

Formulation and Evolution of Herbal Shampoo

Miss. Geeta Madhukar Abuj, Miss. Pallavi Ramkisan Gat,

Miss. Pallavi Dadasaheb More , Dr. L. D. Hingane

Aditya Diploma Institute of Pharmacy, Beed, Maharashtra, India

Abstract: *Shampoos are one of the cosmetic products used in daily life. Synthetic preservatives and detergents have sometimes been the cause of adverse effects among consumers. A more radical approach in reducing the synthetic ingredients is by incorporating natural extract whose functionality is comparable with their synthetic ingredients. This herbal shampoo was formulated using natural ingredients like Fenugreek seeds, Acacia concinna (shikakai), Sapindus mukorossi (reetha), Ocimum sanctum (tulsi), Aloe vera (aloe), Hibiscus rosa sinensis (china rose), Azadirachta indica (Neem), Lawsonia inermis (henna), Citrus lemon (lemon), with proven efficacy of hair care preparation is prepared. The combination of several such ingredients of herbal origin has made it possible to secure highly effective dry powder shampoo. The formulation at laboratory scale was done and evaluated for number of parameters to ensure its safety and efficacy. The main objective of this present study is to prepare and evaluate an herbal shampoo and determine physicochemical function that emphasizes on safety, which is used to remove grease, dirt, dandruff.*

Keywords: Herbal shampoo, cosmetics, Traditional ingredients

I. INTRODUCTION

1.1 Herbal Shampoo

Shampoos are probably the most widely used cosmetic products for cleansing hairs and scalp in our daily life. Herbal shampoos 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 pollutions etc. Herbal shampoo is a type of cosmetic preparation that uses herbs from plants as an alternative to the synthetic shampoo available in the market. The herbal shampoo is important, as people nowadays prefer herbal products than chemical ones for they proved to enhance health. The awareness and need for cosmetics with herbs are on the rise, primarily because it is believed that these products are safe and free from side effects. Herbal shampoo is a type of cosmetic preparation that uses herbs from plants as an alternative to the synthetic shampoo available in the market. The herbal shampoo is important, as people nowadays prefer herbal products than chemical ones for they proved to enhance health.

1.2 Need of Shampoo

The skin on our head produces a greasy fluid called sebum. It is produced to protect the hair by coating itself all over the head. This gives the hair a healthy shine but when secreted in large amount it makes the hair look dirty.

1.3 History Indian subcontinent

In the Indian subcontinent, a variety of herbs and their extracts have been used as shampoos since ancient times. A very effective early shampoo was made by boiling Sapindus with dried Azadirachta indica (Neem) and a selection of other herbs, using the strained extract. Sapindus, also known as soapberries or soapnuts, a tropical tree widespread in India, is called ksuna [3]. In ancient Indian texts and its fruit pulp contains saponins which are a natural surfactant. The extract of soapberries creates a lather which Indian texts called phenaka [4]. It leaves the hair soft, shiny and manageable. Other products used for hair cleansing were shikakai (Acacia concinna), hibiscus flowers, [5][6] ritha (Sapindus mukorossi) and arappu (Albizia amara) [7]. Guru Nanak, the founder and the first Guru of Sikhism, made reference to soapberry tree and soap in the 16th century. [8] Cleansing with hair and body massage (champu) during one's daily bath was an

indulgence of early colonial traders in India. When they returned to Europe, they introduced the newly learned habits, including the hair treatment they called shampoo [9].

1.4 Advantages of herbal shampoo

- It provides shine to hairs.
- Also minimizes the loss of hairs.
- Provides a long lasting natural colour to hairs.
- It must include all natural ingredients and is chemical free.
- It wont irritate skin or scalp

1.5 Disadvantages of herbal shampoo

- Herbal drugs have slower effects as compare to Allopathic dosage form.
- Also it requires long term therapy.
- They are difficult to hide taste and odor.
- Most of the herbal drugs are not easily available.
- Manufacturing process are time consuming and complicated.
- No pharmacopoeia defines any specific procedure or ingredients to be used in any of herbal cosmetics.

1.6 Ideal characters of shampoo

- Should effectively and completely remove the dust, excessive sebum.
- Should effectively wash hair.
- Should produce a good amount of foam
- The shampoo should be easily removed by rinsing with water.
- Should leave the hair non dry, soft, lustrous with good, manageability.
- Should impart a pleasant fragrance to the hair.
- Should not make the hand rough and chapped.
- Should not have any side effects or cause irritation to skin or eye.

1.7 Types of shampoo

- Liquid shampoo
- Powder shampoo
- Conditioning shampoo
- Antidandruff

1.8 Function of herbal shampoo

- Lubrication
- Conditioning
- Hair Growth
- Maintenance of Hair Color
- Medication

II. METERIALS AND METHODS

2.1 Material required for the preparation of herbal shampoo

A. Reetha fruit:

It is scientifically known as sapindus mukorossi; is a large deciduous tree of sapindaceae family. It is commonly known by names like soapberry, soapnut, washnut, aritha, dodan, dodani.



Properties of Reetha

- It may have antifungal activity.
- It may have antibacterial activity.
- It may have anti-protozoal activity.

Uses of Reetha for Hairs

- Reetha is a popular ingredient of many ayurvedic shampoos and cleansers.
- The dried fruit powder may be used as a foaming agent in shampoos.

B. Aloe Vera:



- Calms an itchy scalp
- Deep cleans oily hairs
- Strengthens
- Aloe vera contains proteolytic enzymes which repairs dead skin cells on scalp
- Promote hair growth
- Smooth natural curls
- Reduce frizziness

C. Hibiscus



- stimulate hair growth and lost hair volume and luster over the years
- conditions hairs
- prevent baldness
- treat dandruff and itchy scalp
- prevents premature greying

D. Neem



- Increases immunity
- Moisturises skin
- Improves digestion
- Oral health
- Promotes hair growth
- Fights signs of aging
- Anti-Septic Properties
- Eye Trouble
- Anti-fungal C anti-bacterial
- Blood purification

E. Rose oil



- Improve aroma of herbal shampoo
- Used for the fragrance.

METHODS

Preparation of extract:

About 100 g of each powdered plant materials, namely Neem, Hibiscus flower, Aloe vera, Shikakae, Liquorice, Amla, Soap nut were homogenized. The powdered material was extracted with distilled water by boiling for 4 h. The extract of each plant material was separated and evaporated.

Sn.	Drug Name	Parts	Quantity for 100g
1	Neem powder	leaves	09%
2	Hibiscus flower powder	Flower	12%
3	Aloe vera	leaves	07%
4	Shikakai powder	Pods	22%
5	Reetha	Nut	20%

Table 1: extraction of herbal drug

Formulation of herbal shampoo:

Formulation of the herbal shampoo was done as per the formula given in Table 1. To the gelatin solution (10%), added the herbal extract and mixed by shaking continuously at the time interval of 20 min. 1 ml of lemon juice was also added with constant stirring. To improve aroma in the formulation, sufficient quantity of essential oil (rose oil) was added and made up the volume to 100 ml with gela

Material Required	Quantity	use
Neem	0.5g	Antibacterial agent
Aloe vera	1g	Moisturizing agent
Hibiscus	0.5g	Conditioning
Rose Oil	q.s	Fragrance
Lemon juice	q.s	Antimicrobial
Reetha	0.5g	Foaming agent
shikakai	0.5g	Detergent

Table 2: formulation of herbal shampoo

Evaluation of herbal shampoo

The prepared formulation was evaluated for product performance which includes organoleptic characters, pH, physicochemical characterization, and for solid content. To guarantee the nature of the items, particular tests were performed for surface tension, foam volume, foam stability, and wetting time using standard protocol

- Visual assessment
- PH determination
- Determination of solid content percentage
- Surface tension measurement
- Testing of wetting
- Foam stability test
- Conditioning performance evaluation
- Dirt dispersion test

Visual assessment-

The prepared formulation was assessed for color, clarity, odor, and froth content.

pH determination-

The pH of the prepared herbal shampoo in distilled water (10% v/v) was evaluated by means of pH analyzer at room temperature [12].

Surface tension measurement-

The prepared shampoo in distilled water (10% w/v) was evaluated for surface tension using stalagmometer in room temperature [14]

Foam stability test-The stability-

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 [15]. The total foam volume was measured after 1 min of shaking.

III. RESULT

The shampoo was formulated by admixing the equal amount of the aqueous extracts of all the ingredients with soapnut (Table 1). 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.

IV. CONCLUSION

The present study was point out with the object of preparing the herbal shampoo that reduces hair loss promote growth and strength of hair . Herbal shampoo was formulated with the aqueous extract of medicinal plants that are commonly used for cleansing hair traditionally. Use of conditioning agents (synthetic) reduces the protein or hair loss. To provide the effective conditioning effects, the present study involves the use of shikakai, amla, and other plant extracts instead of synthetic .

REFERENCES

- [1]. Mainkar AR, Jolly CI. Formulation of natural shampoos. Int J Cosmet Sci .
- [2]. Aghel N, Moghimipour B, Dana RA. Formulation of a herbal shampoo using total saponins of *Acanthophyllum squarrosum*. Iran J Pharm Res.
- [3]. Potluri A, Asma SS, Rallapally N, Durrivel S, Harish GA. Review on herbs used in anti- dandruff shampoo and its evaluation parameters. Indo Am J Pharm Res.

- [4]. Shinde PR, Tatiya AU, Surana SJ. Formulation development and evaluation of herbal antidandruff shampoo. Int J Res Cosmet Sci .
- [5]. Firthouse PU. Effects of Ocimum sanctum and Azadiracta indica on the formulation of antidandruff herbal shampoo powder. Der Pharm Lett .
- [6]. Pooja A, Arun N, Maninder K. Shampoos based on synthetic ingredients vis-à-vis shampoos based on herbal ingredients: A review. Int J Pharm Sci Rev Res
- [7]. Kapoor VP. Herbal cosmetics for skin and hair care. Nat Prod Radiance . [8]. Sanskrit Lexicon, Monier-Williams Dictionary (1872)
- [9]. Pawan Maurya, Shashikant Maurya, Piyush Yadav, Manoj kumar Yadav, Suraj Maurya, satyam jayswal shampoo ased on natural ingredient .
- [10]. Virginia Smith (2007), Clean: A History of Personal Hygiene and Purity, Oxford University Press,
- [11]. Balsam, S.M., Gershon, S.D., Rieger, M.M., Sagarin, E., and Strianse, S.J.: Cosmetic Science and Technology, 2nd edition, Vol 2, John Wiley India, New Delhi, 2008
- [12]. Barel, A.O., Paye, M., and Maibach, H.I.: Handbook of Cosmetic Science and Technology, 3rd Edition, Informa Healthcare, New York.
- [13]. Badi KA, Khan SA. Formulation, evaluation and comparison of the herbal shampoo with the commercial shampoo. Beni-Suef Univ J Basic Appl Sci 2014;3:301-5