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Assessing the Benefits and Effectiveness of Herbal Shampoo for Hair and Scalp Care

Ponnarasan Krishnan

YSPMS Yashoda Collage of Pharmacy Wadhe, Satara, MS, India

Abstract: ***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, its 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. 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 pollution. Herbal Shampoo is a cosmetic preparation which uses herbs and it is meant for washing of hair and scalp just like a regular shampoo.***

Keywords: Repair damage hair, moisturization & instant hydration

1. Introduction

Hairs are the integral part of human beauty. People are using herbs for cleaning, beautifying and managing hair since the ancient times. These reasons attracted community towards the herbal products, which are less expensive and have negligible side effects. It does not only have hair cleansing purpose but also imparts gloss to hair and used to maintain their manageability and oiliness free.

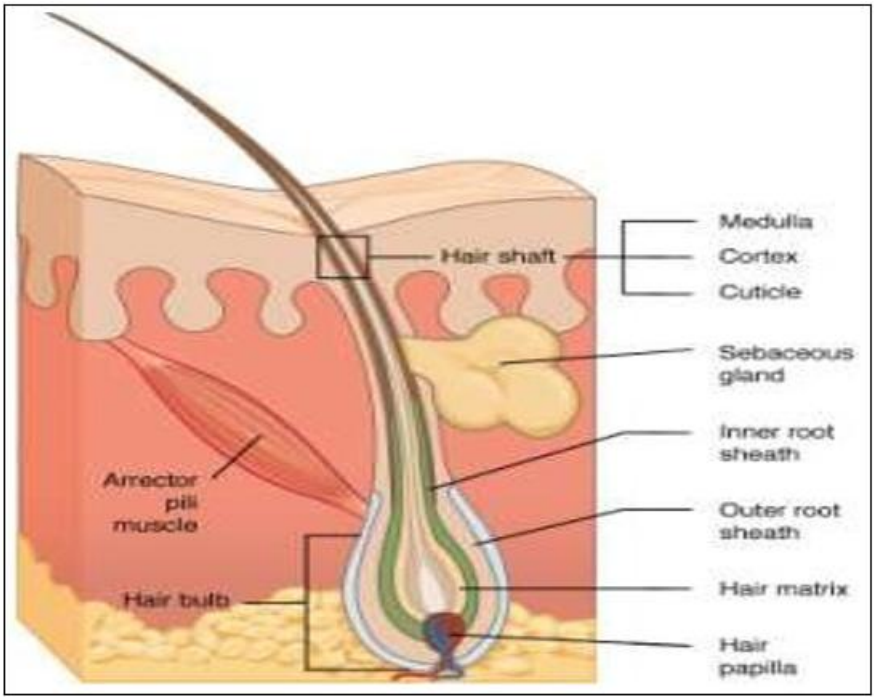

Figure 1

Structure of Hair

Herbal shampoo:
Herbal shampoo is a cosmetic preparation which uses herbs and it is meant for washing of hair and scalp just like regular shampoo.

Ideal Properties of Herbal Shampoo:
1) It should effectively and completely remove dust or soil, excessive sebum or other fatty substances and loose corneal cells from the hair.
2) It should produce a good amount of foam to satisfy the psychological requirements of user.
3) It should be easily removed on rinsing with water.
4) It should leave the hair non-dry, soft, lustrous with good manage ability and minimum fly away.
5) It should impart a pleasant fragrance to the hair.
6) It should not cause any side-effects / irritation to skin or eye.

Plant description and chemical constituents

1) Amla:

Figure 2 (Amla)

Family: Euphorbiaceae.
Binomial name: Phyllanthus emblica
Constituents: Tannis, Alkaloids, Phenolic compound, vitamin.

2) Aloe Vera:

Figure 3: Aloe Vera

Family: Asphodelaceeae
Species: Barbadensis mill
Constituents: Aloe - emodin, barbaloin, isobarbaloin, B - barbaloin, resins, Aloetic acid, homonataloin, aloes one chrysophanic acid, chrysamminic acid, galactouronic acid.

3) Neem:

Figure 4: Neem

Family: Meliaceae
Species: Azadirecta Indica
Constituents: Diterpenes (sugiol, nimboil) Triterpenes: - B - sitosterol, stigma sterol Limonoids: - Meliantriol, Nimbidinine, Nickelodeon, azadirachtin.

4) Reetha:

Figure 5: Reetha

Family: Sapindaceae
Common name: Washnut, Soapnut, Soapberry
Constituents: saponins (10% - 11.5%), Sugar (10%) & mucilage, Triterpenes, Six sapindoside (sapindoside A, B, C, D) & mukorossi saponins (E1 &Y1)

5) Shikakai:

Figure 6: Shikakai

Family: Leguminoceae
Common name: Soap - pod
Constituents: Hexacosanol, spinasterrone, oxalic acid, tartaric acid, citric acid, succinic acid, ascorbic acid, nicotine

6) Orange peel:

Figure 7: Orange peel

Family: Rutaceae
Common name: Orange peel
Constituents: Carveol, Carvone, Menthol, Perillyl alcohol and Perillaldehyde.

2. Material and Method

2.1 Preparation Extract:

1) 50gm pieces of fresh leaves of Amla powder were boiled in 75ml of water and filtered.
2) 50gm powder of dried fruits of Acacia concinna (Shikakai) was boiled in 75ml of water and filtered.
3) 25 ml of juice of Aloe barbadensis (Aloe) was removed from leaves.
4) 25gm fresh pieces of leaves of Azadirachta indica (Neem) were boiled in 25ml of water and filtered.
5) 50 gm powder of dried fruits of Spindus mokorossi (Reetha) was boiled in 75 ml of water and filtered.

2.2 Preparation of herbal shampoo:

1) Firstly a base was prepared by using 5gm sodium carboxy methyl cellulose in 40ml water
2) To 250ml beaker 50 ml of Reetha extract and 50ml of Shikakai extract was mixed and stirred well.
3) Then 50 ml of Amla Powder extract was added.
4) 10 ml of Neem extract and 25ml of Aloevera extract was added.
5) 5ml of propyl paraben was added as a preservative.
6) Above extract was stirred for 15 min.
7) 10 ml of orange peel extract was added as a perfuming agent and stirred for 5 min.
8) The shampoo was prepared and placed into a 250ml plastic container (bottle).

2.3 Formulation Table:

Table 1

S. No.	Name of ingredients	Quantity	Role of ingredients
1	Amla Powder extract	50ml	Darken Hair
2	Shikakai extract	50ml	Conditioning agent
3	Reetha extract	50ml	Antibacterial
4	Neem extract	10 ml	Foaming agent
5	Aloe vera juice	10 ml	Foaming agent
6	Propyl paraben	5 ml	Perfuming agent
7	Sodium carboxymethyl cellulose	50ml	Preservative
8	Orange peel oil	10 ml	Thickening agent
9	Water	15 ml	Vehicle
Total		250 ml	

3. Results Discussion

1) **Physical Appearance:** The formulation prepared were evaluated in terms of their color, odor, and appearance.
2) **Dirt dispersion:** Two drops of shampoo was added in a large test tube contain 10ml of distilled water.1ml of India ink was added; the test was stoppered and shaken as 10 times. The amount of ink in the foam was estimated as None, Light, Moderate or Heavy.

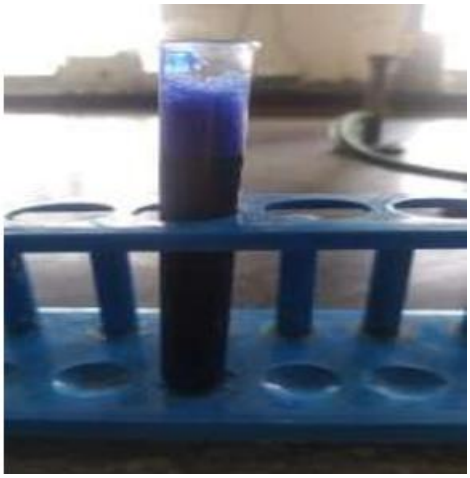

Figure 8: Dirt dispersion

3) **Foaming ability and foam stability:** Foaming ability was determined by using cylinder shake method. Briefly, 10 ml of the herbal shampoo solution was placed into a graduated cylinder. It was covered with one hand & shaken 10 times. The total volume of foam content after 1min of shaking was recorded. Foam stability was evaluated by recording the foam volume after 1 min & 4min of shake test.

Figure 9: Foaming ability and foam stability

4) **pH:** Connect the combination pH electrode to the input socket, wash it with water and switch ON the instrument. Dip the electrode in 7 pH buffer solution. Set the temperature control to the buffer solution. Set the function selector switch to pH position and adjust with "CALIBRATE" control till the digital display shows the precise pH value of buffer solution. Now move the function selector switch to "STAND BY". Remove the electrode from the buffer solution and wash it with distilled or ionized water. Dip the combination electrode in to another buffer solution. Set temperature control to the temperature of the selected buffer solution. Set the function selector switch to pH position. Adjust the slope control at the front panel until the display show the pH value of the select buffer solution. Check that the correct

readings are obtained with both buffer sol

Figure 10: pH

5) **Viscosity:** Thoroughly clean the Ostwald viscometer with warm chromic acid and if necessary use an organic solvent such as acetone. Mount viscometer in vertical position on a suitable stand. Fill water in dry viscometer up to mark G Count time required, in second for water to flow from mark A to mark B. Repeat step 3 at least 3 times to obtained accurate reading. Rinse viscometer with test liquid and then fill it up to mark A, find out the time required for liquid to flow to mark B. Determination of densities of liquid as mentioned in density determination experiment.

Formula

$$\text{Viscosity} = \frac{\text{Density of test liquid time required for test liquid}}{\text{Density of water time required to flow water.}}$$

Figure 11: Viscosity

6) **Density:** Clean thoroughly the specific gravity bottle with chromic acid or nitric acid. Rinse the bottle at least two to three times with distilled water. If required, rinse the bottle with an organic solvent like acetone and dry. Take the weight of empty dry bottle with capillary tube stopper (w1). Fill the bottle with unknown liquid and place the stopper, wipe out excess liquid from outside the tube using tissue paper. Weight bottle with unknown liquid on analytical balance (w2). Calculate weight in grams of unknown liquid (w3) = (w2 – w1).

Figure 12: Density

7) **% Solid content:** The percentage of solid substance was determined by weighing about 4 g of shampoo in a dry, clean, and evaporating dish. To confirm the items, particular tests were performed for surface tension, foam volume, foam stability, and wetting time.

Figure 13: % Solid content

4. Discussion

The herbal shampoos are the preparations which are used for the washing and cleaning of hairs and to provide nourishment. The herbal shampoos are widely used due to their no or less side effects as compared to conventional shampoos, because it contains pure natural or herbal ingredients rather than synthetic chemicals.

5. Conclusion

The herbal liquid shampoo was formulated by using the various herbal ingredients. From the overall results, we can conclude that the herbal shampoo formulation was more stable effective and safe for the basis of their evaluation parameters.

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