti-dandruff shampoo is a medicated shampoo used to remove dandruff from the scalp. It helps reduce flakes, itching, and scalp irritation and keeps the scalp clean and healthy.
- Baby shampoo:- Baby shampoo is a very mild and gentle shampoo specially made for babies. It cleans the hair and scalp without irritating the eyes or skin and is usually tear-free and safe for sensitive skin.(2)

Objective:- The objective of herbal shampoo is to gently cleanse hair and scalp while using natural ingredients to nourish, strengthen, and condition the hair.

It aims to remove dirt and oil without stripping natural moisture, address issues like dandruff, and improve overall hair health, texture, and shine, all while minimizing the risk of side effects associated with synthetic ingredients

Natural Cleansing:- To wash away dirt, oil, and impurities from the hair and scalp using plant-based ingredients, without harsh chemicals like sulfates.

Nourishment: To provide essential vitamins, minerals, and proteins to the hair and scalp to promote overall health and strength.

Moisture and Conditioning: To clean the hair while retaining its natural moisture, leaving it soft, smooth, and manageable.

Scalp Health: To treat common scalp problems like dandruff, dryness, and itchiness through the antifungal and antimicrobial properties of certain herbs.

Hair Growth and Strength: To promote hair growth and reduce hair loss by nourishing the hair follicles.

Enhanced Shine and Color: To enhance the natural shine and luster of the hair and help preserve its natural color. (10)

Safety: To offer a safer alternative to conventional shampoos by avoiding synthetic chemicals that may cause side effects or irritation.

II. INGREDIENTS



Amla:- Amla is also stated as the Indian gooseberry. Amla contains Vitamin-C which increases the amount of antioxidants in our body. It is added to the herbal hair dyes like henna to enhance the colour of dye. It helps to boost the volume of the hairs and also reduce the Hair Lice. Amla is also rich in tannins, iron, calcium, phosphorus.

Biological Name: *Phyllanthus emblica*

Family: Euphorbiaceae

Chemical Constituents: Gallic acid, Vitamin c.

Uses: Promote hair growth, Anti-bacterial, Anti-fun



Reetha-: Reetha commonly is called as Indian soapberry, washnut and soapnut Reetha belongs to the family sapindaceae. Reetha prevents the hair dandruff. Reetha is antibacterial and antifungal in nature, so its helps to treat the scalp infections and head lice. Reetha when combined with egg they help to control the hair fall.

Biological Name: Sapindus mukorossi

Family: Sapindaceae

Chemical Constituents: Saponins, sugar

Uses: Hair follicle strengthening, Anti-fungal, Anti-dandruff



Sikakai-: It provides shine to the hairs and also prevents the graying of hairs. It is an herb especially used for controlling hair fall and dandruff. It has cleansing and antifungal properties. It boost the hair growth. It prevents split ends.

Biological Name: Acacia concinna

Family: Fabaceae

Chemical Constituents: Lactone, Glucose, Lupeon

Uses: Controlling hair fall, Dandruff



Hibiscus-: It provides shine to the hairs and also prevents the graying of hairs. It is an herb especially used for controlling hair fall and dandruff. It has cleansing and antifungal properties. It boost the hair growth. It prevents split ends.

Biological Name: Hibiscus rosa-sinensis

Family: Malvaceae

Chemical Constituents: Flavonoids, phenolic compounds

Uses: hair care , anti- inflammatory

Material required

Sr	Ingredients	Uses	Value
1	Reetha	Natural surfactant	5g
2	Shikakai	Cleanser	4g
3	Amla	Hair tonic	3g
4	Hibiscus	Conditioner	2g
5	Glycerin	Moisturizer	5ml
6	Xanthan gum	Thickening agent	1-2ml
7	Methyl paraben	Preservatives	0.2g
8	Citric acid	Ph adjuster	Q.s
9	Sodium lauryl sulphate powder	Foaming enhancer promoter	3g
10	Distilled water	Vehicle	Q.s to 100ml
11	Rose oil	Vehicle	Q.S

Preparation method

Preparation of herbal extract:

Take Reetha (5 g), Shikakai (4 g), Amla (3 g), and Hibiscus (2 g).

Crush them lightly and add them to 50-60 ml distilled water.

Boil the mixture for 15-20 minutes to extract the active components.

Allow it to cool and filter through muslin cloth or filter paper to obtain the clear herbal extract.

2. Preparation of thickening base:

Take a small amount of distilled water and slowly add Xanthan gum (1-2 ml equivalent) with continuous stirring to avoid lumps

3. Addition of surfactant:

Dissolve Sodium lauryl sulphate powder (3 g) in the herbal extract with gentle stirring until completely dissolved.

4. Add moisturizing agent:

Add Glycerin (5 ml) to the mixture and stir well.

5. Add preservative:

Dissolve Methyl paraben (0.2 g) in a small amount of warm water and add it to the shampoo mixture.

6. Combine thickener:

Add the prepared Xanthan gum solution slowly while stirring to obtain the desired viscosity.

7. pH adjustment:

Add Citric acid (Q.S.) dropwise and check the pH until it reaches about 5-6, which is suitable for hair.

8. Add fragrance:

Add a few drops of Rose oil (Q.S.) and mix well.

9. Make up the volume:

Add distilled water to make the final volume up to 100 ml.

10. Final step:

Mix the solution thoroughly until a uniform herbal shampoo is obtained.

Transfer the shampoo into a clean, airtight container or bottle and label it.

Evaluation of Herbal Shampoo

- Characterization of Herbal Shampoo: -
- PH: 1% shampoo solution was used to determine the PH by using the PH meter.
- Percent of Solid: Weighed a clean dry evaporating dish and recorded the initial weight of evaporating dish. 4Gm of shampoo Formulation (not the 1% solution) was taken in the evaporating dish. Weigh the dish and shampoo and record Initial weight of shampoo and dish. Calculated the exact weight of the shampoo only and recorded the initial Weight of shampoo only. Place the evaporating dish with shampoo on the hot plate until the liquid portion has Evaporated. After drying, weighed the dish and shampoo solid and results were noted.
- Foam formation: (Shake Test) Took 50 ml of the 1% shampoo solution in 250 ml graduated cylinder and recorded the volume. Then cover the Cylinder with hand and shaken 10 times. The total volume of the contents was recorded after shaking. Calculate the volume of the foam and recorded the size of the bubbles.
Foam quality and retention: Immediately behind the shake test, time was recorded. Recorded the volume of foam at 1-minute intervals for 5 Minutes
 - Surface tension: Shampoo was taken in the beaker and then slowly added distilled water. After thorough mixing of shampoo and Water the surface tension was uniform by using stalagmometer
- Skin irritation test: the solution of prepared shampoo on skin and kept for 5 minutes and observed for redness of skin and Irritation there, were no any red coloration and the irritation to the skin.

- Visual stability: To prepared shampoo was tested for the visual stability for 21 days at room temperature with relative humidity 65+_5, and observed for color change and PH There were no changed in color and PH of shampoo within 21 Day and no any phase separation between oil and water.
- Viscosity: Viscosity was determined by using the Ostwald viscometer. 8

Dirt dispersion test: To 10 ml of purified water two drops of cleanser were included and taken in a wide mouthed test tube. To the Formulated shampoo, added one drop of Indian ink and shaken for 10 min after closing the test tube with a Stopper. The volume of seal in the froth was measured and the result was graded in terms of none, slight, medium, or heavy Testing of wetting-Wetting time was calculated by noting the time required by the canvas paper to sink completely. A duck paper weighing 0.44 g was cut into a disc of diameter measuring 1-inch. Over the shampoo.(15)

III. CONCLUSION

The formulated shampoo was not only performed antimicrobial, antifungal activity but also greatly reduces the hair loss during combining as well as strengthens the hair growth.

The pH of the shampoo was adjusted to 6.2, to retain the acidic mantle of scalp.

The physicochemical approach used for preservation of the formulations to avoid the risk posed by chemical preservatives.

The clarity of the laboratory shampoo was not comparable with the marketed shampoos.

In the present scenario, it seems improbable that herbal shampoo, although better in performance and safer than the synthetic ones, will be popular with consumers.

There is a strong need to change the consumer perceptions of a good shampoo and the onus lies with the formulators.

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