



### RESEARCH ARTICLE

#### EXTRACTION, FORMULATION AND EVALUATION OF MORINGA HERBAL SHAMPOO

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#### Abstract

This study aims to extract, formulate and evaluate herbal Shampoo. Shampooing is the most common form of hair treatment. Shampoos are primarily been products aimed at cleansing the hair and scalp. In the present scenario, it seems improbable that herbal shampoo, although better in performance and safer than the synthetic ones, will be popular with the consumers. 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. The herbal shampoo was formulated using natural ingredient like Moringa, Aloe vera, and Hibiscus with proven efficacy of hair care preparation is prepared. The combination of several such ingredient of herbal origin has made it possible to secure highly effective herbal shampoo. The formulation at laboratory scale was done and evaluated for number of parameters to ensure its safety and efficacy.

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#### Introduction:-

Shampoos are most probably used as cosmetics. Shampoos are most likely utilized as beautifying agents and are a viscous solution of detergents containing suitable additives preservatives and active ingredients [10-11].

Hair is a mid way between nature and culture. Hair care attitudes are different from one society to another regardless of economic differences, and from one person to another within societies. [2]

Today's busy life schedule has created the negligence of an individual to protect their hair from various problems. People don't have time for different treatment for getting good results. The objective of this study was to develop a method for hair growing and strengthening without affecting or damaging hair. For this herbal drugs were used for the formulation of shampoo. Herbal Cosmetics, here in after referred as Products, and are formulated, using various permissible cosmetic ingredients to form the base in which one or more herbal ingredients are used to provide defined cosmetic benefits only, shall be called as "Herbal Cosmetics". Herbal drugs or their formulations are viable alternative to synthetic drugs. During the past few decades, there has been a dramatic increase in the use of natural products in cosmetics [19]. Now-a-days, many herbal shampoos are available in the market which contains herbal ingredients such as plant extracts and essential oils. There are large number of plants which are reported to have beneficial effects on hair and are commonly used in shampoos [5].

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Shampoo is a polyherbal formulation that consist of extracts of MoringaOliefera (drumstick),Rosasinesis (Hibiscus)and Aloe vera gel. These herbs have been selected on the basis of a traditional system and scientific justification with modern uses.[15]

Many synthetic shampoos are present in the current market both medicated and non medicated; however, herbal shampoo popularized due to natural origin which is safer, increases consumer demand and free from side effects [ 16]

Moringaoleifera, belongs to family Moringaceae.It is indigenous to south asia, mainly in Himalayas foothills,India[14].Moringaoleifera is a nature's gift to mankind as it is the most nutrient-rich and multipurpose plant discovered[9].

DOSAGE OF Moringaoleifera:Leaf: 10–20ml. juice; Root bark: 2–5 g powder; Stem bark: 2–5g powder; Seed: 5– 10 g powder; Leaf, Flower, Fruit, Seed, Bark, root—1–3 g powder; 50–100 ml decoction[17,20]

The practice of Moringa consumption, with full credence has been in tradition among many tribes of Asia. As the authenticity of Moringa benefits have been confirmed through several years, therefore, many pharmaceutical and herbal healthcare industries sell various Moringa products like Moringa-capsules, Moringa-tea, Moringa-oil, Moringa-soap, Moringa-shampoo, Moringaantiwrinkle cream etc. Moringa is actually a versatile tree and a nature's medicine cabinet [1].The high behenic acid content is the reason why the oil is known commercially as “Ben” or “Behen” oil[6].Japakusum (Hibiscus rosasinensis. L flower) flower is indicated as Keshya (hair growth promoter) [13]

### **Material and Method:-**

#### **Plants:**

The plant materials required for the present study was obtained form botanical Garden of ideal college of pharmacy and research, kalyan east. And authenticated by the Professor.Anil Avhad.R. J. College, Ghatkopar, Mumbai.

#### **Material:-**

Drumstick pulp have taken with hibisus flower and some amount of aloevera and rose water, guar gum, SLS is added.

#### **Preparation Of Extraction:**

Every herbal plant of different amount namely M. Oleifera, H. Rosa-sinesis was boiled with some amount of water. Wait for some time cool it and filter it.

#### **Preparation Of Formulation:**

Formulation of herbal shampoo was done as per formula given inTable 1.

Weigh accurate amount of ingredients in beaker i.e., Extract of Moringa, Hibiscus and Aloe vera, guar gum, SLS. Then add some amount of rose water.stirr well untill lumps get disappear.




#### **Formulation F1:**



**Table 1:-** Formulation Table :

Ingredients	F1	F2	F3
Moringaoliefera	2ml	2ml	2ml
Aloe vera	2ml	2ml	2ml
Hibiscus	1ml	1ml	1ml
Guar gum	0.05gm	0.1gm	0.2gm
SLS	0.25gm	0.25gm	0.25gm
Rose water	3ml	3ml	3ml

**Table 2:-** Description of ingredients of herbal shampoo:

Sr. No.	Common name	Pictures	Botanical name	Parts used	Category
1.	Drumstick		MoringaOliefera	Pulp	Core ingredient
2.	Aloevera		Aloe barbadensis	Pulp	Smoothing agent
3.	Hibiscus		Rosa sinesis	Flowers	Conditioning agent

**Evaluation Of Formulation And Results**

The prepared herbal shampoo formulation should be evaluated for its appearance, pH, viscosity, foaming ability, detergency ability, dirt dispersion and stability result shown in table 3.

**Visual Assessment-**

The prepared formulation was assessed for color, clarity, odor, and froth content. The prepared shampoo showed good characteristics in terms of foaming effect and appearance on the visual inspection of the formulation.

**Physical Appearance-****Table 3:-**

Sr. No.	Test	Result
1.	Appearance	Clear
2.	Colour	Pink
3.	pH	6.20
4.	Viscosity	1000cp at 20rpm

**Determination Of pH-**

The pH of the prepared herbal shampoo in distilled water (10% v/v) was evaluated by means of pH analyzer at room temperature [7]. The pH of the prepared solution of shampoo using distilled water (10%) was evaluated at 25°C temperature. For enhancing and improving the hair quality, pH of the shampoo is very important and also for stabilizing the scalp and minimizing irritation to the eyes [12]. For minimizing the damage of hair using shampoo, one of the ways in the present trend is to develop shampoos having lower pH value. Lowering of pH (mild acidity) promotes tightening of the scales and prevents swelling, thereby producing sheen. The results are presented in Table 3.

**Dirt Dispersion-**

Dirt dispersion test is employed to evaluate the cleansing action of a shampoo. In the dirt dispersion test using Indian ink, the volume of ink in the froth was measured and the result was graded as none, light, moderate, or heavy.

**Foaming Stability-**

The stability of the foam was determined using cylinder shake method. About 50 ml of formulated shampoo (1%) solution was taken in a graduated cylinder of 250 ml capacity and shaken for 10 times vigorously. Foam stability was measured by recording the foam volume of shake test after 1 min and 4 min, respectively [3]. The total foam volume was measured after 1 min of shaking

From the consumer point of view, foam stability is one of the important needs of a shampoo. Important parameter that was considered in the shampoo evaluation was determination of foaming stability. The foam volume produced by the formulated shampoo is above 50 ml. The prepared shampoo generates uniform, small sized, compact, denser, and stable foam. The foam volume remains same throughout the period of about 5 min showing that the generated foam by the shampoo has good stability [18].

**Stability-**

Stability studies: Stability studies were carried out by placing glass tubes and in humidity chamber at 45°C and 75% relative humidity. And their appearance, physical stability were inspected for a period of 3 months at interval of one month.

**Conditioning Performance-**

A hair tress of an Indian woman collected from a local saloon was cut into three swatches of the tresses with approximately 10 cm length. One of the swatches without washings served as the control. Other three tresses were washed with the shampoos in an identical manner. For each cycle, each tress was shaken with the shampoos in an identical manner. For each cycle, each tress was shaken with the mixture of 10 g of a sample and 10 g of water in a conical flask for 2 minutes and then rinsed with water. Afterward, each tress was left for air drying at room temperature. The tresses were washed for maximum 5 cycles. The conditioning performance of the shampoos such as smoothness and softness of the tresses, was evaluated by 10 volunteers through a blind touch test. The volunteers were blind folded and asked to touch the tresses labeled with random codes. One of the tresses was the control and other two tresses were treated with the sample. For rating, they were asked to rank the conditioning performance of the tresses after touching and using the score from 1 to 4, where 1 is poor, 2 is satisfactory, 3 is good and 4 is excellent [8,4].

**Conclusion:-**

The main purpose behind this investigation was to develop a stable and functionally effective shampoo. The present study was carried out with the aim of preparing the herbal shampoo that provides smooth and straight effect to hairs, safer than the chemical conditioning agents. Herbal shampoo was formulated with the aqueous extract of medicinal plants that are commonly used for cleansing and smoothing hair traditionally. To provide the effective conditioning effects, the present study involves the use of moringa, aloe vera, and hibiscus extracts instead of synthetic cationic conditioners. The factors like UV radiations, use of harsh chemical products have direct and indirect impact on the hair. The present work focuses on the potential of herbal extracts from cosmetic purposes. Hence we conclude that the formulation of moringa herbal shampoo is effective in providing smoothing and shiny effect and better conditioning effect.

Results shows that all ingredients use to formulate the shampoo were found to be safe and physiochemical evaluation shows ideal results. Stability studies showed a stable homogenous appearance during 3-4 weeks at 3-8°C 40 degree Celsius ambient temp however F1 formula A gives best and optimum stability and active results.

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