



PROJECT WORK

on

Formulation & Evaluation of Anti Hair Fall Herbal Shampoo

In the Faculty Of Pharmacy,

Dr.Babasaheb Ambedkar Technological University, Lonere

BACHELOR OF PHARMACY

Submitted by

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Abstract:-

The objective of this study is to formulate and evaluate poly-herbal shampoo for cosmetic purpose from herbal ingredients. Hibiscus powder, Neem powder, Henna powder, Amla powder, Shikakai powder, Ritha 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 its organoleptic 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 rease 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.



Herbal Shampoo

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 has built up on the hair without stripping out much of the sebum. Many synthetic shampoos are present in the current market both medicated and non medicated; 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 products 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 traditional and commonly used plant materials for hair washing in India and Gulf region especially in Oman.

Aim & Objective :

Aim :

To formulate and evaluate a natural chemical-free shampoo using plant based ingredients that effectively cleanse the hair and scalp while minimizing side effects and enhancing hair health.

Objective :

- Utilizing herbs known for their beneficial effects on hair.
- Reducing reliance on synthetic surfactants and preservatives.
- Ensuring the shampoo is safe eco-friendly and biodegradable.
- Evaluationg the physicochemical properties and effectiveness of the final product.

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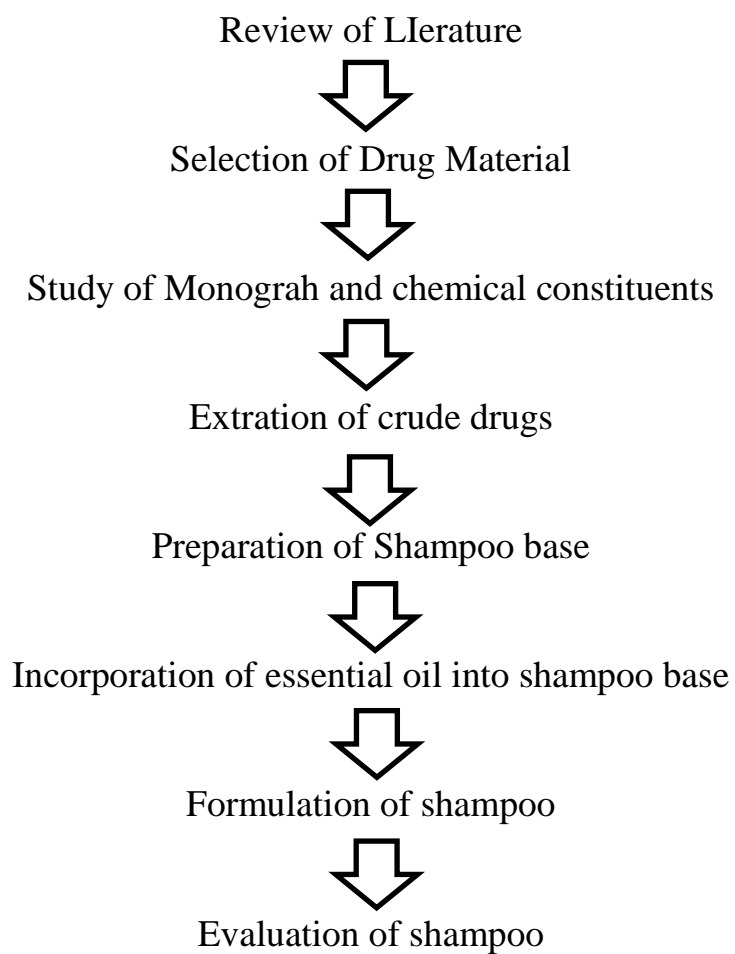
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PLAN OF WORK:



BENIFITS 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 Oil

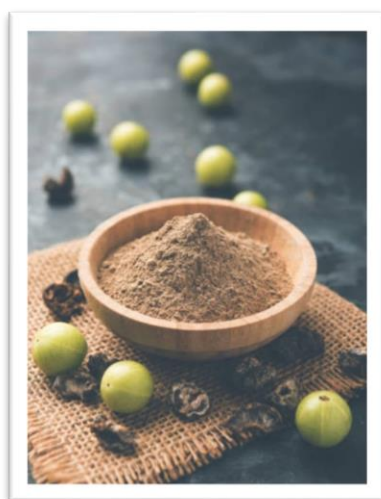


Fig: 2 Amla



Fig no: 3RITHA



Fig no: 4 Shikakai

FUNCTION OF HEARBAL SHAMPOO:-

- Lubrication
- Conditioning
- Hair Growth
- Maintenance of Hair Colour
- Medication.

DESIRED PROPERTIES OF HEARBAL SHAMPOO:-

1. Ease of Application
2. Removal of More Debris
3. Easy Wet Combing
4. Fragrance
5. Low Level of irritation
6. Well Preserved
7. Good Stability..

ADAVANTAGES OF HERBAL SHAMPOO:-

1. Pure and Organic Ingredient
2. Free from Side Effects
3. No Surfactants .

INGREDIENTS :-

Materials required	Quantity to be Weighed
Amla extract	2gm
Shikakai extract	2 g
Bhingraj extract	2gm
Retha extract	3gm
Gelatin	1gm
Lemon Juice	1ml
Rose Oil	5 drops

TABLE NO : 1

USE OF INGREDIENTS:-

1. Reetha extract :

- A. Stops Hair Fall
- B. Prevents Dandruff
- C. Fight Against Scalp Infection



Fig no: 6 Reetha extract

2. Amla Extract :-

- A. Strengthen the Scalp and Hair.
- B. Reduce premature pigment loss from hair, or greying.
- C. Stimulate Hair Growth. iv. Reduce Hair Loss.
- D. Prevent or treat dandruff and dryscalp.
- E. Prevent or treat Fungal and Bacterial hair and Scalp infections.
- F. Improve overall appearance of Hairs



Fig no:7 Amla Extract

3. Shikakai Extract :-

1. Cleanses Hair.
2. Add more Shine to the Hairs,.
3. Prevents Grays.
4. Crubs Hair Loss
5. Prevents Lice, Psoriasis, Eczema & Scabies.
6. Provides Nourishment to the hair and promote healthyand rapid hair growth.
7. Prevents Split ends.



Fig no: 8 Shikakai Extract

5. Bhringraj Extract: –

1. Treats baldness and helps in growth of hairs.
2. Makes Hair Lustrous



Fig no : 9 Bhringraj Extract

8. Gelatin: –

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



fig no :11 **Gelatin**

9. Lemon Juice: –

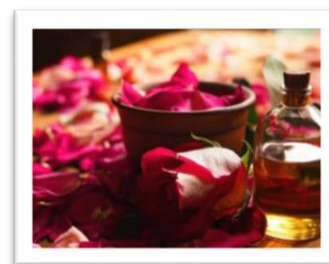
1. Add More shine.
2. Get rid of dandruff
3. Split ends
4. Reduces Hair fall
5. Gives Natural colour to hairs
6. Detox the scalp
7. Promotes the growth of hairs
8. Great hair mask for dry and damage hair






Fig no : 12 **Lemon Juice**

Rose Oil :





- Use for fragrance



DESCRIPTION OF THE INGREDIENTS –

SR.NO	COMMON NAME	PICTURES	BOTANICAL NAME	FAMILY	USED
	Hibiscus		Hibiscus rosa-sinensis	MALVOCEACE	Used to the conditioning agent
	Amla		Emblica officinalis	Phyllanthaceae	Used to the anti dandruff agent
	Reetha		Acacia concinna	Mimosaceae	Used to anti dandruff agent
	shikakai		Sapindus Indica	Soapberry	Anti dandruff

Formulation And Evaluation Of Anti Hair Fall Herbal Shampoo

		 <small>Fig no: 4 Sakakai</small>			
	Bhringraj		Eclipta prostrate	Asteraceae	For hair growth
	Aloe vera		Aloe barbadensis	Asphudclacea	Nourshing hairs antidandruff
	Neem		Azadirachta indica	Mohogony	Dandruff and hair fall used

FORMULATION OF HERBAL SHAMPOO: –

Method :

- Take 50 ml boil water .
- Add 1gm of gelatin power in it.
- Stir it for 20 minutes.
- Then weight all required herbal extracts using weighing balance, and add to the Gelatin solution.
- Stir this for 10 minutes.
- Add 1ml of lemon juice with constant stirring.
- Then added 5 drops of rose oil for fragrance.
- Added 10 gm of sodium Lauryl sulphate and stir for 15 min
- Lastly check pH of prepared shampoo.

	<u>Particulars</u>	<u>Uses</u>	<u>F1</u>
1	Aloe(Aloebarbadensis) leaf	Conditioning,Hair lustring	2g
2	Neem(Azaradictaindica) leaf	Antiseptic and antibacterial	2g
3	Shikakai(Acaciaconcinna) fruit	Foam base	2g
4	Ritha(Sapindustrifolatus) fruit	Saponins	3g
5	Amla(Emblica officinalis) fruit	Hairgrowthpromoter	2g
6	Gelatin Solution	Base	2g
7	Rose Oil	Fregrance	5 rdrops
8	Sodium Lauryl sullphate	Surfactant	10g

Table no : 2

EVALUATION OF HERBAL SHAMPOO :-

(I) Organoleptic evaluation :-

Organoleptic evaluation on the parameters like colour, odour taste and texture was carried out. Colour and texture was evaluated by vision and touch sensation respectively. For taste and odour evaluation a team of five taste and odour sensitive persons was formed and random sampling was performed.

(II) General powder characteristics:

General powder characteristics includes evaluation of those parameters which are going to affect the external properties (like flow properties, appearance, packaging criteria etc.) of the preparation, Characteristics evaluated under this section are powder form, particle size angle of repose and bulk density. Sample for all these evaluation were taken at three different level i.e. from top, middle and lower level.

Particle size

Particle size is a parameter, which affect various properties like spreadability, grittiness etc., particle size was determined by sieving method by using I.P. Standard sieves by mechanical shaking for 10 min.

Angle of repose

It is defined as the maximum angle possible in between the surface of pile of powder to the horizontal flow. Funnel method Required quality of dried powder is taken

Bulk density

Bulk Density is the ratio between the given mass of a powder and its bulk volume. Required amount of the powder is dried and filled in a 50 ml measuring cylinder up to 50 ml mark. Then the cylinder is dropped onto a hard wood surface from a height of 1 inch at 2 second intervals. The volume of the powder is measured. Then the powder is weighed. This is repeated to get average values. The Bulk Density is calculated by using the below given formula.

Tapped density

The tapped density is an increased bulk density attained after mechanically tapping a container containing the powder sample. After observing the initial powder volume or mass, the measuring cylinder or vessel is mechanically tapped for 1 min and volume or mass readings are taken until little further volume or mass change was observed. It was expressed in grams per cubic centimeter (g/cm³).

Physicochemical evaluation pH

The pH of shampoo solution in distilled water was determined at room temperature 25°C. The pH was measured by using digital pH Meter.

Washability

Formulations were applied on the skin and then ease and extent of washing with water were checked manually.

Solubility

Solubility is defined as the ability of the substance to soluble in a solvent. Two gram of the powder is weighed accurately and transferred into a beaker containing 50 ml of water. This was shaken well and warmed to increase the solubility. Then cooled and filter it, the residue obtained is weighed and noted.

Loss on drying

Loss on drying is the loss of mass expressed in percent m/m. Two gram of the powder was weighed accurately and transferred into a dry Petri dish.

Dirt dispersion

Two drops of 1% each shampoo powders were added in a large test tube contain 10 ml of distilled water. 1 drop of India ink was added; the test tube was stoppered and shaken for 10 times. The amount of ink in the foam of was estimated as None, Light, Moderate, or Heavy.

Moisture content determination

10 g of each herbal shampoo powder was weighed in a tare evaporating dish and kept in hot air oven at 105°C. Repeated the drying until the constant weight loss was observed after the interval of 30 minutes. The moisture content was calculated for each sample.

Wetting time

The canvas was cut into 1 inch diameter discs having an average weight of 0.44 g. The disc was floated on the surface of shampoo solution of 1% w/v and the stopwatch started. The time required for the disc to begin to sink was measured accurately and noted as the wetting time.

Stability Study

Stability and acceptability of Organoleptic properties (odor and color) of formulations during the storage period indicated that they are chemically and physically stable

Nature of hair after washes

Nature of hair after wash can be done by collecting the responses of volunteers.

Skin /eye irritation test

The eye and skin irritation tests revealed that the herbal shampoo powder shows no harmful effect on skin and eye. This is due to the absence of synthetic surfactants. Most of the synthetic surfactants produce inflammation of the eyelid and corneal irritation. But in this formulation of herbal shampoo powder, the uses of all ingredients are obtained naturally. So it does not produce any harmful effect on skin

PHYSICOCHEMICAL PROPERTIES OF HERBAL SHAMPOO:-

Evaluation test	Formulated Shampoo
Colour	Brown
Transparency	Clear
Odour	Good
pH of solution	5.5
Foam volume (ml)	25
Foam type	Dense, small
Wetting time (s)	120 s

Table no : 3

LIMITATIONS OF HERBAL SHAMPOO:-

1. Natural products affect product uniformity, Quality control.
2. Seasonal variation of plant constituents.
3. Less self life.

RESULT: –

- The shampoo was formulated by admixing of the herbal extracts .
- Reetha have foaming property.
- Lemon juice (1 ml) added to the shampoo serves as anti-dandruff agent, natural
- antioxidant, and chelating agent and maintains the acidic pH in the formulation.

Evaluation of polyherbal shampoo powder

1) Organoleptic evaluation:-

Sr. no.	Organoleptic evaluation	Result
1	Colour	Brown
2	Odour	Slight pleasant
3	Taste	Characteristics
4	Texture	Fine smooth

1) General powder characteristics:-

Sr no	Powder characteristics	Result
1	Particle size	25-20 micrometer
2	Angle of repose	a) $34^{\circ}9'$ b) $31^{\circ}3'$
3	Bulk density	0.354
4	Tapped density	0.340

a: Funnel Method;

b: Open ended cylinder method

Physicochemical Property

Sr no.	Physiochemical evaluation	Result
1	pH	5.5
2	Washability	Easily washable
3	Solubility	Soluble
4	Skin / Eye irritation	No harmful effect on the skin
5	Foaming capacity	Good foaming

Final Product :



CONCLUSION:–

The present study was carried out with the aim of preparing the herbal shampoo that reduces hair loss during combing, safer than the chemical conditioning agents as well as to strengthen the hair growth. Herbal shampoo was formulated with the aqueous extract of medicinal plants that are commonly used for cleansing hair traditionally. 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 cationic conditioners. The main purpose behind this investigation was to develop a stable and functionally effective shampoo by excluding all types of synthetic additives, which are normally incorporated in such formulations. To evaluate for good product performance of the prepared shampoo, many tests were performed. The results of the evaluation study of the developed shampoo revealed a comparable result for quality control test, but further scientific validation is needed for its overall quality.

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