

# Formulation And Evaluation of Ayurvedic Shampoo Tablet by Using Herbal Ingredients

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## ABSTRACT

The marketed shampoo is prepared with several chemicals which can cure all the hair problems but is also responsible for damaging of hairs. This shampoo has so many types of herbal source products. It helps hair to improve their quality, shine, thickening, growth, and strength of roots. The most advantageous thing about these herbal shampoo tablets is that they have no any side effects. Cleansing of hair and preventing the hair loss by using natural ingredients such as Shikakai, nagarmotha, reetha, brahmni, amla, etc. It also provides the conditioning and darkening of the hair. The herbal shampoo contains Amla, Reetha, Shikakai, Brahmi, Nagarmotha.

**Keywords:** Amla, Reetha, Shikakai, Brahmi, Nagarmotha Powder, Herbal Shampoo, Hair growth.

## INTRODUCTION

The shampoo sector is probably the largest unit sale among the hair care products since shampoos are one of the cosmetic products used in daily life. Hair cosmetics are an important tool that helps to increase patient's adherence to alopecia and scalp treatments. Shampoos are not only scalp cleaners, but indubitably act as preventing the hair shaft damage. Many scalp diseases are also treated by active ingredients that are added to the shampoo's formulations. Numerous medicinal plants with possible benefits on hair have been used for centuries in shampoo formulations all worldwide. These therapeutic herbs can be used as extracts, powders, crude forms, or derivatives. It is challenging to create a shampoo with only one natural ingredient that is safer and softer than synthetic shampoo. It must also include considerable foaming, detergency, and solid content, similar to synthetic shampoo. As a result, we gave careful thought to developing a pure natural cleanser employing a time-tested method and commonly used plant material for washing hair.

**1. Amla:** It consist of the dried fruit of the plant *Embillica officinalis* from the family Euphorbiaceae it nourishes the hair and helps for growth. It keeps the natural texture to the hair's and retained for a healthy shine and appearance. It controls hair loss. It contains

fatty acids that moisturize the hair. Fatty acids penetrate through the scalp to remove dryness and dandruff. It contains the maximum amount of antioxidant properties which strengthen the roots of the hairs. It acts as a conditioner that gives hair a natural shine.

**2. Reetha:** It consist of dried fruits of *Sapindus mukorossi* belonging to family Sapindaceae. It has a foaming property that's why reetha is selected in the formulation of herbal shampoo for in the shampoo it is also used as a cleansing agent, keeps the scalp gentle and removes any all the scalps microorganism which are responsible for infection. It nourishes hair, keeps the hair healthy and smoothens also. It shines the hair and brings back nature's texture. It is also helpful for dandruff hence its identical aunty dandruff property also.

**3. Shikakai:** Obtained from *Acacia concinna* from the family Leguminosae. It keeps hair lustrous and healthy. It conditions and strengthens the hair. It reduces hair loss and adds volume to the hair. It is a powerful antidandruff agent.

**4. Nagarmotha:** Consist of ripen as well as dried fruits of *Cyperus rotundus* from the family Cyperaceae. It stimulates hair roots. It works on the sebaceous gland to promote new hair growth.

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**5. Brahmi:** Belonging to the family Scrophulariaceae. It nourishes hair. It relieves the tension, stress and relaxes the nerves. It also helps for better circulation in the scalp.



**A. Reetha powder**



**B. Amla powder**



**C. Shikakai**



**D. Nagarmotha powder**

#### Name of Chemicals Used

Sr. No	Name of Chemicals	Category of chemicals
1	Sodium lauryl sulphate (SLS)	Surfactant
2	Crosscarmilose sodium	Disintegrant
3	Magnesium stearate	Lubricant
4	Water	Vehicle

#### Name of Equipment's Used:

Electronic weighing balance (FHOENIX, Mumbai)

Turbula mixer (ALPHIE-3D)

Tablet compression machine c-GMP model (ADINATH INTERNATIONAL, Producer)

Digital stopwatch (Wolpin)

#### Method:

1. Weigh 4 gm of all the required powder ingredients like Shikakai, Nagarmotha, Reetha and 1 gm of Brahmi and Amla on the other hand simultaneously weigh 0.5 gm SLS (Sodium Lauryl Sulphate) Cross povidone and triturate all the herbal ingredient by using mortar and pestle.
2. After triturating the mixture mix it well by using Turbula mixer and weigh it for the compression into the appropriate tablets.
3. The compress tablets are compressed by using the direct compression method by using 2.5 gm of Magnesium Stearate as a lubricant and the tablets are compressed directly from a powder blend of this natural ingredients which flows uniformly

into a die cavity and forms a solid compact after that suitable tablets are obtained by adjusting the level of lower die and changing the concentration of SLS and CP and starting the machine and running the machine desired speed to get good quality and texturized tablets.



#### EVALUATION

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.

The results were compared with marketed formulations.

#### Physical appearance / visual assessment

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

#### RESULTS

Sr. No	Evaluation tests	Observation
1	Color	Brown
2	Oduor	Good
3	pH	6
4	Foam volume	Foam was observed
5	Bulk density	0.26 gm/ml
6	Tapped density	0.30 gm/ml
7	Angle of repose	25.64
8	Carr's index	13.33
9	Hausner's ratio	1.15
10	Moisture content	83%

#### Determination of pH:

The pH of shampoo tablet in distilled water was determined at room temperature by using pH paper. The pH of Shampoo tablet is 6.

#### Surface tension measurement:

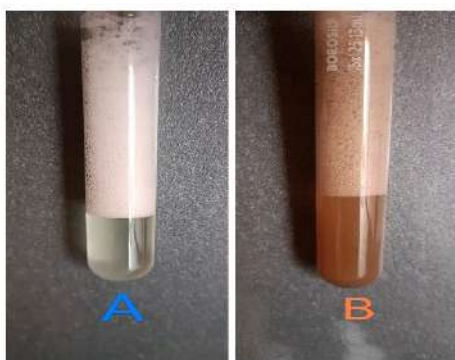
The prepared shampoo in distilled water (10% w/v) was evaluated for surface tension using stalagmometer in room temperature.

#### Wetting Time:

Wetting time was also calculated by noting the time which is required by the canvas paper to sink completely. The canvas paper weighing 0.44 g was cut into a disc of diameter measuring 1- inch Over the shampoo (1% v/v) surface, the canvas paper disc was kept and the time is taken for the paper to sink was measured using the stopwatch.

The wetting time of this formulated Shampoo was found to be 1 minutes.

#### Foam stability test:



The stability of the foam is determined. About (1%) solution was taken into the test tube shaken for 10 times vigorously and the foam stability was measured by recording the foam volume of shake test after 1 min and 4 min, respectively and total foam volume was measured after 1 min and shaking the shampoo tablet then compared with standard shampoo.

#### Dirt dispersion test-



Two drops of shampoo added in the test tube to create a volume upto 10 mL and in that 1 drop of Indian ink is added and shake it at least 10 times. The amount of ink in the foam was meticulously measured.

#### Wetting time:

Wetting time is calculated by noting the time required by the CP to sink completely the CP was cut into 1-inch diameter discs having an average weight of 0.44 g. The 1% v/v solution of shampoo is placed on that smooth surface of the disc and in otherside stopwatch was started.

The time required for the disc to begin to sink was noted as wetting time finally.

#### Skin irritation test:

Apply the solution of prepared shampoo on skin and kept it for 5 minutes and observed for redness of skin and irritation there, were no any red colouration and the irritation to the skin.

**Viscosity:** By using the Ostwald viscometer viscosity was also determined.

**Visual assessment:** The color, clarity, odor, and froth content of this prepared formulation was assessed.

#### CONCLUSION

The research is shows that this formulation containing ingredients have wide variety of acceptance in herbal formulation The formulated shampoo is not only safer than the chemical and some conditioning agent but also greatly reduced the hair loss during combining as well as strengthens the hair growth. The pH of shampoo was adjusted. The physicochemical approach used for preservation of the formulation to avoid risk posed by chemical preservative herbal Shampoo.

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