



## Formulation and evaluation of herbal shampoo

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### ABSTRACT

The objective of this study is to formulate and evaluate poly-herbal shampoo for cosmetic purpose from herbal ingredients.

Hibiscus powder, Neem powder, Henna powder, Amla powder, Shikakai powder, Ritha powder, Alo-vera gel was procured from local market in powdered form also gel form Banyan root powder and Soya milk is prepared by homemade method,

then prepared decoction of these ingredients and mixing with each other and evaluated for it's organoleptic and physico-chemical characteristics.

Herbal shampoo is used to cleansing of the hair also conditioning, smoothing, of the hair surface, good health of hair, hair free of dandruff, dirt grease and lice above all, it's safety benefits are expected.

The advantage of herbal cosmetics is their non-toxic nature, reduce the allergic reactions and time tested usefulness of many ingredients.

Thus in present work, we found good properties for the herbal shampoo and further optimization study benefits of herbal shampoo on human use as cosmetic product. popular with consumers.

### Keywords:

Cosmetic, Herbal shampoo

## Introduction

What is dandruff ?

Medically dandruff is defined as : it is scaly white or greyish flake of dead skin cell especially of the scalp

Also the condition marked by excessive shedding of such flakes and usually accompanied by itching

Dandruff can't be removed entirely but can only be handled and regulated effectively

## CAUSES OF DANDRUFF....

Dandruff is caused due to Pityrosporum yeast which affects the scalp condition.

- Dust particle,
- Over use of oil
- Warm climat
- Diet
- Stress
- Alkaline shampoo
- Not shampooing enough

## Effect Of Dandruff On Hair

Dandruff is a dead cell deposition or dust particl deposition on scalp that leading to.....

- Loss of hair/makes hair rough/split end on hair/slow hair growth
- Nausea
- Hair damage
- hair loss,
- increased scaling,
- scratching, Discomfort
- nausea

### Remedies to cure dandruff from hair

medicated shampoo, multani matti hair pack, aspirine, tea tree oil, baking soda, yoghurt, fenugreek pack, lemon, apple cider vinegar, using mouthwash, neem juice, orange peel pack, salt, garlic, aloe vera.

### WHAT IS SHAMPOO

Shampoo is preparation of surfactant in a suitable form liquid asolid or powder which when used under the specific condition will remove surface grease dirt and skin debris from the hair shaft and scalp without adversely affecting the user.

while talking about the medicated shampoo medicated shampoo the medicated shampoo contain number of chemical that may cause an irritation and adversely effect on user so I is better to use herbal shampoo prepared from herbal plant number of herbal plant can be used for the preparation of herbal shampoo out of that bhringraj is most usefull for the preparation of the herbal shampoo.



## ADVANTAGES OF HERBAL SHAMPOO

- Easy to get available at all pharmacy store and general stores
- Safe to use no side effects
- Cheaper
- No need any prescription or advise of any practioner.

"Shampoo is the cleansing preparation of the hair and scalp."

Though there are different types of skin cleansers, but the hair cleansing preparations can be grouped into only one category and are called as shampoo.

They are basically water based products containing mainly surfactants.<sup>2</sup>it's Primary function is of cleansing the hair of accumulated sebum, scalp, debris and residues of hair grooming preparations.

The herbal shampoo although better in performance and safer than the synthetic ones will be.

### **Importance of this formulation**

- The selection of active ingredients for hair care shampoo is often based on the ability of the ingredient to prevent damage to skin as well as to improve the quality of the skin by way of cleansing, nourishing, and protecting the skin.
- It have not make the hand rough and chapped.
- It's not give any side effects or causes irritation to the eye.
- It produces a good amount of foam to satisfy the psychological requirements.

### 1) **Henna leaf**

Biological Source	: Dried leaves of Lawsoniainermis
Family	: Lythraceae
Kingdom	: plantae
Order	: Martales
Part Used	: dried Leaves
Colour	: light BrownUses Growth of hair, conditioner



Fig. 2 henna powder

## 2) Hibiscus leaf

Biological Source	:Dried leaves of Hibiscus rosea
Family	: Malvaceae
Kingdom	: plantae
Order	: Malvales
Part used	:dried Leaves
Colour	: Light brown
Uses	: Prevents hair loss and hair growth promoter



Fig. 3 hibiscus plant

**Neem leaf**

Biological Source : Dried leaves of Azadirachta indica

Family : Miliaceae

Kingdom : plantae

Order : Sapindales

Part Used : Leaves

Uses : Prevent the dryness of hairs and flaking of hairs.



Fig. 4 Neem leaves

### 3) **Banyan root**

Biological source : Dried roots of *Ficus aurea*

Family : Moraceae

Part Used : Root

Colour : Brown

Kingdom : plantae

Order : urticales

Uses : Lustrous effects on hairs.



Fig. 5 banyan root

**4) Ritha fruit**

Biological source : Dried fruits of *Sapindus mukorossi*

Family : Sapindaceae

Kingdom : plantae

Order : sapindaes

Part Used : seed

Colour : Brown in colour

Uses : Detergent and antidandruff.



Fig. 6 reetha fruits

### 5) Amla fruit

Biological source	: Dried ripe fruits of <i>Embelica officinalis</i>
Family	: Euphorbiaceae
Kingdom	: plantae
Order	: malpighiales
Part Used	: Fruit
Colour	: Green
Uses	: Darkening of hairs and hair growth promoter.



Fig. 7 amla fruit

**6) Guar gum**

Biological source	: Powder of endosperm of the seeds of <i>Cyamopsis tetragonoloba</i>
Family	: Leguminosae
Kingdom	: plantae
Order	: fabales
Part Used	: Beans
Colour	: green to Brown after dry
Uses	: Good emulsifier, also use in food and cosmetic industries.



Fig. 8 guar gum powder

### 7) Almond

Biological source : Dried ripe seeds of *Prunus amygdalus*

Family : Rosaceae

Kingdom : plantae

Order : Rosales

Part used : Fruit

Colour : Brown

Uses : Preservative, sedative, demulcent.



Fig. 9 almond fruit

**8) Aloe vera leaf**

Biological source : Dried leaves of Aloe barbadensis miller

Family : Liliaceae

Kingdom : plantae

Order : asparagales

Part Used : Leaf

Colour : Green

Uses : Conditioner and moisturizing effect.



Fig. 10 aloe vera leaf

### 9) Soyamilk

Biological source	: Dried legumes of Glycine max
Family	: Fabaceae
Kingdom	: plantae
Order	: fabales
Part Used	: Bean
Colour	: light Brown
Uses	: Gives proteins, edible oils.



Fig. 11 soya milk

### Objectives

- To formulate the herbal shampoo.
- To evaluate the herbal shampoo.
- The part used for formulation is leaves, fruits and root.
- To reduce side effects of chemical formulation.
- To improve hairs texture.
- To darkening the hair color.
- To imparting gloss to hair and to maintain their manageability and oiliness for hairs.

**Preparation**

Sr..	constituent	part	Quantity (100 ml )
1.	Hibiscus powder	Leaves	5 gm
2.	Neem powder	Leaves	5 gm
3.	Henna powder	Leaves	5 gm
4.	Amla powder	Fruits	10 gm
5.	Shikakai powder	Fruits	15 gm
6.	Ritha powder	Fruits	15 gm
7.	Alovera gel	Leaves	10 ml
8.	Banyan powder	Roots	5 gm
9.	Soya milk	Seeds	20 gm
10.	Gaur gum	Seeds	1 gm
11.	Sandalwood	Wood	5 gm
12.	Almond	Fruits	4 gm

Table : Formula of herbal shampoo

### **preparation method of herbal shampoo:**

#### **Decoction Method:**

- 1) Weighed all the ingredients according to the formula.
- 2) Decoction of Hibiscus, Henna, Neem, Amla, Banyan root powders, Alovera gel, Soya milk was prepared in one part of water.
- 3) Filter it, by using muslin cloth. Collect filtrate. Decoction of Shikakai, and Ritha was prepared in another part of water.
- 4) Filter it by using muslin cloth. Collect filtrate.
- 5) Mixed to each other of above filtrate with constant stirring.
- 6) Mixed gaur gum as a thickening agent for maintenance of consistency of herbal shampoo as like semisolid nature.
- 7) Preservatives and perfume was added lastly.



Figure 1: Formulation of Herbal Shampoo

## Evaluation of Herbal Shampoo:

To evaluate the prepared formulations quality control tests including visual assessment and physicochemical controls such as pH and viscosity were performed. Also to assure the quality of products, specific tests for shampoo formulations including the determination of dry residue and moisture content tests were carried out. The results were compared with marketed formulations.

### Physical appearance /visual assessment

The formulations prepared were evaluated in terms of their clarity, foam producing ability and fluidity.

### Determination of pH

The pH of shampoo solution in distilled water was determined at room temperature by using pH paper.

### Determine percent of solids contents

A clean, dry evaporating dish was weighed and added 4 gram's of herbal shampoo to the evaporating dish. The exact weight of the shampoo was calculated only and put the evaporating dish with shampoo was placed on the hot plate until the liquid portion was evaporated. The weight of the shampoo only (solids) after drying was calculated.

### Rheological evaluation

The viscosity of the shampoo was calculated by using viscometer. The viscosity of the shampoos was measured with the temperature and sample containers size was kept constants during the study.

### Dirt dispersion

Two drops of shampoo were added in large test tube contain 10 ml of distilled water. One drop of ink was added in the test tube, was stopped and shake for ten times. The amount of ink in the foam was estimated as none, light, moderate or heavy.

### Skin sensitization test

This test is performed on skin of human volunteers and checks whether it irritation on skin or not.

### Stability test

Stability and acceptability of organoleptic properties (odour and color) of formulations during the storage period of 2 months indicated that they are chemically and physically stable.

### Foaming ability and foam stability

Cylinder shake method was used for determining foaming ability. 50 ml of the 1% shampoo solution was put into a 250 ml graduated cylinder and covered the cylinder with hand and shaken for 10 times were recorded. The total volumes of the foam contents after 1 minute shaking. The foam volume was calculated only. Immediately after shaking the volume of foam at 1 minute intervals for 4 minutes were recorded.

### Nature of hair after washes

Nature of hair after wash can be done by collecting the responses of volunteer.

## **Conclusion**

The formulated shampoo were not only safer than the chemical conditioning agents, but also greatly reduce the hair loss during combining as well as strengthens the hair growth. The pH of the shampoo was adjusted to 5, to retain the acidic mantal of scalp. The physicochemical approach used for preservation of the formulations to avoid the risk posed by chemical preservatives. However, the aesthetic attributes such as lather and clarity of the laboratory shampoo are not comparable with the marketed shampoos. The foam volume is one par.

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. Formulators must play an active role in educating the consumers about the potential harmful effects of synthetic detergent in shampoos. There is a strong need to change the consumer perceptions of a good shampoo and the onus lies with the formulators.

## **RESULT**

the herbal product have less side effects as compare to synthetic product

Sr. No.	Evaluation tests	Results obtained
1.	Physical appearance	Dark brown, good foaming
2.	pH	5
3.	Percent of solids contents	3.8%
4.	Rheological evaluations	1.84 cps
5.	Dirt dispersion	Light
6.	Skin sensitization	No irritation on skin
7.	Stability test	Stable after two months
8.	Foaming ability and Foaming stability	50 ml
9.	Nature of hair after washes	Soft manageable

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