IJNRD.ORG ISSN : 2456-4184
INTERNATIONAL JOURNAL OF NOVEL RESEARCH AND DEVELOPMENT (IJNRD) | IJNRD.ORG
An International Open Access, Peer-reviewed, Refereed Journal

Formulation and Evaluation of Herbal Shampoo

Sakshi Sayaji Mane, Aditya Rahul Mohite, Mayur Rameshwar MateTrusha P ShangrapawarDr. Ashok Bhosale

Student, Student, Student, Professor, Principle

Shankarrao ursal college of pharmaceutical sciences and research centre kharadi pune

Abstract- This study evaluated the physicochemical properties of herbal shampoo formulated with, Emblica officinalis, Acacia concinna, Sapindus indica, Eclipta prostrata, Aloe barbadensis, and Cassia auriculata in various proportions.

Key Word – Herbal shampoo, Cosmetics , Emblica officinalis, Acacia concinna, Sapindus indica, Eclipta prostrata, Aloe barbadensis, and Cassia auriculata

1. INTRODUCTION –

Shampoos are most probably used as cosmetics. It is a hair care product that is used for cleaning scalp and hair in our daily life. Shampoos are most likely utilized as beautifying agents and are a viscous solution of detergents containing suitable additives preservatives and active ingredients. It is usually applied on wet hair, massaging into the hair, and cleansed by rinsing with water. The purpose of using shampoo is to remove dirt that is build up on the hair without stripping out much of the sebum. Many synthetic shampoos are present in the current market both medicated and nonmedicated; however, herbal shampoo popularized due to natural origin which is safer, increases consumer demand and free from side effects. In synthetic shampoos, surfactants (synthetic) are added mainly for their cleansing and foaming property, but the continuous use of these surfactants leads to serious effects such as eye irritation, scalp irritation, loss of hair, and dryness of hairs. Alternative to synthetic shampoo we can use shampoos containing natural herbals. However,

2. OBJECTIVES –

1. To assess the shampoo made with herbs.
2. The leafy, fruity, and root portions are used in the formulation.
3. To lessen the toxicity of the chemical composition.
4. To enhance the texture of hair.
5. To make the hair colour darker.

3. INGREDIENTS USED IN FORMULATION -

Sr. no	Constituents	Biological source	Family	Uses	Images
1	Amla	The biological source of Amla (Indian gooseberry) is the tree known as Phyllanthus emblica	Phyllanthaceae	Encourage hair growth	
2	Soap Nut	Obtained From Fruit of Sapindus genus	Soapberry	Stops hair loss	
3	Shikakai Extract	It consists the fruits of the plant Acacia concinna Linn.	Fabaceae	Make the hair shine more	
4	Neem	The biological source of neem is the neem tree itself.	Meliaceae	Best for scalp problems	
5	Aloe Vera	It obtained from dried Latex of Leaves	Asphodelaceae	Cleanses greasy hair thoroughly	
6	Acacia	It consists of the dried gummy exudation obtained from the stem and branches of Acacia arabica	Fabaceae	Hair conditioner strengthens the hair roots	
7	Rose Water	Sepals and petals of Rose	Rosaceae	Gives the shampoo fragrance	

4. METHOD PREPRATION OF HERBAL SHAMPOO –

Decoction Method –

• Determined the weight of each ingredient using the formula. Dissolution A mixture of one part water and soap nut, shikakai, henna, neem, amla, and alovera gel was made.

• Using muslin cloth, filter it. Gather the filtrate. In another portion of water, a decoction of soap nuts and shikakai was made.

• Using muslin cloth, filter it. Gather the filtrate.

• Constantly stirred the above filtrate mixtures together.

• Combined Acacia as a thickening ingredient to preserve the semisolid consistency of herbal shampoo.

• Lastly, perfume and preservatives were applied.

The different batches F1,F2, F3 were prepared by changing the concentration of soap nut powder to enhance the cleansing property.

Table no. 1

CONSTITUENTS	F1 Batch	F2 Batch	F3 Batch
Shikakai powder	10g	10g	10g
Amla powder	10g	10g	10g
Neem powder	10g	10g	10g
Soap nut powder	10g	20g	30g
Acacia gum	3g	3g	3g
Aloe vera gel	1g	1g	1g
Methyl paraben	1ml	1ml	1ml

5. EVALUATION OF HERBAL SHAMPOO -

The prepare Batches F1,F2 , F3 of herbal shampoo where evaluated for the parameter like physical appearance , PH determination , solid content etc

The results are shown in table no .2-

Table no.2

Sr. No	Evaluation Tests	F1 Batch	F2 Batch	F3 Batch
1	Physical appearance	Brown	Dark brown	Dark brown
2	PH Determination	5.5	5.6	6.3
3	Rheological evaluation	1.79cps	1.84cps	1.83cps
4	Percentage of solid content	3.4%	3.6%	3.65%
5	Dirt Dispersion	moderate	Light	heavy
6	Cleansing action	6.8	5.2	5.3
7	Foaming Stability	Poor	Good	Good
8	Foaming ability	150	158	170
9	Nature of hair after washes	oily	Soft and managable	Dry and non managable

1. Physical appearance –
   The color, clarity, odor, and foam content of the produced formulation were all evaluated.

2. PH Determination –A pH analyzer was used to measure the pH of the produced herbal shampoo in 10% v/v distilled water at room temperature.

3. Determination Of percentage Solid Content –
   Weighing an evaporating dish that was dry and clean, we poured four grams of herbal shampoo to it. Only the precise weight of the shampoo was determined, and it was then placed on the hot plate in an evaporating dish with the shampoo until the liquid portion evaporated. After drying, the weight of the shampoo alone (solids) was determined.

4. Rhelogical Evaluation –
   A viscometer was used to determine the shampoo's viscosity. Throughout the investigation, the size of the sample containers remained constant, and the viscosity of the shampoos was assessed in relation to temperature.0

5. Dirt Dispersion –
   10 milliliters of distilled water were placed in a big test tube, and two drops of shampoo were added. After adding one drop of ink, the test tube was stopped and shaken ten times. It was judged that there was none, mild, moderate, or substantial ink in the foam.

6. Skin Sensitization –
   Human volunteers' skin is used in this test to determine whether or not skin irritation occurs.

7. Foaming Stability and ability –
   The foaming ability was determined using the cylinder shaking method. 50 ml of the 1% shampoo solution was placed in a 250 ml graduated cylinder, covered with a hand, and shaken for 10 times. After 1 minute of shaking, the total volume of the foam contents Only the foam volume was calculated. The volume of foam was measured at 1 minute intervals for 4 minutes immediately after shaking.

8. Nature of hair after washes –
   Collecting responses from volunteers can be used to determine the nature of hair after washing.

6. RESULT AND DISCUSSION –

From the result it is concluded that the increase in Soap nut concentration enhance the cleansing but if further concentration is increased the scalp will become dry with frizzy hair

7. CONCLUSSION -

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.

There is a strong need to change the consumer perceptions of a good shampoo

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