

# Formulation And Evaluation of Herbal Anti Dandruff Shampoo

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**Abstract :** Dandruff is a common condition caused by the *Pittosporum* yeast that affects the condition of the scalp. Dandruff cannot be completely removed; it only effectively treats and regulates it. Shampoos are formulations containing suitable surfactants (i.e., surface active substances) in the form of liquids, solids or powders, and when used under certain conditions, the hair shaft and scalp without harming the user. Removes surface oils, dirt, and dead skin from the effects. Various antifungal agents are used in hair care products to treat dandruff. Such medications show a variety of side effects such as hair loss, increased dandruff, scratches, discomfort, nausea, and headaches.

**Index Terms:** Herbal, Dandruff, Natural Herbs, Antidandruff Shampoo, Antifungal. Evaluation.

## INTRODUCTION

Dandruff is a common scalp condition that affects almost half of the post-pubertal population, regardless of gender or race. It often causes itching. It is well known that keratinocytes play an important role in the expression and generation of immune responses during dandruff formation. The severity of dandruff varies from season to season, as it often worsens in winter. Most dandruff can be treated with a special shampoo. People suffering from dandruff have discovered that dandruff can cause social and self-esteem problems, suggesting treatments for both psychological and physiological reasons.

Shampoo is a hair care product, usually in the form of a viscous liquid, used to clean hair. The purpose of using shampoo is to remove unwanted buildup between the hairs without removing too much sebum to get the hair out of control. Shampoos are generally made by combining a surfactant, most commonly sodium lauryl sulfate or sodium laureate sulfate, with a co-surfactant in water, most commonly cocamidopropyl betaine. Due to the potential side

effects of synthetic shampoos, herbal anti-dandruff shampoos have been developed and scientifically evaluated.

## ADVANTAGES OF HERBAL SHAMPOO

Herbal shampoo is formulated by pure and organic ingredients with no synthetic additives or surfactants are free of any side effects.

- Herbal shampoos are biodegradable and earth friendly.
- It doesn't cause irritation to the eyes.
- It is cost friendly, not much expensive.
- Regular usage of herbal shampoo can do wonders for your hair.
- A perfect oil balance is achieved by using herbal shampoo.
- They consist of natural essential disinfectant properties that protect hair and scalp from the harsh UV rays of the sun and prevent skin infections.

The action of Shampoo:



## CLASSIFICATION OF DANDRUFF

- A. Dry dandruff B. Oily dandruff  
A) Dry dandruff:

It is also called as pityriasis simplex characterize by excessive formation of minute scales which accumulate on the scalp area. In this type of dandruff there is no excessive hair loss.

The inflammation on the skin is not observed. The scales are first found in middle of the scalp and then spread to frontal, parietal and occipital areas.

**B) Oily dandruff:**

It is also called as pityriasis steatitis. It arrives on the scalp with sebum production. It is mostly found in young men following puberty. Inflammation of varied intensity developed on the scalp along with oily scales of dirty yellow color. Hair fall is most found in this condition. The most common site affected by this type of dandruff is scalp, behind the ears, over breastbone, armpits.

**MATERIALS AND METHOD**

Brahmi, Hibiscus, Amla, Bhringraj, Neem, Tulsi, Curry leaves, Shikakai, Lemon juice and Lavender oil.

**METHOD OF PREPARATION**

**1. Weighing:**

All required herbal ingredient for shampoo preparation were accurately weighed individually by using digital balance.

**2. Mixing:**

They are prepared by simple mixing process in case of clear liquid shampoo. Mix all the ingredient together and add lemon juice for good transparency then add lavender oil for good fragrance.

**3. Storage:** Store in suitable container.

**METHODOLOGY**

**PREPERATION OF EXTRACT**

INGREDIENTS	QUANTITY
Brahmi	30gm
Hibiscus	20gm
Amla	20gm
Bhringraj	20gm
Neem	20gm
Tulsi	20gm
Curry leaves	10gm
Shikakai	20gm

Table 1: Ingredients for preparation of extract

**HOT MACERATION METHOD:** The above ingredients were weighed in individual beakers, in each beaker 200ml of distilled water was taken and

heated on hot plate with continuous stirring for 4 hours.



Figure 1: Preparation of extract

**COLD MACERATION METHOD:** 40gm of Reetha with 200ml of distilled water was taken in a beaker, stir and add 5ml methanol.

**FILTRATION PROCESS:** The extract is again filtered with the help of funnel through filter paper. To get excess resultant some quantity of hot water is dropped into the funnel.



Fig 2: Filtration of extract

**EVAPORATION PROCESS:** Then this filtered extract is subjected for evaporation, which is kept at room temperature for 24hours. Then these containers are kept in refrigerator for content drying for approx 2-3 days. Then the formulation begins.

**FORMULATION**

PREPARED EXTRACTS	QUANTITY
Brahmi extract	1.5gm
Hibiscus extract	1gm
Amla extract	1gm
Bringhraj extract	2gm
Neem extract	1gm
Curry leaves extract	1gm
Tulsi extract	1gm
Shikakai extract	2.5gm
Reetha extract	0.5gm
Glycerine	2ml
SLS	2gm
Lemon juice	2-3 drops
Lavender oil	qs
Purified water	100ml

Table 2: Composition of formulated herbal shampoo

The plant extracts were mixed in different proportions to obtain a shampoo whose formula is shown in above table. Herbal extracts were added to gaur gum solution (2gm of gaur gum in 100ml of distilled water with 2ml of glycerine was added) and were mixed with constant stirring. Lemon juice and lavender oil was added.



Figure 3: Formulated Shampoo

**EVALUATION**

To evaluate and prepared formulations, several quality control tests including visual assessment, physicochemical controls conditioning performance tests were performed.

**Physical appearance:** The formulation prepared was evaluated for clarity, color, odor and foam producing ability.

**Ph determination:** Take PH Paper strip and place on a white tile. Pour a drop of the sample on the PH

paper using a clean dropper. Observe the colour of the PH Paper. Now, compare colour obtained on the PH paper with different colour shade of the standard colour PH chart and note down the PH value.

**Determination of % solid contents:** 4grams of shampoo was taken in clean, dry evaporating dish and then weighed. They were weighed again to confirm the exact weight of the shampoo. The liquid part of the Shampoo was evaporated by using evaporating dish on the hot plate. After that the weight percentage was determined.

**Skin irritancy:** Skin irritancy of shampoo can be checked by taking small amount of product on Skin. After few minute to check whether local irritation or any inflammatory reaction are produced or not.

**Wetting time test:** A canvas paper was cut into 1-inch diameter discs having an average weight of 0.44 g. The smooth surface of disc was placed on the surface of 1% v/v shampoo solution and the stopwatch started. The time required for the disc to begin to sink was noted down as the wetting time.

**Physicochemical evaluation of formulated and marketed shampoo:**

	Formulated Shampoo	Dove Shampoo	Meera shampoo
Color	Brown	White	Light Brown
Transparency	Clear	Milky Opaque	Transparant
Odor	Good	Good	Good
% Solid Content	22.75	25	25
PH (10% solution)	6.02 ± 0.09	6.12 ± 0.27	6.04 ± 0.36
Wetting Time test	187 ± 4	141 ± 3.46	157 ± 2

Table 3: Evaluation parameters

**RESULT AND DISCUSSION**

The present study states that to develop a stable and effective herbal shampoo without synthetic chemicals. The following prepared herbal shampoo reduces hair fall, promotes hair growth and acts as anti-dandruff. Formulated herbal shampoo contains SLS (Synthetic chemical) But its percentage is less compared to marketed synthetic shampoo. For effective conditioning effects, the prepared

formulation involves the use of Amla, Reetha, Shikakai and other plant extracts instead of other synthetic agents.

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