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## A Review on Preparation and Evaluation of Herbal Shampoo and Its Applications

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### ABSTRACT

The Herbal shampoo is a cosmetic preparation that uses herbs from plants and it is meant for washing hair and scalp just like a regular shampoo. It serves as an alternative to commercially available synthetic shampoo. Hair is an integral part of human beauty. In humans, it serves as lot of purposes like protection against external factors, sebum, apocrine sweat and pheromonas productions and thermoregulations. Hair care products are used for many purposes like cleaning, modifies hair texture, provides nourishment to hair and give a healthy look to hair. 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. 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. It 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. There is a few efforts are needed in manufacturing, their advantages in safety, eco-friendliness, and holistic hair care make them a preferred choice for consumers.

**Keywords:** Herbal shampoo, Non medicated shampoos, Ayurvedic herbs, Synthetic shampoo, Herbal cosmetics.

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#### 1. Introduction

From ancient time beyond memory, mankind have been borrowing abundantly from nature to care for their health, skin and hair, as natural ingredients that have preventive, protective and corrective action. The warehouse of cosmetics, nature provides such versatile natural ingredients that enhance beauty of the skin and hair. 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 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). Indian women use herbals such

as *shikkakai* and *reetha* that are natural cleansing agents without harmful effects. Nowadays natural sources remain attractive primarily when compared to the synthetic one, so herbal shampoos are popular with the consumer when compared to the synthetic one. A shampoo is a preparation of a surfactant in a suitable form- liquid, solid or powder- which when used under the specific conditions will remove surface grease, dirt and skin debris from the hair shaft without adversely affecting the user.<sup>1-6</sup>

A shampoo is a mixture of a surfactant (also known as a surface-active substance) in an appropriate form, such as a liquid, solid, or powder, that when used as directed will remove surface grime, filth, and debris from the hair shaft and scalp without having an unfavorable effect on the user.

In our daily lives, shampoos are likely the most frequently used cosmetic products for cleaning our hair and scalp. A shampoo is essentially a detergent solution with appropriate additives for additional benefits such as improved hair conditioning, lubrication, medication. There are many different types of shampoos available today, including synthetic, herbal, medicated, and non-medicated varieties, but consumers are becoming more and more interested in herbal shampoo because they think that because these products come from natural sources, they are risk-free and without side effects. Synthetic surfactants are included in synthetic shampoos mainly for their cleansing and foaming characteristics, but lengthy consumption of these surfactants can produce eye and scalp irritation, hair loss, and hair dryness. We have natural herbal shampoos as an alternative to synthetic shampoo.

However, creating cosmetic products with entirely natural ingredients is exceedingly challenging. Herbal products “Numerous medicinal plants with possible benefits on hair have been used for centuries in shampoo formulations all worldwide. These therapeutic herbs can be used as extracts, powders, crude forms, or derivatives.

It is challenging to create shampoo with only one natural ingredient that is safer and softer than synthetic shampoo. It must also include considerable foaming, detergency, solid content, similar to synthetic shampoo. As a result, we gave careful thought to developing a pure natural cleanser employing a time-tested method and commonly used plant material for washing hair.

For centuries, humans have turned to nature to improve health, skin, and hair. Natural ingredients, known for their preventive and protective properties, play a significant role in cosmetics. Hair is often an external reflection of internal health, making proper care essential. Shampooing is the most common hair treatment method. While traditional shampoos focus on cleansing, herbal shampoos offer additional benefits, such as nourishment and repair. Unlike synthetic shampoos that may dry or damage hair, herbal formulations gently cleanse while delivering nutrients for healthy, shiny hair. The rising demand for natural cosmetics

reflects a global preference for purity, safety, and long-term efficacy. Herbal shampoos incorporate extracts from plants with known therapeutic properties. These formulations aim to remove dirt and oil while maintaining the natural balance of the scalp and hair. This review discusses the objectives, advantages, disadvantages, ideal properties, classifications, formulations, evaluations, and future prospects of herbal shampoos<sup>7-10</sup>.

## 2. History of Herbal shampoo

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 Indian gooseberry (*amla*) 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*. 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*. It leaves the hair soft, shiny and manageable. Other products used for hair cleansing were *shikakai* (*Acacia concinna*), hibiscus flowers, *ritha* (*Sapindus mukorossi*) and *arappu* (*Albizia amara*). Guru Nanak, the founder and the first Guru of Sikhism, made references to soapberry tree and soap in the 16th century. 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. The “Original Herbal Essences” shampoo from 1971 was a bold blend of green herbaceous notes with a big white floral middle and a balsamic musky background.

### Advantages of Herbal Shampoos

- Natural Ingredients: Made from pure, organic sources.
- Reduced Side Effects: Gentle on the scalp and skin.
- Eco-Friendly: Biodegradable and sustainably produced.
- Cost-Effective: Long-term hair health reduces additional treatment costs.
- No Artificial Additives: Free from synthetic colors, fragrances, and preservatives.

### Disadvantages of Herbal Shampoos

- Odor Issues: Natural ingredients may have distinct smells.
- Slower Results: Requires consistent use for noticeable effects.
- Manufacturing Challenges: More complex and time-consuming.
- Variability: Seasonal changes can affect ingredient quality.
- Preservation Needs: May require natural preservatives to ensure stability.
- Potential Sensitivities: Certain herbs can cause reactions in sensitive individuals.

### Ideal Properties

- Leaves hair smooth, shiny, and manageable<sup>11-19</sup>.

- Produces sufficient foam without harsh chemicals.
- Gentle on the scalp, skin, and eyes.
- Effectively removes dirt and excess oil.
- Rinses out easily with water.

#### **Composition of shampoo**

- Principal surfactant
- Secondary surfactant
- Antidandruff agents
- Conditioning agents
- Pearlescent agents
- Sequestrants
- Thickening agents
- Colours, perfumes and preservatives<sup>20-24</sup>.

#### **Functions of herbal shampoo include**

- Effective removal of dirt or soil.
- Efficient hair washing.
- Generation of a sufficient amount of froth.
- Easy rinsing with water.
- Imparting a pleasant scent to the hair.
- Promoting hair growth.
- Maintenance of hair color.
- Medicinal properties.
- Enhancing manageability and reducing flyaways.
- Providing a pleasant fragrance to the hair.
- Non-irritating and free from side-effects on the skin or eyes.
- Maintaining the hands smooth and moisturized.

#### **Preparation of Herbal shampoo<sup>25-29</sup>**

##### **Soxhlet Extraction**

Soxhlet extraction is a laboratory technique used to extract a target component from a solid sample using a solvent. Time Required 4-6 hour for Reetha Extraction

##### **Distillation Extraction**

Distillation is a separation technique that relies on differences in boiling points to separate components of a mixture, while extraction utilizes solubility differences to achieve separation.

##### **Maceration Extraction**

Maceration extraction is a simple and cost-effective method of extracting active compounds from plant material by soaking it in a solvent at room temperature for an extended period.

#### **Evaluation of herbal shampoo<sup>30</sup>**

- Physical appearance/visual inspection
- The formulations prepared were evaluated in terms of their clarity, foam producing ability and fluidity.
- Determination of pH
- Determine percent of solids contents
- Wetting time
- Rheological evaluations
- Dirt dispersion
- Cleaning action
- Surface tension measurement
- Detergency ability
- Foaming ability and foam stability
- Skin sensitization test
- Eye irritation test

- Surface characterization
- Stability studies
- Evaluation of herbal powder shampoo
- Solubility
- Loss on drying
- Swelling index
- Angle of repose

### **3. Essential Oils for Hair Care**

#### **Normal Hair:**

Carrot seed, Cedarwood, Chamomile, Clary Sage, Cypress, Geranium, Juniper, Lavender, Lemon, Orange, Rosemary, Sage, Sandalwood, Thyme, Ylang Ylang,

#### **Scalp Conditions:**

Cedarwood, Chamomile, Clary Sage, Cypress, Lavender, Lemon, Majoram, Myrrh, Orange, Patchouli, Rose, Rosemary, Sage, Thyme, Tea Tree, Ylang Ylang.

**General Health:** Basil, Cypress, Lavender, Lemon, Peppermint, Rosemary, Sage, Thyme, Ylang Ylang.

**Dry Hair:** Carrot seed, Cedarwood, Chamomile, Clary Sage, Geranium, Jasmine, Lavender, Orange, Rosemary, Sandalwood, Ylang Ylang

#### **Oily Hair:**

Basil, Bergamot, Cedarwood, Chamomile, Clary Sage, Cypress, Eucalyptus, Geranium, Juniper, Lavender, Lemon, Lemongrass, Orange, Peppermint, Rosemary, Sage, Tea Tree, Thyme, Ylang Ylang

#### **Herbs for Hair Care<sup>31-33</sup>:**

**Normal Hair:** Basil, Calendula, Chamomile, Horsetail, Lavender, Linden Flowers, Nettle, Parsley Leaf, Rosemary, Sage, Watercress.

**Dark Highlights:** Black Tea, Black Walnut Hulls (crushed or chopped), Comfrey root, Nettle, Rosemary, Sage.

**Red Highlights:** Calendula, Henna, Hibiscus flowers, Red Clover flowers, Rose hips, Red Rose petals.

**Oily Hair and Scalp:** Bay leaf, Burdock root, Calendula, Chamomile, Horsetail, Lemon Balm, Lavender, Lemon peel, Lemongrass, Nettle, Peppermint, Rosemary, Thyme, Witch Hazel Bark.

#### **Scalp Conditions:**

Burdock root, Valndual, Chamomile, Comfrey leaf, Eucalyptus, Horsetail, Lavender, Marshmallow root, Nettle, Oregano, Peppermint, Rosemary, Sage, Thyme.

#### **Dry hair and Scalp:**

Burdock root, Calendula, Chamomile, Comfrey, Elder Flowers, Horsetail, Lavender, Marshmallow Root, Nettle, Parsley Leaf, Sage.

**General Health:** Basil, Nettle, Rosemary, Sage

#### **Golden Highlights:**

Calendula, Chamomile, Lemon, Sunflower petals.

### **4. Conclusion**

The study had shown that the external support given by the physician and family members had a greater influence on cancer patients to adapt well to the situation of having had a life-threatening disease and to undergo their treatment more positively. Our study revealed that the cancer cases are high and it showed increasing trend which suggests that the population based cancer registries to be made at all levels of health care to identify the time trends so that prevention

measures can be implemented at the community level. Epidemiological information on cancer including the pattern and socio-demographic factors is fundamental in determining the priorities for cancer control in the given population group. The cancer registries in India take into account only representative sample of the whole country. This study shows that there is marked difference in the cancer pattern of our hospital in comparison with the national statistics. Hence factors leading to such high incidence should be analyzed and steps towards prevention of this type of cancer should be taken to reduce the morbidity and mortality of cancer. Further, more such research can be conducted all over the country to find the cancer pattern of different areas and thus pave the way for effective preventive measures

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