

Formulation and Evaluation of Herbal Hair Nourishing & Anti-Dandruff Shampoo

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ABSTRACT

Shampoo is the most basic cosmetic used for hair, containing moistening agent, surfactant, cleansing agents, scalp reducing agent, antimicrobial agents, antidandruff agent, foaming agents, preservatives and perfumes. The main function of shampoo is to clean the hair properly, reduce the dandruff, making the hair glossy and preventing excessive drying of hair. It act as an adjunct in the management of various scalp disorders. Dandruff is a common disorder affecting the scalp condition caused by yeast *Pityrosporum*. Dandruff cannot be completely eliminated but can only be managed by effectively controlled in that way. In present work we have formulated onion, neem, tulsi and coconut oil herbal shampoo for the dry. The most common problem in people is related to hair dry. Hence research was carried out on dry hair remedy. The formulation was evaluated for various parameters. The formulation shows good efficacy. The advantage of herbal shampoo is better nutrient and nourishment of hair follicles and to promote the growth and overcome on dryness problem. The onion used in this formulation as it promotes hair growth.

Keywords: Cosmetic, Herbal Shampoo, Hair nourishing property.

Introduction

“The word ‘cosmetic’ arise from a greek word ‘kosmetics’ which means to adorn. Since that time any material used for beautification or improvement of appearance is known as cosmetics.” Herbal shampoo is a cosmetic preparation which uses herbs from plants and it is meant for washing of hair and scalp just like a regular shampoo. It is an alternative to the synthetic shampoo available in market. The onion (*Allium cepa* L, from Latin *cepa* “onion”), also known as a bulb onion or common onion, is a vegetable that is the most widely cultivated species of the genus *Allium*. It's close relatives includes the garlic, shallot, leek, chive and Chinese onion. *Allium cepa* family Liliaceae has been reported to possess antimicrobial, antibacterial, better nourishment, nutrients and also used as hair scalper hair loss.



Onion (*Allium cepa*)

The Neem tree commonly known as Indian lilac, obtained from *Azadirachta indica*, belongs to family, *Meliaceae*. It possesses anti-viral activity, for soap making, skin diseases, preparation of shampoos and also in hair scalp hair loss.



Neem tree (*Azadirachta indica*)

Tulsi consists of the fresh and dried leaves of *Ocimum* species like *Ocimum sanctum* & *Ocimum basilicum* belongs to family *Lamiaceae*. It is a herb and has many medicinal applications. It is used in case of insect bite, fever, cardiac diseases, respiratory problems, skin disorders & it also acts as a scalp reducing agent.



Tulsi (*Ocimum sanctum*)

Aloe is the dried juice of leaves of *Aloe barbadensis*, known as Curacao aloe belongs to family *Liliaceae*. It is used in the preparation of different shampoos, treatment of ulceration, skin cosmetics and used in painful inflammation.



Aloe vera (*Aloe barbadensis*)

In the formulation of various ingredients are used: Coconut oil (moistening agent), Glycerin (surfactant), *Allium cepa* extract (Scalp reduce agent), Lemon juice (antidandruff agent), Propyl paraben (preservative), Neem extract (scalp reduce agent), Sodium lauryl sulphate (detergent), Hydroxypropyl methylcellulose (thickening agent), Sodium citrate (emulsifying or stabilizing agent), Tulsi extract (scalp reducing agent), Rheeta powder (foaming agent), perfume (fragrance), distilled water (aqueous medium). In this formulation we checked general appearance, pH & viscosity.

DEFINITION OF SHAMPOO:-

“A ‘shampoo’ may be described as a cosmetic preparation meant for the washing hair and scalp packed in a form of convenient for use”. Though earlier it was thought that good shampoo not only cleans, rinses out dirt from the hair and imparts gloss to it, but also leaves hair manageable and non-dry. But at present, the composition and purpose of shampoo varies so much that no definition can cover them all.

Functions of a shampoo:-

1. It should effectively and completely remove dust or soil, excessive sebum or other fatty substance, loose corneal from the hair and other residual substance of hair dressing or setting or other material.
2. It should effectively wash the hair.

3. It should produce a good amount of foam to satisfy the psychological requirement of user.
4. The shampoo should be easily removed by rinsing with water.
5. It should leave the hair non dry, soft, lustrous with good.
6. It should impart a pleasant fragrance to the hair.
7. It should not make the hard rough and chapped.

Ideal properties of a shampoo:-

The ideal properties of a shampoo may not always be attainable, but the following are important

1. **Ease of application:-** The shampoo should be viscous enough to stay in the before application to the hair and scalp, yet during application the shampoo must spread easily and dispense quickly over the head and hair.
2. **Removal of debris:-** The shampoo should effectively remove dust or soil, excessive sebum, or other fatty substance.
3. **Rinsing:-** The shampoo should rinse easily and should not leave a residual tackiness or stickiness.
4. **Fragrance:-** A fragrance should be used that only cover any objectionable odour due to components used to formulate shampoo but which develops a clean refreshing.
5. **Well preserved:-** The product must be properly preserved against microbial and fungal contamination.

MATERIAL AND METHOD

I. Preparation Of Extracts :

1. Allium cepa Extract :



Allium cepa extract

First 100gms of freshly bulbs of allium cepa were cutted in small pieces. These pieces take into the mixer apparatus crush the content of allium cepa then collect the allium cepa . This extract is passed through the muslin cloth to take the pure extract in filtrate . This extract is used for the formulation.

2. Neem Extract :



Neem Extract

First take the fresh leaves of the neem plant then it will be cutted in small pieces. These pieces take into the mixer apparatus crush the content of neem then collect it . Add small amount of water . This is passed through the muslin cloth to take the pure extract in filtrate. This extract is used for the formulation.

3. Tulsi Extract :



Tulsi Extract

First take the fresh leaves of the tulsi plant then it will be cutted in small pieces. These pieces take into the mixer apparatus crush the content of the tulsi then collect. This is passed through the muslin cloth to take the pure extract in filtrate . This extract is used for the formulation.

6. Aloe vera Gel :



Aleo vera Gel

Firstly collect the fresh leaves of aloe vera then remove the gel then it will be passed through a mixer . Then this is passed through the muslin cloth to take the pure extract in filtrate . This extract is used for the formulation.

II. Procedure :

1. Take all the apparatus, clean and wash all the apparatus with care.
2. Weigh all the solid ingredients in a mortar and pestle mix well with continuous trituration.
3. Weigh all the liquid chemicals or extracts in a another beaker by using measuring cylinder.
4. Mix one by one with a continuous stirring.
5. Then add the all solids ingredients into beaker with continuous stirring.
6. Then keep the formulation on magnetic stirrer for continuous stirring.
7. Then add the perfume .
8. Make up the final volume upto 20 ml by using distilled water as an aqueous medium.

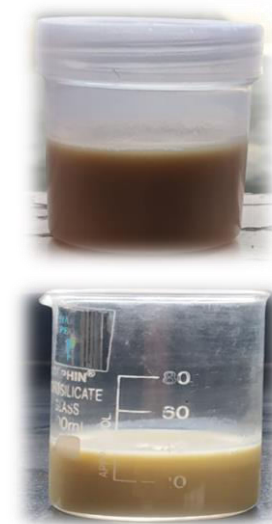


Fig-Formulation of Herbal Shampoo

EXPERIMENTAL WORKS AND METHODOLOGY

Aim: To prepare , formulate , and evaluate 20 ml of herbal hair nourishing and anti-dandruff shampoo.

Sr. No.	Ingredient	Quantity taken (20ml)	Category
1.	Sodium Lauryl Sulphate(SLS)	1.5 gm	Detergent
2.	Coconut Oil	1.8 ml	Moistening Agent
3.	Hydroxypropyl methyl cellulose (HPMC)	0.45 gm	Thickening Agent
4.	Sodium Citrate	0.15 gm	Emulsifying Agent/ Stabilising Agent
5.	Propyl Paraben	0.03 gm	Preservative
6.	Neem Extract	0.75 ml	Scalp Reducing Agent
7.	Allium cepa extract	0.75 ml	Scalp Reducing Agent
8.	Tulsi Extract	0.75 ml	Scalp Reducing Agent
9.	Aloe vera gel	4 ml	Conditioner/Cleansing Agent
10.	Lemon Juice	0.75 ml	Anti-dandruff Agent
11.	Glycerin	0.75 ml	Surfactant
12.	Rheeta Powder	0.09 gm	Foaming Agent
13.	Perfume	Q. S.	Fragrance
14.	Distilled water	Upto 20 ml	Aqueous Medium

EVALUATION TEST FOR SHAMPOO

The formulated herbal shampoo was subjected to physical and biological evaluation

General Appearance :

The prepared formulation was checked by its colour , odour and consistency.

pH :

The prepared formulation was checked by using pH paper.

Viscosity :

Viscosity was determined by using the ostwald

viscometer.

Foam Formation :

Take the shampoo in our hand and wash with water and check the foam formation.

Skin IrritationTest :

Apply the solution of prepared herbal shampoo on skin and kept for 5 min and observed for redness of skin and irritation.

Stability Study :

The stability study was carried out of prepared shampoo at standard temperature of 25-30°C.

- Herbal hair nourishing and anti-dandruff shampoo was formulated by adding the required amount of herbal ingredients as a given in formulation table.

Sr. No.	Evaluation Parameter	Observations
I.	General Appearance a) Colour b) Odour c) Consistency	Slightly yellowish Characteristics Smooth
II.	pH	7.0 (Neutral)
III.	Viscosity	12.07 cp
IV.	Foam formation (Foam capacity)	Good foaming
V.	Skin Irritation Test	No skin irritation
VI.	Stability Study	Formulation remained stable

Result:

- Herbal shampoo was formulated using simple mixing process



Fig: Ostwald viscometer

(The viscosity was measured by using this instrument i.e Ostwald)

CONCLUSION :

- ❖ The main aim was to formulated hair nourishing shampoo, will improve and strengthen the hair by proper nourishment and other problems like dryness and dandruff.
- ❖ It was concluded that the herbal hair nourishing and anti-dandruff shampoo containing ingredients such as neem extract , tulsi extract , allium cepa extract and aloe vera extract which is prepared by simple mixing method .
- ❖ Aloe vera extract gives reducing dandruff and the prepared herbal hair nourishing and anti-dandruff shampoo was evaluated by using evaluation test which shows satisfactory results.
- ❖ It was concluded that formulated shampoo having good hair nourishing property.

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