JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue
JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)
An International Scholarly Open Access, Peer-reviewed, Refereed Journal

Formulation And Evaluation Of Herbal Shampoo

Samadhan M. Gaikwad*, Amol Dharamsale , Prashant Chougule , Prashant Dahiwade , Aarti K. Giram

ABSTRACT:

The objective of this study is to formulate and evaluate poly-herbal shampoo for cosmetic purpose from herbal ingredients. Amla powder, Shikakai powder, Alo-vera gel was procured from local market in powdered form also gel form Banyan root powder and Soya milk is prepared by homemade method, then prepared decoction of these ingredients and mixing with each other and evaluated for it'sorganoleptic and physico-chemical characteristics. Herbal shampoo is used to cleansing of the hair also conditioning, smoothing, of the hair surface, good health of hair, hair free of dandruff, dirt grease and lice above all, it's safety benefits are expected. The advantage of herbal cosmetics is their non-toxic nature, reduce the allergic reactions and time tested usefulness of many ingredients. Thus in present work, we found good properties for the herbal shampoo and further optimization study benefits of herbal shampoo on human use as cosmetic product .

Keywords: Shampoo, herbal , hair issues, cosmetics

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, formulating cosmetic products containing only natural substances are very difficult . There are a number of medicinal plants with potential effects on hair used traditionally over years around the world and are incorporated in shampoo formulation .These medicinal plants may be used in extracts form, their powdered form, crude form, or their derivatives. To develop a shampoo containing an only one natural substance which would be safer with milder effect, then the synthetic shampoo is difficult and also it should possess good foaming, detergency, and solid content as such synthetic shampoo. Hence, we considered in detailing an unadulterated natural cleanser utilizing conventional technique using regularly utilized plant material for hair washing .

A shampoo is basically a solution of a detergent containing suitable additives for other benefits such as hair conditioning enhancement, lubrication, medication etc. Now-a-days many synthetic, herbal, medicated and non medicated shampoos are available in the market but popularity of herbal shampoo among consumers is on rise because of their belief that these products being of natural origin are safe and free from side effects. Synthetic surfactants are added to shampoo primarily for the foaming and cleansing action but their regular use leads to

dryness of hairs, hair loss, irritation to scalp and eyes .Herbal formulations are considered as alternative to synthetic shampoo but formulating cosmetics using completely natural raw material is a difficult task . There are large numbers of medicinal plants which are reported to have beneficial effects on hair and are commonly used in formulation of shampoo. These plant poducts may be used in their powdered form, crude form, purified extracts, or derivative form . It is extremely difficult to prepare a herbal shampoo using a single natural material that would be milder and safer than the synthetic ones, and at the same time would compete favorably with its foaming, detergency and solid content .We, therefore, considered to formulate a pure herbal shampoo using traditionally and commonly used plant materials for hair washing in such India and gulf region especially in Oman.(1)

Hair is one of the vital parts of the body derived from ectoderm of the skin and is protective appendages on the body and considered accessory structure of the integument along with sebaceous glands, sweat glands and nails. They are also known as epidermal derivatives as they originate from the epidermis during embryological development. Hair is an important part of the overall appeal of the human body .Hair is one of the external barometers of internal body conditions. Shampooing is the most common form of hair treatment. The primary function of shampoo is aimed at cleansing of the hair necessitated due to accumulated sebum, dust, scalp debris etc.. Various shampoo formulations are associated with hair quality, hair care habit and specific problems such as treatment of oily hairs, dandruff and for androgenic alopecia. Shampoos are liquid, creamy or gel like preparations. The consistency of the preparation depends on the inclusion of traditional soaps saturated with glycerides and natural or synthetic fatty alcohols or the thickening agents (e.g. gum, resin and PEG).20 Indian women use herbals as shikkakai and reetha that are natural cleansing agents without harmful effects. Hair is one of the external barometers of internal body conditions. Shampooing is the most common form of hair treatment(2).

BENEFITS OF HEARBAL SHAMPOO :

- More Shine
- Less Hair Loss
- Long Lasting Colours
- Stronger and More Fortified Hairs
- All Natural, No Chemicals
- Wont Irritate Skin or Scalp
- Keep Healthy Natural Oils

IMPORTANCE OF THIS FORMULATION :

- The selection of active ingredients for hair care shampoo is often based on the ability of the ingredient to prevent damage to skin as well as to improve the quality of the skin by way of cleansing, nourishing, and protecting the skin
- It have not make the hand rough and chapped.
- It’s not give any side effects or causes irritation to the eye.
- It produces a good amount of foam to satisfy the psychological requirements.

HERBS USED IN FORMULATION :

1) Shikakai :

It’s amazing how so many of our traditional Indian beauty regimes are making a come-back in this day and age. Take a look at shikakaior Acacia concinna, a climbing shrub that is native to Asia. Shikakai is commonly found in India and has been traditionally used as a hair cleanser in several parts of our country.

- Biological Name : *Acacia Concinna*
- Family : Mimosaceae
- Uses : Foam base and antidandruff
- Chemical Constituents : Lupeol, spinasterol, acacic acid, lactone, and the natural sugars glucose, arabinose and rhamnose.

2) Amla :

Strengthen the Scalp and Hair.

Reduce premature pigment loss from hair, or greying.

Stimulate Hair Growth.

Reduce Hair Loss.
Prevent or treat dandruff and dry scalp.

Prevent or treat Fungal and Bacterial hair and Scalp infections.

- Biological Name : *Phyllanthus emblica L.*
- Family : Euphorbiaceae
- Uses : Anti-diabetic, hypolipedemic, anti-microbial, anti-inflammatory, antioxidant, hepatoprotective and anti-emetic activities

METHOD OF PREPARATION :

- Weghied all the ingredients according to the formula.
- Decoction of Amla, Alovera gel, was prepared in one part of water.

- Filter it, by using muslin cloth. Collect filtrate.
- Decoction of Shikakai was prepared in another part of water.
- Filter it by using muslin cloth. Collect filtrate.
- Mixed to each other of above filtrate with constant stirring.
- Mixed gelatin as a thickening agent for maintenance of consistency of herbal shampoo as like semisolid nature.
- Preservatives and perfume was added lastly.

Formulation Table

Sr no.	Ingredients	Uses	Quantity
1	Amla	Antidandruff	10gm
2	Shikekai	Detergent	10gm
3	Aloe Vera gel	Reduce hair fall	1gm
4	Galantine	Base	q.s
5	Methyl paraben	Preservative	1gm
6	Citric acid	Adjust pH	q.s
7	SLS	Foaming agent	1gm
8	Rose Water	Perfume	q.s

fig 1: Formulation batch

EVALUATION OF SHAMPOO :

- **pH Determination**
- **Visual Assessment**
- **Surface Tension Measurement**
- **Testing Of Wetting**

- **Foaming Ability Test**
- **Dirt Dispersion Test**
- **Conditioning Performance Evaluation**

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. **1) Visual Assessment:**

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

2) pH Determination:

This can be done by pH paper or digital pH meter. The pH of the prepared herbal shampoo in distilled water (10% v/v) was evaluated by means of pH analyzer at room temperature .

3) Surface Tension Measurement:

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

4) Testing Of Wetting:

Wetting time was calculated by noting the time required by the canvas paper to sink completely [3]. A canvas paper weighing 0.44 g was cut into a disc of diameter measuring 1-inch. Over the shampoo (1% v/v) surface, the canvas paper disc was kept and the time taken for the paper to sink was measured using the stopwatch.

5) Foam Ability Test:

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

6) Dirt Dispersion Test:

To 10 ml of refined water two drops of cleanser were included and taken in a wide-mouthed test tube. To the formulated shampoo, added one drop of Indian ink and shaken for 10 min after closing the test tube with a stopper. The volume of ink in the froth was measured and the result was graded in terms of none, slight, medium, or heavy.

7) Conditioning Performance Evaluation:

An artificial hair tress of Indian women was received from a salon and divided into two swatches of length 10 cm approximately, weighing 5 g. The control swatch was the one without washing and the test swatch using the formulated shampoo was washed with. Each tress was added for 2 min to the combination of shampoo in water in the proportion 10:15 taken in a conical flask and washed using 50 ml of distilled water. Each tress was air dried at room temperature and the procedure was repeated for maximum of 10 times. The conditioning effect of the prepared shampoo in terms of softness and smoothness was determined using a blind touch test using volunteers of student 20 numbers selected randomly . The conditioning performance of the shampoo was rated in terms of Score 1–4 (4 – excellent, 3 -Good, 2 – satisfactory, and 1 – poor) by asking all the selected students to touch the tress washed with prepared shampoo.

Physicochemical Characterization of Herbal Shampoo:

Test	Observation
Color	Brown
Transference	Clear
Odor	Good
pH of 10% solution	6
Solid Content (%)	22.24%
Foam Ability (ml)	26
Foam Type	Dense ,small
Surface Tension (dyne/cm)	37.16
Wetting Time (sec)	130 sec

CONCLUSION:

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. Formulator's must play an active role in educating the consumers about the potential harmful effects of synthetic detergent in shampoos. There is a strong need to change the consumer perceptions of a good shampoo and the onus lies with the formulation.

REFERENCE:

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 antidandruff 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 .