

# Formulation and Evaluation of Herbal Shampoo

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**Abstract:** The increasing consumer demand for natural and chemical-free personal care products has led to a growing interest in herbal formulations. This study focuses on the formulation and evaluation of a herbal shampoo using natural ingredients known for their cleansing, conditioning, and antimicrobial properties. Ingredients such as Shikakai (*Acacia concinna*), Reetha (*Sapindus mukorossi*), Amla (*Phyllanthus emblica*), Neem (*Azadirachta indica*), and Aloe vera were selected based on their traditional use in hair care. The shampoo was prepared using aqueous extracts of these herbs without the inclusion of synthetic surfactants. The formulated shampoo was then evaluated for various physicochemical properties including pH, viscosity, foam stability, dirt dispersion, solid content, and surface tension, as well as its cleansing and conditioning effects on hair. Results showed that the herbal shampoo met standard quality parameters and provided effective cleansing with minimal side effects. The study concludes that the formulated herbal shampoo is a promising alternative to commercial chemical shampoos, offering safety, efficacy, and user acceptability..

**Keywords:** Herbal Shampoo; Natural & Healty Mendhika , Sarpantina Indica, Evaluation of shampoo.

## I. INTRODUCTION

1. Hair is an important part of human beauty.
2. Hair is made of a protein and grows from tiny holes in the skin called hair follicles.
3. The scientific name for hair is pili or pilus.
4. Hair is part of the skin system and grows from deep inside the skin in a place called the hair follicle.
5. Hair is one of the special features that make mammals (like humans) different from other animals. For people, hair shows signs of health, youth, and even social status.
6. Hair helps us feel things, protects us from cold and sunlight, and can affect how we feel about ourselves when we lose it or when it gets damaged.

## AIM AND OBJECTIVE:-

Aim :-

To make a natural (herbal) shampoo using plants and test how well it works.

Objectives:-

1. To choose herbs that are good for hair, like Reetha, Shikakai, Amla, Neem, and Aloe vera.
2. To prepare a shampoo using these herbal ingredients.
3. To test the shampoo for:
  - PH (to check if it's gentle on hair)
  - Foam (how much lather it makes)
  - Cleaning power
  - Thickness

## PLAN OF WORK :-

Selection of plant-





Authentication of plant-



Drying and extraction of Parts of plant –



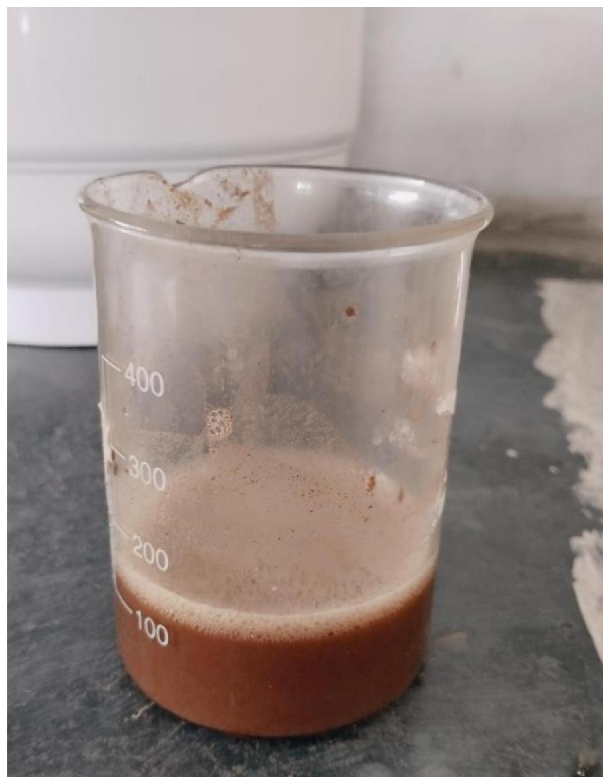


#### Evaluation of Herbal shampoo

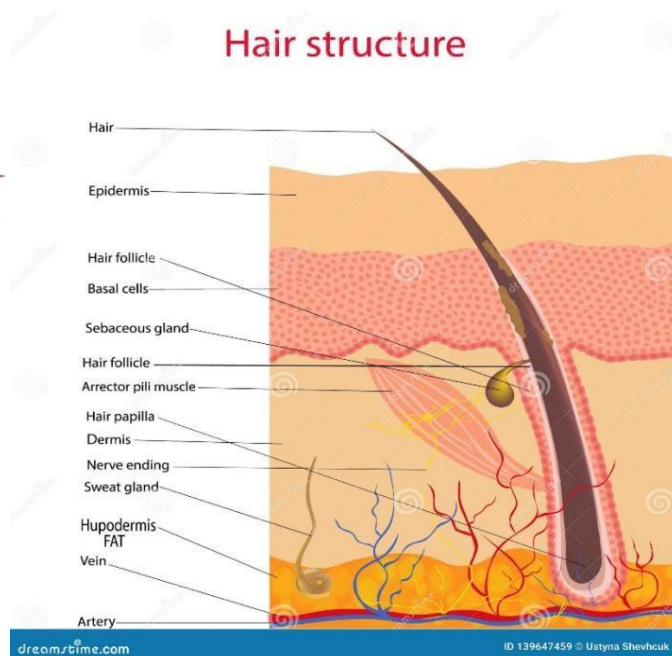
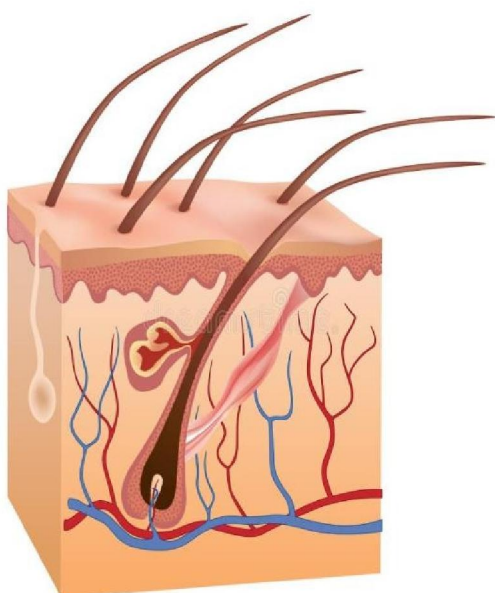




Result and discussion –



ANATOMY OF HAIR:-



- PROBLEMS OF HAIRS :-
- DANDRUFF
- HAIR LOSS
- FRIZZY HAIR
- COLOR DAMAGE
- SPLITS END HAIR
- DRY HAIR
- GREY HAIR

• HERBAL SHAMPOO:-

They are the cosmetic preparations that with the use of traditional ayurvedic herbs are meant for cleansing the hair and scalp just like the regular shampoo.

They are used for removal of oils, dandruff, dirt, environmental pollution, etc

Advantages of Herbal Shampoo :-

- Herbal shampoos are made from natural and organic ingredients. They don't have harmful chemicals, so they are safe to use.
- They are eco-friendly and break down easily in nature, so they don't harm the environment.
- They are gentle and usually don't cause burning or irritation in the eyes.
- Herbal shampoos are not too costly and are affordable.
- Using herbal shampoo regularly can make your hair healthier and stronger.
- They help keep the right amount of oil on your scalp—not too dry or too oily.
- Herbal shampoos have natural antiseptic (germ-fighting) properties that protect your scalp and hair from sun damage and infections.

Benefits of Using Herbal Shampoo :- Promotes hair growth-

The natural ingredients in Herbal Shampoo promote hair growth, strengthen hair, and prevent breakage and split ends.

Natural and Safe-

Herbal Shampoo is free from harsh chemicals often found in conventional shampoos, making it safer for both you and the environment.

Eliminates Dandruff and Other Scalp Conditions

The natural antiseptic properties in Herbal Shampoo effectively combat dandruff and other scalp conditions, leaving your hair healthy and beautiful.

Ingredients Used in Herbal Shampoo -

Herbal Shampoo is made up of natural ingredients such as aloe vera, tea tree oil, amla, shikakai, ritha etc. These ingredients have proven to be gentle on hair while also promoting hair growth and minimizing dandruff and other scalp conditions.



**DRUG PROFILE :-**

**1) Hibiscus -**



Figure.no :5.1 Hibiscus Flower

Drug profile -

Part used –

Uses -

Kingdom: Plantae

Genus: Hibiscus; L.

Family : Malvaceae

Division :Tracheophyta

**Flower**

1. Hibiscus Tea – Made from dried flowers, it helps lower blood pressure and improve heart health.
2. Hair Treatment – Used in oils and shampoos to promote hair growth and reduce dandruff.
3. Skin Care – Used in face masks to keep skin soft, reduce wrinkles, and treat Acne.

**2) Amla-**

Drug profile:-

Part used –



Figure No. 5.2Amala fruit

Kingdom:Plantae

Genus:Phyllanthus

Family:Phyllanthaceae

Division:Flowering plant

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DOI: 10.48175/IJAR SCT-27283



Fruit

Uses -

1. Boosts Immunity – Amla is rich in vitamin C, which helps the body fight infections.
2. Good for Hair – Amla oil or juice makes hair strong, shiny, and helps reduce hair fall.
3. Improves Digestion – Eating amla helps with digestion and reduces acidity.
4. Good for Skin – Amla juice or powder keeps skin clear and glowing.
5. Controls Blood Sugar – Amla helps manage blood sugar levels, useful for people with diabetes

**Shikakai :-**



Figure No. 5.3 Shikakai powder

- Drug profile :-
- Kingdom: Plantae (Plants)
- Genus: Acacia
- Family: Fabaceae
- Division: Magnoliophy
- Part used –

Shikakai powder

• Uses -

- 1 Natural Shampoo – Shikakai is used as a herbal cleanser for hair; it cleans the scalp without removing natural oils.
2. Promotes Hair Growth – Regular use of Shikakai helps make hair longer, thicker, and stronger.
3. Prevents Dandruff – Its antifungal properties help remove dandruff and soothe an itchy scalp.

4) Ritha-



Figure No.:5.4Ritha Fruit

• Drug profile -

Part used –

Uses-

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- Kingdom: Plantae
- Family: Sapindaceae
- Genus: Sapindus

Fruit powder

1. It keeps the skin soft and supple and moisturizes the skin, preventing it drying.
2. Helps even out skin tone and perfect complexion
3. Reetha has natural conditioning properties that help in moisturizing your skin

#### Alovera -



Figure No:5.5Alovera leaf

Drug profile –

Kingdom: Plantae

Part use-

Uses-

Division: Magnoliophyt

Family - Asphodelaceae Genus- Aloes

Leaf

1. Skin Care – Aloe vera gel is used to treat cuts, burns, sunburn, and to keep skin soft And healthy.
2. Hair Care – It helps reduce dandruff, strengthens hair, and makes it shiny.
1. Digestion – Aloe vera juice helps with digestion and can relieve constipation.
2. Boosts Immunity – Drinking aloe vera juice can help improve the body's natural defense.
3. 3.Acne Treatment – Aloe vera has antibacterial properties that help reduce pimples and acne.

#### Henna -



Figure No :-5.6 Heena Leaf





- Drug profile -  
Kingdom: Plantae  
Division :Spermatophytina Family: Lythraceae  
Genus: Lawsonia
- Part used –  
Leaf
- Use-  
1 Natural Hair Dye – Henna is used to color hair naturally without harmful chemicals  
3. Hair Conditioner – It strengthens hair, adds shine, and reduces hair fall.  
4. Scalp Health – Henna has cooling and antifungal properties that help treat dandruff and itchy scalp.  
5. Skin Cooling – Applied on hands and feet, henna gives a cooling effect, especially in summer.  
6. Wound Healing – Henna leaves can be used in herbal pastes to help heal small wounds or skin infections.

#### INGREDIENTS :-

##### • Surfactants:

Surfactants are substance such as a detergent that, when added to a liquid, reduces its surface tension, thereby increasing its spreading and wetting properties

##### • Preservatives:

Preservatives help to prevent the growth of bacteria and fungi in the shampoo. They are derived from natural sources, such as lemon juice, tea tree oil.

##### • Conditioners:

Conditioners help to moisturize the hair and make it manageable. They are derived from natural sources, such as aloe vera,

#### MATERIALS AND METHODS :-

##### Method-

| INGREDIENTS            | QUANTITY |
|------------------------|----------|
| Herbal extracts        | 20ml     |
| sodium lauryl sulphate | 20ml     |
| 0.1m Nacl              | 20 ml    |
| Acacia gum             | 10ml     |
| Glycerine              | 2ml      |
| Vit.E capsule          | 2        |
| Lemon juice            | 2ml      |
| Essential oil          | q s      |
| Water                  | 25ml     |

#### PROCEDURE:-

-Calculate all ingredients as per formula 5gm curry patta powder, 5gm ginger, 10gm aloe Vera, 20gm reetha, 5gm orange peel powder mixed in 100 ml water in stainless steel vessel

-The mixture was kept for boilin reduced to one quarter .it was then filtered .the clear extract obtained g until the water used as herbal extract

##### • Evaluation Methods for Herbal Shampoo-

The effectiveness of herbal shampoos is evaluated using a variety of methods, including

• Foaming: The amount of foam produced by the shampoo is a measure of its cleaning power.



- Conditioning The conditioning properties of the shampoo are evaluated by measuring how much it improves the manageability and smoothness of the hair.
- Detergent efficiency The detergent efficiency of the shampoo is a measure of its ability to remove dirt and oil from the hair.
- Safety: The safety of the shampoo is evaluated by testing it for potential toxicity and irritation.

### **EVALUATION TEST RESULT**

#### 1) Physical test -

Dark brown colour

Good foaming ability

#### 2) Sensitivity test-

No irritation

#### 3) PH -

pH range between [4.5-5.5]

By using pH paper or digital pH meter

#### 4) Solid contents-

- Total solid content found in shampoo
- 3.8%

#### 5) Dirt dispersion-

- Clear texture it passed light
- Light dispensability

#### 6) Foaming ability-

- Good foaming ability
- Stability performance

### **RESUEL T**

The shampoo was formulated by admixing the equal amount of the aqueous extracts of all the ingredients with soapnut . The above plant extract contains phytoconstituents like saponins which is a natural surfactant having detergent property and foaming property. An ideal shampoo must have adequate viscosity and many natural substances possess good viscosity. The gelatin solution (10%) behaves as a pseudoplastic forming clear solutions. Lemon juice (1 ml) added to the shampoo serves as anti-dandruff agent, natural antioxidant, and chelating agent and maintains the acidic pH in the formulation

### **II. CONCLUSION**

The objective of the study was to develop a stable and functionally effective herbal shampoo by excluding synthetic chemicals,

Which are normally incorporated in such formulations to larger extent.

Synthetic hair shampoo is known to damage the hair cuticle leaving it brittle, dull and dry.

Although the formulated shampoo contains synthetic chemical as SLS (7.5%) but its percentage is too small as compared to synthetic shampoo (10-40%) available in the market.

The evaluation study on our shampoo showed good cleaning action, better foaming capacity, and quick wetting time.

We have used Aloe-vera gel to provide the cond effects.

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