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Review Article

A Brief Review on Preparation and Evaluation Herbal Shampoo

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ABSTRACT

The abstract of a study on the photochemical and pharmacogenetic properties of hibiscus would summarize the research conducted on the plant and its active chemical compounds, as well as the plant's traditional medicinal uses. The study would start by introducing the plant species hibiscus and its historical use in traditional medicine. It would then go on to describe the methods used to extract and identify the phytochemical compounds found in the plant, such as alkaloids, flavonoids, tannins, and terpenoids. The pharmacogenetic properties of hibiscus, such as its morphology, anatomy, and microscopy, would also be studied and described in detail. This information would be used to establish the plant's authenticity and quality control. Finally, the study would discuss the biological activities and potential therapeutic uses of hibiscus and its phytochemical compounds. This could include anti-inflammatory, antioxidant, antibacterial, and anti-tumor effects. In conclusion, the abstract of this study would provide a comprehensive overview of the phytochemical and pharmacognostic properties of hibiscus and its potential as a source of natural remedies.

INTRODUCTION

Shampoos are probably the most widely used cosmetic products for cleansing hairs and scalp in our daily life (Ishi, 1997). 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 (Manikar and Jolly, 2001). 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 (Potluri et al., 2013). Herbal formulations are considered as alternative to synthetic shampoo but formulating cosmetics using completely natural raw material is a difficult task (Shinde et al., 2013).

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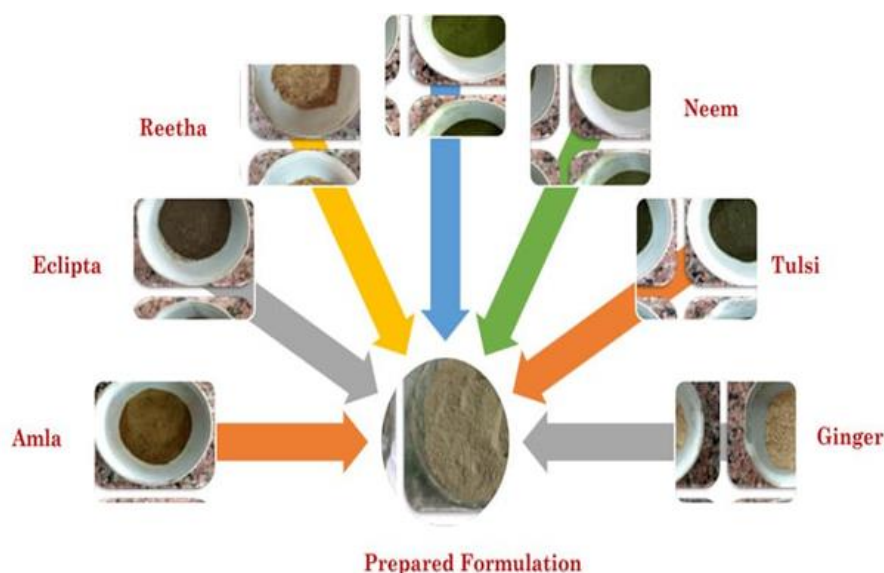
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There are large numbers of medicinal plants which are reported to have beneficial effects on hair and are commonly used in formulation of shampoo (Firthouse, 2009). These plant products may be used in their powdered form, crude form, purified extracts, or derivative form (Pooja et al., 2011). 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 India and gulf region especially in Oman.

The pericarp of *Spindus mukorossi*, commonly known as Soapnut or reetha, fruits of *Phyllanthus emblica* commonly known as Amla, and dried pods of *Acacia concinna* (Sheekakai) have traditionally been used in Indian folklore system for centuries for washing hair (Kapoor, 2005). Reetha and Sheekakai produce rich lather when

shaken with water due to their high content of saponins. They are also known to produce beneficial effects on skin and other organ systems (Khushboo et al., 2010). Amla fruit is rich in vitamin C and is employed in hair preparations as antidandruff agent, hair growth promoter and to strengthen hairs (Srivasuki, 2012). The *Ziziphus spina-christi* tree, known as Sidr in Arabic, is indigenous to the Middle East including Oman, and its leaves are traditionally used by women to wash, darken and lengthen hairs (Ali and Kadhim, 2011). It is reported to contain four saponin glycosides that help in removing excess sebum without causing adverse reactions (Mahran et al., 1996). Saponins also exhibit antibacterial and antifungal activities that make them important ingredients of cosmetic applications (Chen et al., 2010). This study was designed to formulate a herbal shampoo and to evaluate and compare its physicochemical properties with the marketed synthetic and herbal shampoo in search of a safe and effective cosmetic product.



ADVANTAGES

Natural and Gentle: Herbal shampoos are free from harsh chemicals, making them suitable for sensitive scalps and hair. Nourishing and

Protective: Herbal ingredients can provide essential nutrients and protection to the hair and scalp. Customizable: Herbal shampoos can be formulated to address specific hair concerns, such as dandruff, hair loss, or dryness. Environmentally Friendly: Herbal shampoos often use sustainable and eco-friendly ingredients

DISADVANTAGES

Potential Damage from Using a Dishwasher. Using a dishwasher to clean shampoo bottles or utensils can potentially damage the herbal shampoo or its ingredients due to

- High temperatures.
- Harsh detergents.
- Mechanical stress.

It's generally recommended to hand-wash utensils and bottles used for herbal shampoo preparation to preserve the integrity of the ingredients.

Ideal Properties

- It should have optimum viscosity such that it facilitates ease during application
- It should have good spreading properties.
- It should produce sufficient lather after application.
- It should be able to remove waste material such as debris, soil, sebum, dead cells, salts (due to sweat) etc., from the scalp.
- It should provide lustre to the hair.
- It should produce good odour both before and after shampooing.

- It should not produce any kind of irritation or itching to the scalp.
- It should not support any microbial growth.
- It should be stable and have a half life of about 2 to 3 years
- It should be economical.

Benefits of Herbal Shampoo

- Gentle and non-irritating
- 2. Promotes healthy hair growth
- 3. Soothes scalp conditions (dandruff, itchiness)
- 4. Enhances shine and manageability
- 5. Environmentally friendly

Popular Herbs Used

- Aloe vera (soothing, moisturizing)
- Tea tree oil (antifungal, antibacterial)
- Rosemary (stimulates hair growth)
- Lavender (calming, fragrant)
- Neem (antifungal, anti-inflammatory)

Types of Herbal Shampoo

- Ayurvedic herbal shampoo
- Organic herbal shampoo
- Medicinal herbal shampoo (for specific scalp conditions)

Ayurvedic herbal shampoo



Ayurvedic herbal shampoo is a type of hair care product that originated from the ancient Indian system of medicine, Ayurveda. This system emphasizes the use of natural herbs and botanicals to promote overall health and well-being, including hair and scalp health.

Herbs Used in Ayurvedic Herbal Shampoo

- Amla (*Emblica officinalis*): Rich in antioxidants, amla promotes healthy hair growth and strengthens hair roots.
- Brahmi (*Bacopa monnieri*): Enhances memory and cognitive function, brahmi also promotes healthy hair growth and reduces stress.
- Bhringaraj (*Eclipta alba*): Stimulates hair growth, strengthens hair roots, and improves hair texture.

- Neem (*Azadirachta indica*): Soothes and calms scalp conditions like dandruff, itchiness, and redness.
- Triphala: A blend of three herbs (amla, haritaki, and bibhitaki), triphala promotes healthy hair growth, reduces dandruff, and improves scalp health.

Types of Ayurvedic Herbal Shampoo

- Vata-Pacifying Shampoo: For dry, brittle, or damaged hair, this shampoo helps to nourish and moisturize hair.
- Pitta-Pacifying Shampoo: For oily or greasy hair, this shampoo helps to balance oil production and reduce dandruff.
- Kapha-Pacifying Shampoo: For dull, lifeless, or limp hair, this shampoo helps to stimulate hair growth and improve hair texture.



Organic Herbal Shampoo

Organic herbal shampoo is a type of hair care product that combines the benefits of organic ingredients with the therapeutic properties of herbs. This type of shampoo is designed to promote healthy hair growth, soothe scalp conditions, and enhance shine and manageability.

Herbs Used in Organic Herbal Shampoo

- Rosemary (*Rosmarinus officinalis*): Stimulates hair growth.
- Lavender (*Lavandula angustifolia*): Soothes and calms scalp conditions, promotes relaxation, and improves sleep.
- Chamomile (*Matricaria chamomilla*): Soothes and calms scalp conditions, reduces inflammation, and promotes relaxation.



- Tea Tree (*Melaleuca alternifolia*): Soothes and calms scalp conditions, reduces dandruff, and promotes healthy hair growth.
- Neem (*Azadirachta indica*): Soothes and calms scalp conditions, reduces dandruff, and promotes healthy hair growth.

Types of Organic Herbal Shampoo

- Dry Hair Shampoo: Formulated with moisturizing herbs like coconut, olive, and jojoba to nourish and hydrate dry hair.
- Oily Hair Shampoo: Formulated with herbs like tea tree, neem, and rosemary to balance oil production and reduce greasiness.
- Sensitive Scalp Shampoo: Formulated with soothing herbs like chamomile, lavender, and calendula to calm and soothe sensitive scalps.



Medicinal herbal shampoo (for specific scalp conditions)

A medicinal herbal shampoo for specific scalp conditions is a type of shampoo that utilizes the therapeutic properties of herbs to prevent, alleviate, or treat specific scalp conditions, such as dandruff, itchiness, redness, irritation, or infection

➤ Herbal shampoo for dandruff

Contains herbs like neem and tea tree oil to help control dandruff.

➤ Herbal shampoo for itchy scalp

Soothing and calming, featuring herbs like aloe vera and chamomile to reduce itchiness and irritation.

➤ Herbal shampoo for sensitive scalp:

Gentle and fragrance-free, designed for sensitive scalps.

Herbal shampoo for dandruff

A shampoo specifically formulated to help control and manage dandruff, a common scalp condition characterized by flakes of dead skin

Key Benefits

- Helps to reduce flaking and scaling
- Soothes and calms the scalp
- Anti-fungal and anti-inflammatory properties
- Helps to maintain a healthy scalp environment

S. no	Ingredients	Quantity for 100ml
1	Neem extract	5g
2	Tea tree oil	3g
3	Rosemary essential oil	2g
4	Lavender essential oil	2g
5	Coconut-derived cleansing agents	15g
6	Glycerin	5g
7	pH adjusters	Q.S
8	Water	Up to 100ml



Herbal Shampoo for Itchy Scalp

A shampoo designed to provide relief from itchiness and irritation on the scalp, often caused by dryness, allergies, or sensitivities.

Key Benefits

- Soothes and calms the scalp
- Reduces itchiness and irritation
- Hydrates and moisturizes the scalp
- Helps to maintain a healthy scalp environment

S. no	Ingredients	Quantity for 100ml
1	Aloe vera gel	10g
2	Chamomile extract	5g
3	Calendula extract	3g
4	Peppermint essential oil	2g
5	Coconut-derived cleansing agent	15g
6	Glycerin	5g
7	pH adjusters	Q.S
8	Water	Up to 100ml



1. Herbal Shampoo for Sensitive Scalp:

A gentle and fragrance-free shampoo formulated for sensitive scalps, which can be easily irritated by harsh chemicals or fragrances.

Key Benefits

- Gentle and non-irritating
- Fragrance-free and hypoallergenic
- Soothes and calms the scalp
- Helps to maintain a healthy scalp environment

S. no	Ingredients	Quantity for 100ml
1	Aloe vera gel	10g
2	Chamomile extract	5g
3	Green tea extract	3g
4	Glycerin	5g
5	Coconut-derived cleansing agents	15g
6	pH adjusters	Q.S
7	Water	Up to 100ml

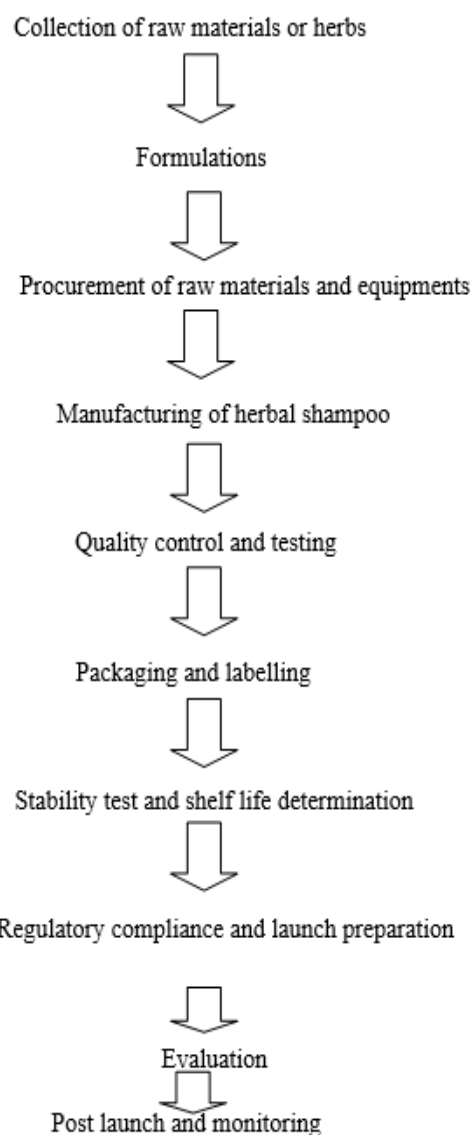
Aim

To develop and evaluate the efficacy and safety of a herbal shampoo that utilizes natural herbs and botanicals to promote healthy hair growth, soothe scalp conditions, and enhance shine and manageability.

Objectives

- To formulate a herbal shampoo using natural herbs and botanicals: To develop a shampoo that combines the therapeutic properties of herbs like aloe vera, neem, and rosemary to promote healthy hair growth and soothe scalp conditions.
- To evaluate the efficacy of the herbal shampoo: To assess the effectiveness of the shampoo in promoting healthy hair growth, reducing dandruff and itchiness, and enhancing shine and manageability.
- To evaluate the safety of the herbal shampoo: To assess the safety of the shampoo by evaluating its potential for skin irritation, allergic reactions, and other adverse effects.
- To compare the efficacy and safety of the herbal shampoo with a conventional shampoo: To compare the effectiveness and safety of the herbal shampoo with a conventional shampoo that contains synthetic ingredients.
- To evaluate the stability and shelf-life of the herbal shampoo: To assess the stability and shelf-life of the shampoo by evaluating its physical and chemical properties over time.

Plan of Work



Herbs

- Neem: Controls fungal and bacterial growth, reduces inflammation and itchiness.
- Tea tree: Controls fungal and bacterial growth, reduces inflammation and itchiness.
- Rosemary: Stimulates hair growth, improves circulation, and reduces dandruff.
- Sage: Stimulates hair growth, improves circulation, and reduces dandruff.

- **Thyme:** Controls fungal and bacterial growth, reduces inflammation and itchiness.

Natural preservative, controls fungal and bacterial growth.

Essential Oils

- **Tea tree essential oil:** Controls fungal and bacterial growth, reduces inflammation and itchiness.
- **Rosemary essential oil:** Stimulates hair growth, improves circulation, and reduces dandruff.
- **Lavender essential oil:** Soothes and calms the scalp, reduces inflammation and itchiness.
- **Eucalyptus essential oil:** Controls fungal and bacterial growth, reduces inflammation and itchiness.

Rosemary extract

Natural preservative, controls fungal and bacterial growth.

Formulations

S No:	Ingredients	Quantity Of 100g
1	Neem	10g
2	Tulsi	5g
3	Hibiscus	5g
4	Aloe Vera	6.5g
5	Shikakai	2.5
6	Reetha	2.5g
7	Amla	2.5g

Pharmacognosy

Pharmacognosy is defined as "The study of the physical, chemical, biochemical and gical properties of drugs, drug substances or potential drugs or drug substances of natural im as well as the search for new drugs from natural sources",

Medicinal Plants

Medicinal plants are those plants, rich in secondary metabolites and are potential source of drugs-These secondary metabolites include alkaloids, glycosides, coumarin, flavonoids and steroids.

Importance Of Medicinal Plants

The medicinal plants find application in pharmaceutical, cosmetics, agricultural and food industry. The use of the medicinal herbs for curing diseases has been documented in history of all civilizations. The research concluded that plant contain active principles which are responsible for curative action of herbs.

Ingredients

Oils

Coconut oil: Moisturizes and nourishes the hair, promotes healthy scalp and hair growth.

Olive oil: Moisturizes and nourishes the hair, promotes healthy scalp and hair growth.

Jojoba oil: Moisturizes and nourishes the hair, promotes healthy scalp and hair growth.

Other Raw Materials:

Zinc pyrithione: Antifungal and antibacterial properties, reduces dandruff and itchiness.

Ketoconazole: Antifungal properties, reduces dandruff and itchiness.

Glycerin: Moisturizes and nourishes the hair, promotes healthy scalp and hair growth.

Natural Preservatives

Grapefruit seed extract



- ❖ Neem
- ❖ Tulsi
- ❖ Hibiscus
- ❖ Aloe Vera
- ❖ Shikakai
- ❖ Reetha
- ❖ Amla

Neem

Synonym

Hin-Nira, Nismb, Mal-Veppa, Mar-Limba,

Biological Source

Neem consists of the fresh or dried leaves and seed oil of *Azadirachta Indica* J. Juss (*Melia Indica* or *M. Azadirachta* Linn).

Family

Meliaceae



Use

All part of neem tree used as anthelmintic, antifungal, antidiabetic, antibacterial, antiviral, contraceptive and sedative.

- Oil of neem used in soap, shampoo, balms, cream as well as toothpaste.

- Neem gum is used as a bulking agent and for the preparation of special purpose food (for diabetic).

- A decoction prepared from Neem roots is ingested to relieve fever in traditional Indian medicine.

Tulsi

Synonyms:

Sacred basil, Holy basil.

Biological source:

Tulsi consists of fresh and dried leaves of *ocimum sanctum* linn. (India)

Family:

Labiatae.



Use:

Respiratory problems: Tulsi is used to treat respiratory problems, including bronchitis, asthma, and cough.

Skin problems: Tulsi is used to treat skin problems, including acne, eczema, and dermatitis

Hibiscus

Synonyms:



Hibiscus sabdariffa

Biological sources:

Hibiscus sabdariffa is an annual herbaceous plant that belongs to the family Malvaceae. It is native to tropical Africa and is widely cultivated in tropical and subtropical regions.

Family:

Malvaceae (India)



Use:

- Food and Beverage: Hibiscus is used to make tea, jam, jelly, and other food products.
- Cosmetic: Hibiscus is used in skincare products due to its antioxidant and anti-inflammatory properties.
- Medicinal: Hibiscus is used to treat various health conditions, including high blood pressure and digestive problems.
- Dye: Hibiscus is used as a natural dye for fabrics and other materials.

Shikakai

Synonym:

Soap-Pod, Acacia Concinna.

Biological Source:

It Is the dried gummy exudation of stem and branches of Acacia Arabica.

Family:

Leguminosae



Uses:

- It Is Traditionally Used In A Shampoo Preparation For Hair Growth,
- Soothes Scalp,
- Fights against dandruff Shikakai Also Has Antifungal Properties. That help cure dandruff
- Nourishes hair follicles.

Amla

Synonym:

Emblica, Indian Goose Berry, Amalki.

Biological Source:

It consists of dried as well as fresh fruits of the plant Emblica Officinalis Linn.

Family:

Euphorbiaceae





Use

- It provides natural protein.
- It is used as an acrid, diuretics, refrigerant and laxative.
- They are also administered in jaundice, dyspnea and anemia along with iron compound.
- Fruits are also used in preparation of inks, hair oil and shampoo.
- Good tonic and used in scurvy.

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