



Formulation And Evaluation of Polyherbal Shampoo Powder A Research

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Abstract

The increasing preference for herbal and natural products in personal care has driven interest in the development of herbal alternatives to synthetic shampoos, which often contain harsh chemicals linked to scalp irritation, hair damage, and environmental concerns. This study was undertaken to prepare and evaluate a polyherbal shampoo powder using selected medicinal plants traditionally known for their hair cleansing, conditioning, and antimicrobial properties. The primary aim was to develop a safe, effective, and eco-friendly formulation with minimal or no side effects, catering to the growing demand for natural hair care solutions.

In this formulation, The Drug Includes Olive Leaves, Hibiscus Flower, methi, Ritha, Curry Leaves, Pomegranate Peel, Peppermint, Shikakai. The herbs were selected based on their individual and synergistic benefits for scalp and hair health, such as natural cleansing ability, antifungal and antibacterial effects, prevention of dandruff, strengthening of hair roots, and promotion of hair growth. Each ingredient was dried, powdered, and sieved to achieve a fine and uniform consistency, followed by blending in optimized proportions to obtain the final polyherbal shampoo powder.

The prepared formulation was subjected to comprehensive physicochemical and performance evaluations, including organoleptic properties (colour, odour, texture), pH determination, foaming ability, foam retention, wetting time, dirt dispersion, and cleansing efficiency. These parameters are critical in assessing the quality and acceptability of any shampoo product.

Results revealed that the polyherbal shampoo powder possessed desirable physical characteristics and produced adequate foaming upon application with water. The pH of the formulation was within the ideal range for scalp use (between 5.5 and 6.5), indicating mildness and compatibility with human skin. It showed efficient cleansing ability by effectively removing dirt and oil without leaving residues, reflecting the formulation's good spreadability and ease of application. No microbial contamination was detected, and the powder remained stable over the observation period without signs of physical or chemical degradation.

Overall, the polyherbal shampoo powder developed in this study offers a promising alternative to conventional shampoos. It provides a natural and safe approach to hair cleansing and care without the risks associated with synthetic additives such as sulfates, parabens, and artificial fragrances. Moreover, its preparation is simple, cost-effective, and sustainable, making it suitable for both household use and potential

commercial development. The results encourage further research into standardization, long-term stability, and user acceptability, as well as clinical studies to validate its therapeutic efficacy for various scalp and hair conditions.

Keywords: Polyherbal shampoo powder: Olive leaves, Hibiscus, Fenugreek, Ritha, sikakai Pomegranate Peppermint, Curry leaves, easy rinsing, No damage to hairs.

Introduction

The polyherbal powder shampoo combines the goodness of seven powerful natural ingredients, each known for its unique benefits for hair and scalp health. This shampoo is designed to provide a holistic approach to hair care, using the power of herbs that have been trusted for centuries in Ayurvedic and traditional medicine.

The ingredients include Seven Olive Hibiscus, Methi (Fenugreek), Ritha (Soap nut), Shikakai, Pomegranate, Peppermint, Curry Patta (Curry Leaves). Together, they provide nourishment, strengthen the hair, and address various hair-related concerns such as hair fall, dandruff, and scalp infections. Hair is the important protective part of body which provide protection to the body. The shampoo used in routine to clean hairs and scalp and also for debris removing. There are various synthetic and herbal shampoo but the herbal shampoo is better in activity and safer than synthetic shampoo.

Various synthetic compounds and their derivatives have harmful effects now a days peoples are aware about the hair care due to this reason the population is getting attracted to herbal product due to their inexpensive nature and negligible side effects.

The selection of active ingredients for hair care shampoo powder is based on the ability of ingredients to prevent skin and hair damage as well as improving the quality of cleansing nourishing and protecting the hair and skin. The objective of present research work is to prepare an herbal shampoo powder that clear sebum dirt debris dandruff promote hair growth provide strength and colour hair. The herbal shampoo powder show its action without affecting and damaging hairs.

Ideal characteristics of Shampoo

Shampoo formulations seek to maximize the following qualities:

1. Easy rinsing
2. Good finish after washing hair
3. No damage to hair

Types of Shampoo

According to the nature of the products the shampoo products can be classified as follow.

1. Powder shampoos
2. Clear liquid shampoos
3. Liquid cream or lotion shampoos
4. Oil shampoos
5. Miscellaneous including anti-dandruff medicated shampoo

Advantages of Polyherbal Shampoo

1. Polyherbal shampoos are typically made from multiple plant-based ingredients, which reduces the reliance on synthetic chemicals that may damage hair or irritate the scalp.

2. Multiple Benefits: Since they combine several herbs, these shampoos can address various hair concerns at once, such as dandruff control, hair fall reduction, scalp nourishment, and promoting hair growth.
3. Fewer Side Effects: Compared to chemical-based shampoos, polyherbal variants are generally gentler on the scalp and hair, making them suitable for sensitive skin
4. Eco-Friendly.
5. Many polyherbal shampoos are biodegradable and use fewer harmful additives, making them a better option for the environment.
6. Traditional Wisdom: These shampoos often draw on ancient Ayurvedic or herbal medicine practices, offering time-tested solutions for hair care.

Plant profile

Olive [*Olea Europaea*]



Fig. olive leaf

Botanical Name: - *Olea Europaea* L

Family:- Oleaceae

Chemical Constituents: - Phenolic compounds and flavonoids and simple phenol

Uses:

Hair serum: use few drops of olive oil on damp hair

Pre -wash pack: Apply olive oil to hair before washing to nourish and moisturizing it

Hibiscus [*Hibiscus rosa-sinensis*]



Fig: - Hibiscus

Botanical Name: - *Hibiscus rosa-sinensis* L

Family: - Mallow

Chemical constituents: Flavonoids, tannins, anthocyanins and other compounds.

Uses:

- Stimulate hair growth and strengthen hair follicles.
- Hibiscus can treat dandruff and itchy scalp.
- Hibiscus can reduce hair fall.

Fenugreek [*Trigonella foenum-graceum* L]



Fig: Fenugreek (Methi)

Botanical Name:- *Trigonella foenum-graceum*

Family:- Fabaceae

Chemical constituent: carbohydrates, proteins, lipids, fibres, alkaloids, flavonoids, and vitamins

Uses: -

Digestion: Fenugreek's high fibre content can aid digestion and alleviate digestive discomfort.

Blood Sugar Control: Some studies suggest fenugreek may help regulate blood sugar levels, potentially preventing type 2 diabetes.

Anti-inflammatory Properties: Fenugreek contains compounds with anti-inflammatory properties, which may help reduce inflammation in the body.

Ritha [*Sapindus mukorossi*]



Fig: Ritha

Botanical Name: - *Sapindus mukorossi*

Family:- Sapindaceae

Chemical constituents: saponins, triterpenoids.

Uses:-

Regular usage of Retha-based hair care products can make your hair feel soft,, And shiny . Promotion of Hair Growth: Reetha has traditionally been associated with stimulating hair.

Sikakai [*Accacia Concinna*]



Fig: Sikakai

Botanical Name:- *Acacia concinna*

Family :-Mimosaceae

Chemical Constituents :- Saponins, tannins, flavonoids

Uses:-

- Controls Hair Fall: Shikakai helps to strengthen the hair roots, reduce breakage, control Minimize hair fall
- Reduces Dandruff: Its antifungal and anti-inflammatory properties help to combate Dandruff And other scalp issue.

Pomegranate [*Punica granatum*]



Fig: Pomegranate Peel

Botanical Name:- *Punica granatum*

Family:- Punicaceae

Chemical Constituents:- flavonoids, anthocyanins, tannins, phenolic compounds, organic acids, fatty acids

Uses :-

- **Strengthens Hair Follicles:** Pomegranate's nutrients help fortify the hair structure, reducing breakage and split ends.
- **Promotes Hair Growth:** Punicic acid, found in pomegranate, may stimulate hair growth by improving blood circulation to the scalp.

Peppermint [*Mentha piperita* L]



Fig: Peppermint Leaves

Botanical Name:- *Mentha piperita*

Family:- Lamiaceae

Chemical constituents :- menthol, menthone, menthyl acetate.

Uses :-

Stimulates hair growth , Reduce Dandruff , soothes irritation.

Curry leaves [Murraya koenigii]



Fig :- Curry leaves

Botanical Name:- Murraya koenigii

Family: -Rutaceae

Chemical Constituents:- Alkaloids and essential oil.

Uses:- • Infused oil: - potentially stimulate hair growth and improve overall hair health.

• Hair mask:- This mask can be applied to the hair to nourish and conditioning.

EXPERIMENTAL WORK

MATERIAL AND METHODOLOGY: -

A. Collection of Plant Material: -

The Materials used in the present study is Leaves of Hibiscus rosa sinensis Murraya koenigii [curry leaves), Sapindas Mukorossi (reetha), Acacia concinna (shikakai), methi, trigonella foenum -graecum olive [olea europaea], Piperminant [mentha piperita] pomegranate [punica granatum] Were collected from nearby areas and dried in shade for 5 days and powdered for further use.

B. Preparation of herbal powder

All the herbs were shade dried for 5 days. After completely drying the herbs all the leaves were crushed and converted into powder form with the help of mortar and pestle.

Preparation OF Herbal Powder Shampoo:

Drying

Size -Reduction

Sieving

Weighing

Mixing

Filing Labelling and Packaging

1. Drying:

Water is traditionally removed through evaporation by using the methods such as air drying, sun drying the plant materials under shade at room temperature and grinded.

2. Size -reduction:

Size reduction is a process in which the particle size of a solid is made smaller. the size reduction applied In which ingredients are were size is reduced using mortar pestle If the starting material is to coarse, and the final product needs to a fine powder.

3. Sieving:

Sieving it is a process in which fine particles are separated from coarse particles by using a sieve it also helps to achieve uniform particle size

4. Weighing:

Ingredient are collected from medicinal plants and accurately weigh the required amount of each herb the quantity of each ingredient depends on the desired formulation.

5.Mixing

Mixing has been defined as the intermingling of two or more dissimilar portion of material in resulting the attainment of a desired level of uniformity, either physical or chemical in the final product.

6.Filling:

After mixing finished of hair product is filled in appropriate container.

7. Labelling and Packaging:

When the labelling and packaging of herbal powders, keep in an appropriate air tight container they need to stay extra air tight so no moisture can get in, and they are less exposed to oxidation.

EVALUATION PARAMETER OF POLYHERBAL POWDER SHAMPOO

The formulation of polyherbal powder shampoo was subjected to Following evaluation parameters

1.Organoleptic evaluation:

The evaluation of organoleptic parameters such as colour, odour, appearance, and texture was carried out special feature are colour and texture are evaluated by visual and touch sensation respectively. The formulation was sensed in order to examine the odour.

2. Appearance and homogeneity: - It was determined by visually.

3. Grittiness:

Grittiness to evaluated to ensure a smooth and non -abrasive texture .it is assessed by tactile testing [feel between fingers] and sieve analysis to evaluate particle size A smooth powder should pass through an 80 - 100 mesh sieve minimal grittiness to ensures better application and scalp comfort.

4. Skin and scalp irritation test:

Skin and scalp irritation test washed evaluated by applying polyherbal powder shampoo on skin and left for 30 min. after 30 minutes of washing observed to confirm the product is non – irritating.

5. PH: -

10% of solution of polyherbal powder shampoo was taken in distilled was determined at room temperature 25 c. the PH was measured by digital.

6. Viscosity:

The viscosity of polyherbal powder shampoo was determined by using Brookfield viscometer.

7. Angle of repose:

It is define as the maximum angle are possible in between the surface of pile of powder to the horizontal flow. it reflects the flowability of the powder -lower angles indicate better flow properties.

8. Foam height:

1 gm of sample of polyherbal powder shampoo was taken and weigh accurately and transfer into 250 ml of conical flask containing 100 ml of boiling water. then is warm gently for 30 minutes, cooled and filtered and make up the volume to 100ml in standard volumetric flask. This solution is taken 10 test tubes in series of successive portion of 1,2, and 3. 10 ml and remaining volume is made up with water to 10ml. The test tubes were shaken in 15 seconds Then the test tubes is allowed to stand for 5 minutes and the height of foam was measured.

Result and Discussion:

Sr. No.	Evaluation	Result
1	Colour	Brown
2	Odour	Characteristic
3	Taste	Slight
4	Texture	Fine and smooth
5	Washability	Soft manageable
6	Solubility	Soluble
7	Skin /Eye irritation test	No harmful effect on skin/eye
8	Foamability	Good foaming
9	Dirt dispersion	Moderate
10	Stability	Stable

CONCLUSION:-

The formulation of a polyherbal shampoo powder using natural ingredients such as olive, hibiscus, methi (fenugreek), ritha (soapnut), shikakai, pomegranate, peppermint, and curry leaves offers a promising alternative to synthetic hair care products. Each of these herbs is known for its unique therapeutic properties, which collectively enhance hair health and scalp nourishment. Olive and hibiscus help moisturize and strengthen the hair, while methi provides proteins and essential nutrients to promote growth and reduce hair fall. Ritha and shikakai serve as natural cleansers, effectively removing dirt and excess oil without stripping the scalp of its natural moisture.

Pomegranate adds antioxidant properties that support scalp health and stimulate hair follicles. The synergistic effect of these ingredients makes the shampoo powder effective for cleansing, conditioning, and revitalizing hair naturally.

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