



FORMULATION AND EVALUATION OF HERBAL SHAMPOO

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ABSTRACT

The main object of this present study is to prepare and evaluate an herbal Shampoo and determine physiochemical function that emphasizes on safety, Efficacy and quality of the product Herbal Shampoo is the natural haircare product Which is use to remove grease, dirt, dandruff and promote hair growth, Strenthness and darkness of the hair. It is also supply softness, smoothness, and Shines for the hair. Various drugs are usedfor the pre mixture of cosmetics Shampoo. Such drugs shows different side effects such as hair loss, high scaling, Scratching, discomfort, nausea and headache. Therefore an experiment is made to prepare herbal shampoo that is free from side effects. (1) The aim of the present study is to Formulate and evaluate herbal Anti dandruff Shampoo containing natural ingredients with an Emphasis on safety and efficacy.(2)

KEYWORDS : Cosmetic, Herbal shampoo, aloe Vera, dandruff, Hibiscus rosa-sinesis, Acasia concinna, sapindus mukorossi, Azadirachta indica and Glycerrhiza glabra.

INTRODUCTION

Herbal Shampoo are probably the most widely used cosmetic products for cleansing Hairs and scalp in 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, , environmental pollutions etc. shampoo is a type of cosmetic mixture that uses herbs from plants as an alternative to the synthetic Shampoo available in the market. The herbal shampoo is important, as people today prefer herbal products than chemical ones for they proved to enhance.(1)Shampoos are most probably used as cosmetics. Shampoos are most likely utilized as beautifying agents and are a viscous solution of detergents contaning suitable additives preservatives and active ingredients(3). It is a harmless, chronic condition that occurs when scalp becomes dry or greasy and produces white flakes of dead skin that appear in hair or on shoulders. People most often think of it as anything that produces a flaky scalp. (7)A good shampoo should almost Immed"atel' form abundant foam irrespective of the type of water used Or the nature of soil or fat to be removed from hair. Concept foam formation is not released to the Cleansing effect, but people psychologically always prefer a high foam product. Some good shampoos Are found to have side effects like drying effect on the hair. This leaves the hair too dry to handle or Comb. hence proper conditioning of the hair is also an important consideration, some shampoos cause Irritation to the eye and a lasting corneal cloud. These should be (17)





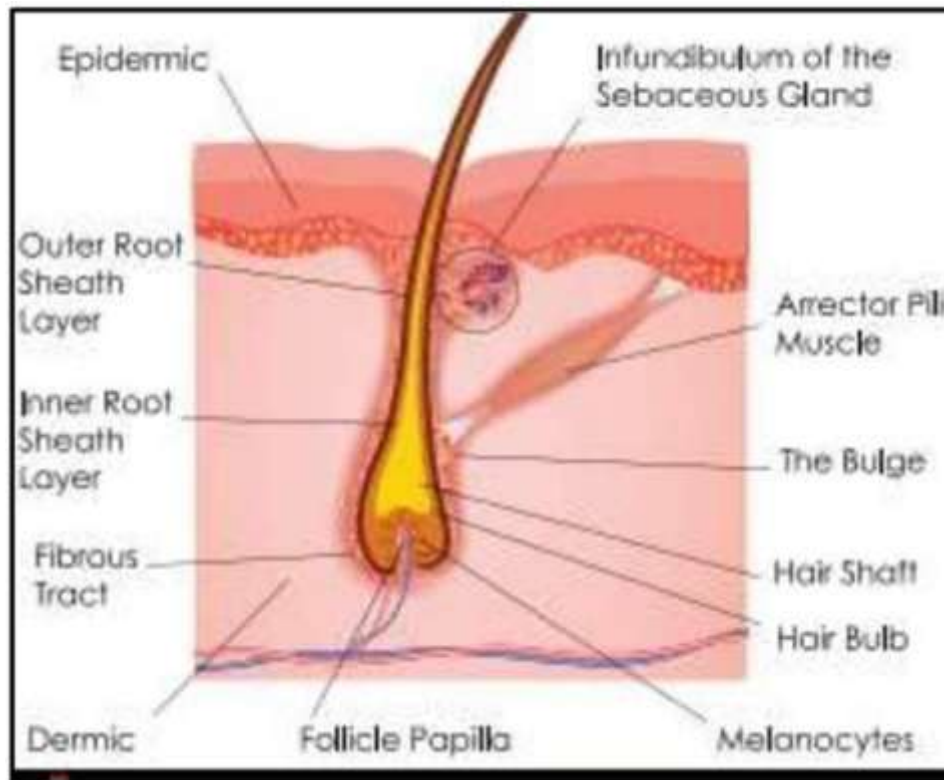
History- Indian subcontinent In the Indian subcontinent, a variation of herbs and their extracts have been used as shampoos since ancient times. A very effective early Shampoo was made by boiling Sapindus with dried Indian gooseberry (amla) and a selection of other herbs, using the strained extract. 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. (1)

Anatomy Of Hair

- **Dermal papillae:** The dermal papilla is responsible for regulating the hair cycle and hair growth, and is also comprised of androgen receptors that are sensitive to the presence of DHT
- **Matrix:** The matrix surrounds the dermal papillae and contains all the active ingredients for hair growth and for the development of the different parts of the hair, particularly the outer root sheath, the inner root sheath and the hair shaft. Combined, the matrix and the dermal papillae make up the hair
- **Bulb Outer root sheath:** The outer root sheath, or, is the outermost part of the hair and is keratinized. Inner root sheath: internal root sheath is comprised of three parts: the Henley layer, Huxley layer, and Cuticle





Hair Problem (24)

- **Hair Loss:**

Although historically discussed as a haul among men, hair loss/thinning hair is additionally common among women. for several men, it's getting to be male pattern balding. Female hair loss is typically caused by stress, medication, changing hormones, and even menopause. Additionally, many hair styling products (chemicals/excessive heat) can contribute to hair loss.

- **Dry Hair:**

Shampooing too often causes dry hair. Although squeaky clean hair may be a good thing, many overdo it by washing once, sometimes twice or per day which will strip away all of the hair's natural oils.

- **Spit Ends:**

Over-brushing hair, excessive perming, too much heat, and lack of a good conditioner cause split ends.

- **Oily/Greasy Hair:**

Oily hair is caused when the scalp produces an excessive amount of natural oil called sebum. Sebum is produced by sebaceous glands, which may sometimes "work overtime", leading to excessive amounts of oil.

- **Frizzy Hair:**

Frizzy hair occurs when the hair's moisture level falls below normal levels, and it can also be hereditary.

- **Dull Hair:**

There are many causes of dull-looking hair chemical or heat styling damage, and environmental soils.

- **Heat Damaged Hair:**

Use your curling iron or flat iron too much and your hair will become damaged.

- **Colour Damaged Hair:**

When you colour your hair, chemicals are used to open your hair shaft, leaving your hair extremely porous and prone to brittleness and breakage.

- **Gray Hair:**

To many, gray hair is a badge of honor. But others would prefer to get rid of it because gray hair can be brittle and more unruly than other strands.

- **Dandruff :**

Dandruff is little white pieces of dead skin in someone's hair, or fallen from someone's hair. It's apparently caused by a fungus called *Malassezia restricta* and *Globosa malassezia* formerly called *Pityrosporum* may be a yeast causing infection of skins and scalp. It's caused by not brushing hair, allergy, stress, not showering enough etc.



Types of shampoo

Shampoos are of the following types

- Powder Shampoo
- Liquid Shampoo
- Lotion Shampoo
- Cream Shampoo
- Jelly Shampoo
- Aerosol Shampoo
- Specialized Shampoo
- Conditioning Shampoo
- Anti-dandruff Shampoo
- Traditional shampoo
- Herbal shampoo
- Solid shampoo



1. Traditional Shampoo The most common hair care cosmetic product is the shampoo. Arora et al. reported that can be described, primarily, as a cosmetic preparation, packed in a form convenient for Use, generally applied for cleaning hair and scalp from dirt, residues of previously applied hair Styling products and environmental pollutants.

2. Herbal Shampoo interestingly, there is a large number of plants having beneficial effects on hair and being commonly used in shampoos for their content of vitamins, amino acids, sugars, glycosides, phyto-hormones, bioflavonoids, fruit acids and essential oils useful protocols for the artificial soiling of hair, various cleaning processes and the analysis of the lipids remaining on the hair by gas chromatography (9)

Ingredients	Medicinal uses
Neem	Antibacterial agent
Soap nut extract	Foaming agent
Amla extract	Antidandruff agent
Shikakai extract	Detergent
Hibiscus	Conditioning agent
Bhringraj extract	Hair growth
Aloe vera	Moisturizing agent
Gelatin	Gelling agent
Lemon juice	Antimicrobial

3. Solid shampoo Solid shampoos present some additional advantages compared to the traditional ones. In particular, they are easy to transport and can be used for a longer time, thanks to more Microbiological stability than liquid formulations.

4. Powder shampoo :It is available in the form of Dry powder, initially it was prepared from dry Soaps, but nowadays dry synthetic detergents are Used for their preparation. Powder shampoo is Prepared where addition of water or other solvent Reduces the activity of the components, especially In case of medicated shampoo. Nowaday these Shampoos are not used due to the difficulty Experienced in their application.

Ingredients	Biological sources	Uses
Amla fruit	Ripe fruits of <i>E. officinalis</i>	Hair darkening Hair growth promoter
Neem	Dried leaves of <i>A. indica</i>	Anti-dandruff agent Anti-bacterial agent
Shikakai fruit	Dried pods of <i>A. concinna</i>	Foaming agent Anti-dandruff agent
Tulsi	Dried leaves of <i>O. sanctum</i>	Anti-dandruff agent
Bahera	Dried fruits of <i>T. bellirica</i>	Hair darkening Hair growth promoter
Brahmi	Dried leaves of <i>C. asiatica</i>	Support Health of Hair
Henna	Dried leaves of <i>L. inermis</i>	Hair conditioner

5. Liquid Shampoo: These are clear liquid mixture that are most widely used. They are Usually made by using detergent of low cloud Point. Some of these shampoo may be transparent.

SLS	40%	Cleansing and foaming agent
Nacl(to desired viscosity)	2-4%	Thickener
Water	Upto 100%	Vehicle
Perfume,color, preservatives	q.s	Fragrance

6. Cream shampoo : These are called as lotion Shampoos which are modification of clear liquid Cream shampoos. solubilising agents such as magnesium stearate is also used to dissolve the Added opacifier. (2), (9), (8)



SLS	38%	Cleansing and foaming agent
Cetyl alcohol	7%	Moisturizer
Water	Upto 100%	Vehicle
Color, perfume	q.s	Fragrance
Preservatives	q.s	Prevent the microbial growth

7. **Jelly shampoo** : These are transparent and thick Usually produce by incorporating a gelling agent, e.g., cellulose). There is great use in hair salon And beauty parlors. The principle ingredient is detergent which can be used either alone or in combination with soap. by altering the proportion Of detergent, gel of required consistency can be Obtained. Addition of methyl cellulose to clear Liquid shampoo and its successive thickening also show rise to gel shampoo.

Alkyl dimethyl benzalkonium Chloride	15%	antimicrobial agent
TLS(40%)	28%	Baby shampoo
Coconut ditethanolamide	7%	stabilize the foam
HPMC	1%	Foam enhancer and stabilizer, thickener, emulsion stabilizer
Water	Upto 100%	Vehicle
Color, perfume, preservatives	q.s	Fragrance, prevent the microbial Growth

8. **Aerosol shampoo** : They are called aerosol Shampoos because they are packed in aerosol Containers. Their formulation, preparation and Packing is complex as an additional propellant Is included. The propellant added must be united and should not reduce the activity of Shampooing ingredients. The container space is Provided with a valve. Shampoo comes out foam When the valve is pressed. consequently also called as Foam type shampoo.

TLS	60%	Baby Shampoos,
Coconut ditethanolamide	2%	stabilize the foam
Water	Up to 90%	Vehicle
Propellant	10%	Cleaner
Color, perfume, preservatives	q.s	Fragrance, prevent the microbial Growth

ADVANTAGES OF SHAMPOO: (2), (6)

1. Cleansing properties
2. Improving hair hygiene.
3. Treating scalp conditions
4. Treatment for dry scalp
5. Treatment for hair loss.
6. Treatment for greasing or oily hair.
7. Relieves itch and irritation
8. Repairs damaged hair.
9. Shampoo keeps hair silky or smooth.
10. Keeps your hair beautiful and blossomed.
11. Pure and Organic Ingredient Free from Side Effects
12. No Surfactants eg:- SLS
13. No Synthetic Additives
14. No Animal Testing
15. Earth And Skin Friendly

IDEAL PROPERTIES OF HERBAL SHAMPOO: (3), (4)

- It should effectively and completely remove dust or soil, excessive sebum or other fatty Substances and loose corneal cells from the hair.
- It should produce a good amount of foam to satisfy the psychological requirements of the user.
- It should be easily removed on rinsing with water.
- It should leave the hair non-dry, soft, shiny with good manageability minimum Fly away.



USES OF HERBAL SHAMPOO

- Gently Cleanses Scalp
- Promotes hair growth
- Nourishes and conditions
- Improve hair texture

AIM: PREPARATION AND EVALUATION OF HERBAL SHAMPOO

USE OF INGREDIENTS (22)

- 1) **Reetha:** 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.

Potential 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.
- It may clean the oily secretions in the skin and might be used as a cleanser for hair and a hair tonic as it forms a natural lather.
- It may also be used for removing lice from hairs.

However, it is always best to consult your doctor and only use them if recommended.

- 2) **Amla:** *phyllanthua emblica*, also known as emblic, emblic myrobalan, myrobalan, Indian gooseberry, Malacca tree or amla .



Benefits of gooseberry for hairs

- Natural hair straightener
- It can do good for hair by making it seem smooth and silky.



3) Sikhakai: Shikhakai also known as acacia concinna, is a shrub-like tree native to central india.



Properties of Shikhakai

- It may have anti- dandruff potential
- It may help with wound healing
- It may have anti hair fall potential
- It may be anti-inflammatory
- Antibacterial potential
- Antifungal potential
- Good antioxidant
- Help with hair fall

4) Aloe vera: The species has several synonyms: Aloe barbadensis Mill., Aloe indica Royle, Aloe perfoliata



L. var. vera and Aloe vulgaris Lam.

- 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
- Detangle hairs

5) Rose Oil: Botanical name: Rosa indica Family: Rosaceae (Rose family) Synonyms: Rosa x borboniana,



Rosa pannosa.

- It repairs hair damage
- Improves growth of hairs
- Reduces the dandruff
- Gives fragrance to the shampoo

6) **Hibiscus leaves:** Hibiscus is a flowering plant that belongs to the Family Malvaceae, Also knows as Mollow Family.

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



7) **Lemon Juice:** The lemon (*Citrus limon*) is a species of small evergreen tree in the Citrus genus of the flowering plant family Rutaceac.

- Add More shine.
- Get rid of dandruff
- Split ends
- Reduces Hair fall



8) **Senna Extract:** Senna, the sennas, is a large genus of flowering plants in the legume family (Fabaceae)

Strong Hair
Great Conditioner
Combats Hair Loss



Gelatin: Gelatin is a class of compounds called polysaccharides. Starches from various plant and animal sources are polysaccharides.

- Gelatin Can improve hair thickness and growth.
- Gelatin supplement or placebo for 50 weeks to 24 people with alopecia.
- It gives thickness to hairs.
- For strengthening of Hairs



10) Bhingraj: *Eclipta prostrata*, the false daisy, is a species of plant in the family Asteraceae. It is widespread across much of the world.

- Treats baldness and help in growth of hairs
- Makes hair lustrous



USES OF SHAMPOO

- Suitable for all hair type
- Promote hair growth
- Strengthens hair follicles
- Cleanses and hydrates scalp
- Prevent hair fall
- Prevent dandruff



Extraction method : Shikakai, an Ayurvedic ingredient, is often extracted for shampoo preparation through a boiling water extraction method. The shikakai pods or fruit are soaked in water, then boiled, and finally strained to obtain the extract. This extract can then be combined with other ingredients like reetha (soap nuts), amla (Indian gooseberry), and additional herbs to create a natural shampoo.

Detailed Extraction Method

1. Soaking

Shikakai pods or fruit are soaked in water, typically overnight, to soften them.

2. Boiling

The soaked mixture is then boiled in a pressure cooker or pot, allowing the nutrients to extract into the water.

3. Straining

After boiling, the liquid is strained to remove any solids or residue, resulting in a clear shikakai extract.

4. Combination

The shikakai extract is then combined with other ingredients like reetha, amla, and additional herbs, such as neem, tulsi, or hibiscus, to create a complete shampoo formula.

5. Blending and Storage

The blended mixture is then strained again to ensure a smooth consistency and stored in a glass bottle.

Other extraction Methods

often using a blender. The resulting powder is a natural, triple-sifted product, free from additives, and known for its various medicinal properties.

Here's a more detailed look at the process:

1. Harvesting and Drying

The leaves of the Bhringraj plant are harvested and then dried to remove moisture.

2. Grinding

The dried leaves are ground into a fine powder, often using a blender or grinder.

3. Sifting

The powder is often sieved to ensure a smooth and uniform consistency.

4. Quality Control

Manufacturers may perform purity tests to ensure the powder is free from heavy metals and other contaminants, according to Ayurveda Cart.

Extraction method of Amla and Reetha:

1. Collect the material.
2. Chop the material.
3. Remove seeds
4. After removing seeds dry it.
5. Grind it.
6. Seive it

MATERIALS AND METHODS: Preparation of powder extract (20), (21), (16)

The following steps are employed for formulation of Polyherbal Shampoo Powder:

- Drying : all the ingredients required for shampoo preparation are dried and grinded.
- Weighing : all herbal powders required for preparation are weighed separately.
- Size reduction: the weighed materials are subjected to size reduction using hand driven mixer individually.
- Mixing: the fine powders are mixed methodically using mixer to form a homogenous mixture
- Sieving: the mixture is passed through sieve no. 8, to get uniform size particles and reduce the lumps.
- Packing and labelling : finally, the powder was packed and labelled suitably



Details of the plant materials study (12)

Sr no	Common Name	Botanical Name	Parts used	Category
1	Hibiscus	Hibiscus rosa-Sinensis	Flower	Conditioning agent
2	Amla	Embilica Officinalis	Fruit	Anti-dandruff agent
3	Shikakai	Acacia concinna	Powder	Detergent
4	Soapnut	Sopindus indica	Fruit	Detergent
5	Cassia	Cassia auriculata	Leaves	Antidandruff agent
6	Bring raj	Eclipta prostrata	Leaves, flower	Hair growth
7	Aloe vera	Aloe Barbadosis	Leaf	Coolant

Method for preparation of herbal shampoo

The following steps are involved in preparation of polyherbal shampoo:

1. Collection of materials: ingredients required for the preparation are collected and wash thoroughly and dried.
2. Weighed : ingredients are weighed individually and soaked overnight.
3. Decoction preparation : decoction of heena leaves, hibiscus leaves, aloe vera powder and amla was prepared in one part of water. Filter it, by using muslin cloth. Collect filtrate.
4. Filter it, by using muslin cloth. Collect filtrate.
5. Decoction of shikakai, bhringraj, nagarmotha and reetha was prepared in another part of water.
6. Filter it by using muslin cloth. Collect filtrate.
7. Mixed to each other of above filtrate with constant stirring.
8. Mixed gaur gum as thickening agent for maintenance of consistency of herbal shampoo as like semi solid nature.
9. Rose oil is added to impart fragrance to the formulation.





Preparation of Herbal Shampoo

Material required	Quantity		Medicinal use
	F1	F2	
Soap Nut Extract	2.5g	3g	Foaming agent
Amla Extract	2.5g	2g	Antidandruff agent
Shikakai Extract	2.5g	3g	Detergent
Hibiscus	2.5g	2g	Conditioning agent
Bhringraj Extract	2g	2g	Hair growth
Lemon Juice	1.0mL	-	Antimicrobial
Aloe Vera	q.s	q.s	Moisturizing agent
Senna Extract	q.s	q.s	Hairs Loss
Gelatin	q.s	q.s	Gelling agent
Rose Oil	q.s	q.s	Fragrance

FUNCTION OF HEARBAL SHAMPOO

16. Lubrication
17. Conditioning
18. Hair Growth
19. Maintenance of Hair Colour
20. Medication (6)

BENEFITS OF HEARBAL SHAMPOO

1. More Shine
2. Less Hair Loss
3. Long Lasting Colour
4. Stronger and More Fortified Hairs
5. All Natural, No Chemicals
6. Wont Irritate Skin or Scalp
7. Keep Healthy Natural Oils (2)

Composition of shampoo

1. Principal surfactant
 2. Secondary surfactant
 3. Antidandruff agents
 4. Conditioning agents
 5. Pearlescent ageagent
 6. Sequestrants
 7. Thickening agents
 8. Colours, Perfumes and Preservatives (10)
- Principal surfactant: Surfactant are cleaning agents that substituted soap They act through the weakening of the physicochemical adherence forces that bind impurities and residues to the hair. Surfactant dissolve these impurities preventing them from binding to the shaft or the scalp. The cleansing ability of a shampoo depends on how well it removegrease as well as the type and amount of surfactants used. (11)
 - Conditioner agent: Conditioner are used to decrease friction, detangle the hair, minimize frizz and improve combability. Conditioner act by neutralizing the electrical negative charge of the hair fiber by adding positive charges and by lubricating the cuticle thatreduces fiber hydrophilicity.

Functions of the conditioners (11)

- Improve combability
- Mimetize the hair natural lipid outer layer
- Restore hydrophobicity
- Seal the cuticle
- Avoid or minimize frizz, friction: Neutralize the negative charged net
- Enhance shine, smoothness and manageability
- **Colour perfumes and preservatives :** As most of the surfactants typically used in shampoos have a straw/yellow color, the variety of colors that can be achieved are limited. Green, yellow and orange are easier to obtain than pastels The other cover when adding color to a shampoo is the stability of the color. Blue tend to turn green, reds tend to turn orange and greens tend to turn yellow. These colorchanges can occur



whether the shampoo is exposed to UV light or can occur just from heat and aging.

- **Secondary surfactants:** improved detergency, foam and hair condition. Conditioning agents: Lanolin, mineral oil, fenugreek, herbal extracts, Henna egg derivatives. (10)

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,

- **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.
- **Determination of solid content percentage:** 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 using standard protocol.
- **Surface tension measurement:** The prepared shampoo in distilled water (10% w/v) was evaluated for surface tension using stalagmometer in room temperature.
- **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.
- **Foam stability 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.
- **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.
- **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.
- **Cleaning action:** About 1 g of grease is spread on non-adsorbent cotton and kept in conical flask containing 1% shampoo solution. The conical flask is shaken for 1 hr in mechanical shaker. Cotton is collected, dried and weighed. The amount of grease removed is determined by using the equation given below:

$$DP = 100 (1 - T C)$$

Where,

C - Weight of grease in control sample

T - Weight of grease in test sample

DP- Percentage of detergency power

- **Skin sensitization test:** this test is performed on skin of human volunteers and checks whether it irritation on skin or not.
- **Eye irritation test:** Albino rabbits can be used for performing eye irritation test. The prepared shampoo solution is allowed to fall into eyes of six albino rabbits. The damage that is caused to rabbit's eye at different time intervals is recorded. Eye Irritation can be caused due to ulceration, swelling of eyelid, blindness and hemorrhage.
- **Nature of Hair after Washes:** nature of hairs after wash can be done by collecting the responses of volunteers.

**Results and discussions**

Results of Tests Performed

Sr.no	Evaluation tests	Results obtained	
		F1	F2
.			
1.	Physical appearance	Dark Brown	Dark Brown
2.	pH	5	4
3.	Percentage of solid contents	4.1%	3.1%
4.	Rheological evaluations	1.92cps	1.07cps
5.	Dirt dispersion	light	Light
6.	Skin sensitization	No irritation on skin	Some irritation on skin
7.	Stability test	Stable after 1 month	Stable after 20 days
8.	Foaming ability and foaming stability	40ml	30ml
9.	Nature of hair after washes	Soft and manageable	Soft and manageable
10.	transparency	clear	Clear
11.	Odour	Good	Not good
12.	Foam type	Dense, small	Dense, small
13.	Foam volume	22	23
14.	Wetting time	100s	120s

CONCLUSION

The main purpose behind this formulation was to develop a stable and effective shampoo by including all types of additives which are added in this formulation. By using herbal natural extracts we can reduce the side effects of shampoo. Herbal shampoo is more safer than synthetic shampoo. Shiny hair having a smooth texture and clean-cut end is generally perceived to be Healthy. 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. There is a strong need to change the consumer perception of a good shampoo. Hence ,according to result and discussion it is conclude that F1 is better than F2.

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