

FORMULATION AND EVALUATION OF HERBAL ANTI-DANDRUFF SHAMPOO

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ABSTRACT

Shampoo is a hair care product used for the removal of oils, dirt skin particles, dandruff, environmental pollutants etc. in hair. It has also property of cleansing of sebum scalp debris and hair grooming preparations. Dandruff is caused by *Malassezia (Pityrosporum) furfur* is reported as most common etiological agent and a common skin condition affects the scalp and hair. The aim of this formulation is to exchange the chemicals by natural ingredient. Several herbs were used to improve the activity of formulation of antidandruff shampoo. Herbal shampoo was prepared with leaves extract and Ritha and Shikakai were used as surfactants. Evaluation of organoleptic properties, physiochemical and performance test were performed and compared with synthetic marketed product. The formulated shampoo were subjected to evaluation parameter like pH, viscosity, foaming stability, visual inspection, cleaning action, stability studies, percent solid contents, surface tension measurement. Therefore aim of the present work is to improve the antidandruff activity of prepared shampoo.

Keywords

Neem leaves powder; Hibiscus leaves powder, henna leaves powder, Shikakai fruit powder, Ritha fruit powder, Linseed, Lemon, Guar gum, Lavender oil, Amla decoction, etc.

Introduction

The word cosmetic arises from a greek word Kosmetics' which means to adorn. Since that time any material used for beautification or improvement of appearance is known as cosmetic''

DEFINATION OF SHAMPOO:-

“A shampoo may be described as a cosmetic preparation meant for the washing of hair and scalp packed in a form convenient for use”.

Though there are different types of skin cleansing, preparation can be grouped into only one category and are called as shampoo. They are water basically water based products containing mainly surfactant.

It's primary function is of cleansing the hair of accumulated sebum, scalp, debris and residues of hair grooming preparations. The herbal shampoo although better in performance and safer than the synthetic ones will be popular with consumers.

FUNTION OF SHAMPOO:-

The shampoo were effectively and completely remove dust or soil, excessive sebum or other fatty substance loose corneal from the hair and other residual substance of hair dressing or setting or other material.

It should effectively wash the hair, easily removed by rinsing with water.

It should produce a good amount of foam to satisfy the psychological requirement of user.

It should leave the hair non dry, soft, lustrous with good.

It should make a pleasant fragrance to the hair.

Shampoos are various types like as follows:-

1. Powder shampoo
2. Clear liquid shampoo
3. Liquid shampoo
4. Lotion shampoo
5. Solid gel shampoo
6. Medicated shampoo
7. Liquid herbal shampoo

As the time passed synthetic agents have taken a large share but today people are getting aware of effects on hair, skin and eyes. For this reason many of people uses herbal product which has less side effects and low cost. Hair cleansers or shampoo are used not only for cleaning purpose but also imparting gloss to hair and to maintain their manageability and oiliness for hairs.

The selection of active ingredients for hair care shampoo is often based on the of the ingredient to prevent damage to skin as well as to improve the quality of the skin by way of cleansing, nourishing, and protecting the skin.

Also the herbal shampoo is less expensive.

The herbal shampoo is easier to remove from the hair.

It has not made the hand rough and chapped.

It's not given any side effects or causes irritation to the eye.

It produces a good amount of foam to satisfy the psychological requirement of the user.

It leaves the hair non dry, soft, lustrous with good manageability to the hair.

It gives good smelling of hairs.

It gives anti dandruff effects.

A good shampoo should almost immediately form abundant foam irrespective of the type of water used or nature of soil or fat to be removed from the hair. Though foam formation is not related 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 means t dryness of hairs. So proper conditioning of the hair is also an important consideration. Some shampoos cause irritation to the eye and lasting corneal cloud. These also should be avoided. Herbal shampoos are concerned in stability criteria.

Herbs are used since from the beginning of civilization to health and disease.

Various literatures provides lots of information on the folklore in different parts of country and traditional aspects of therapeutically important natural products and also their use in skin care and hair care.

Herbs have long been associated with hair care and are often ingredients of conditioners, shampoo and rinses. The selection of active ingredients for hair care shampoo is often based on the ability of ingredients to prevent damage to the skin as well as improve the quality of the

skin by way of cleansing, nourishing and protecting the skin.

Hair is an important part of over appeal of human body, historically been associated with beauty and social distinction. Innumerable instances from all art forms can be cited supporting the special prominence accorded to hair by people of virtually all times and cultures. There are many hair problems like hair loss, dandruff, unruly hair thinning of hair, lack of hair volume, conditioning, immature graying dullness which have been observed in some point of time by most of the individuals.

Dandruff is reported to be common problems in most of the population. People most often think of it as anything that produces flaky scalp. Although it's harmless, dandruff can be embarrassing for those who have it . It's usually starts between ages of 10& 20 affects up to 40% of over age of 30.

A shampoo may be described as a cosmetic preparation it's primarily function is to clean the accumulated sebum, scalp debris, oil, etc present on hair. The added function of shampoo include lubrication ,conditioning, hair building ,prevention of static charge build up, medication etc .There are a synthetic well as herbal shampoos available commercially and used extensively for the same .The need and awareness for cosmetics with herbs is on rise, primarily because it's believed that these product are safe and free from side effects.

Hair is one of the external barometers of internal body conditions It's an important part of the human body. Various synthetic compound, chemical, dyes and their derivatives have been proved to cause harmful effects .Now a days, people are having an awareness of their effects on their inexpensive nature and negligible side effect. Herbal cosmetics are denoted as products formulated using various permissible cosmetics ingredients to form the base in which one or more herbal ingredients are used provide accurate cosmetic benefits .Now a days, the use fullness of herbs in the cosmeceutical production

has been extensively increased and there is a great demand for the herbal cosmetics.

To select detergents for using in shampoo, the following factors should be considered –

- Safety and non toxicity.
- Ease of distribution and lathering power.
- Luster imparted to hair.
- Ease of combing wet hair.
- Speed of drying.
- Ease of setting dry hair.

Material and Method

MATERIAL AND INSTRUMENTS

Sr.No	Materials	Supplier
1.	Neem leaves powder	Local market, Osmanabad
2.	Hibiscus leaves powder	Local market, Osmanabad
3.	Heena leaves powder	Local market, Osmanabad
4.	Shikakai fruit powder	Local market, Osmanabad
5.	Ritha fruit powder	Local market, Osmanabad
6.	Linseed	Local market, Osmanabad
7.	Lemon	Local market, Osmanabad
8.	Guar gum	College lab
9.	Levender oil	College lab
10.	Amla decoction	Prepare Q.S.

LIST OF INSTRUMENTS

Sr.No.	Instruments	Model number
1.	Electronic balance	Model BX 6205 shimadzu Asia specific Pvt. Ltd. Singapore.
2.	Heating mental	Rajesh chemicals Mumbai.
3.	Beakers	Rajesh chemicals Mumbai.
4.	Glass rod	Rajesh chemicals Mumbai.
5.	Test tubes	Rajesh chemicals Mumbai.
6.	Mortar pestle	Rajesh chemicals Mumbai.
7.	Tripod stand	Rajesh chemicals Mumbai.
8.	China dish	Rajesh chemicals Mumbai.
9.	Water bath	Rajesh chemicals Mumbai.
10.	Muslin cloth	Local market.

Herbs used in the preparation of herbal shampoo

Sr. No.	Constituents	Biological source	Family	Uses
1	Neem leaf	Dried leaves of <i>Azadirachta indica</i>	Miliaceae	Prevent the dryness of hairs and act as antibacterial agent.
2	Hibiscus leaf	Dried leaves of <i>Hibiscus rosea</i>	Malvaceae	Prevent the hairs loss and hair growth promoter.
3	Henna leaf	Dried leaves of <i>Lawsonia inermis</i>	Lythraceae	Growth o hair, conditioner.
4	Shikakai fruit	Dried pods of <i>Acacia concinna</i>	Mimosaceae	Foam base and antidandruff.
5	Ritha fruit	Dried fruits of <i>Sapindus Mukorossis</i>	Sapindaceae	Detergent ant antidandruff.
6	Linseed	Dried ripe seed of <i>Linum usitatissimum</i>	Linaceae	Sequestering agent.
7	Lemon	Pericarp of the ripe fruits of <i>Citrus limonis</i>	Rutaceae	Antidandruff natural cleanser, PH Modifier.
8	Guar gum	Powder of endosperm of the seed <i>Cyamopsis tetra Gonolobus</i>	Leguminosae	Thickening agent.
9	Levender	Oil extracted from <i>Lavandula angustifolia</i>	Lamiaceae	Reverse of hair loss
10	Amla	Dried ripe fruits of <i>Embelica Officinalis</i>	Euphorbiaceae	Strengthen hair, antidandruff agent promotion of hair growth.

EXPERIMENTAL WORK

Preparation method of herbal anti-dandruff shampoo

Decoction Method:-

Weight all the ingredients according to the formula.

Decoction is method of extraction which is prepared by boiling of herbal plant which may include stems, roots, bark, rhizomes, etc.

Aqueous decoction of Amla was prepared and divided into to two parts.

Make decoction of Hibiscus ,Henna , Neem was prepared and mixed in one part of Amla decoction.

The powder of Shikakai and Ritha was added in another part of Amla decoction.

Both parts were mixed together with constant stirring.

Filter it by muslin cloth .Collect filtrate.

Mixed linseed extract as Sequestering agent and gaur gum as a thickening agent for maintenance of consistency of herbal shampoo as like semisolid nature .

Preservatives and perfume was added lastly.

EVALUATION TEST

1 .Physical appearance /visual assessment

The formulation prepared was evaluated in terms of their clarity, foam producing ability and fluidity.

2. Determination of pH

Take pH paper strip and place on a white tile. Pour a drop of the sample on the pH paper. Observe the pH Paper. Now, compare color obtained on the pH paper with different color shade of the standard color pH chart and note down the PH value.

3. Determine percent of solids contents

Take weight of evaporating dish and add 5 grams of sample of shampoo. Put the evaporating dish with shampoo was placed on the hot plate until the liquid portion was evaporated. After drying calculate the weight of sample of shampoo.

4. Rheological evaluation

The viscosity of the shampoo was calculated by using Brookfield viscometer II + model spindle S 64 at 10rpm. The viscosity of the shampoo was measured at room temperature.

5. Foaming ability and foam stability

This test was determined by Cylinder shake method to check foaming ability. Make 1% solution of shampoo by adding 1ml of shampoo in 100 ml of water. Take 50 ml of the 1% shampoo solution and pour it into a 250 ml graduated cylinder and covered the cylinder with hand and shaken for 4 minutes, foam volume were recorded.

6. Skin sensitization test

This test is performed on skin of volunteers and checks whether it irritation on skin or not.

7 .Dirt dispersion

Take two drop of shampoo were added in the large test tube contain 10 ml of distilled water. One drop of ink was added in the test tube, was stopped and shakes for ten times. The amount of

ink in the foam was estimated as none, light, moderate or heavy.

8 .Stability test

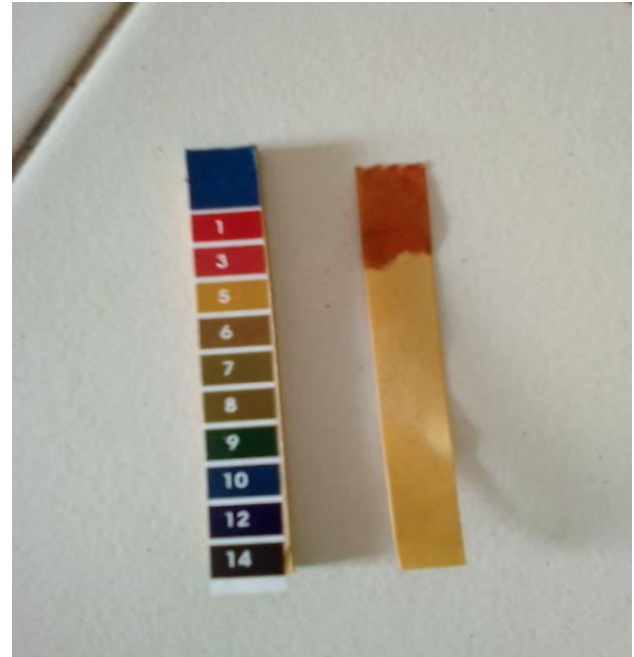
Stability and acceptability of organoleptic properties (odor and color) of formulations during the storage period of 2 months indicated that they are chemically and physically stable.

Result:

Evaluation test of herbal shampoo

Sr. No	Evaluation test	Results obtained
1.	Physical appearance	Dark brown
2.	pH	5.42
3.	Percent of solids contents	25%
4.	Reological evaluation	2000 cps
5.	Dirt dispersion	Light
6.	Skin sensitization	No irritation on skin
7.	Stability test	Stable after two months
8.	Foaming ability and Foaming stability	Good foaming
9.	Nature of hairs after washes	Soft manageable

Sample product



PH test



Foaming test



Solid content test

CONCLUSION

The aim of behind this formulation was to develop stable and low cost of antidandruff shampoo by using natural ingredients. The formulated anti dandruff shampoo was not only safer than the chemical conditioning agents, but also greatly reduce the hair loss. We can concluded that the herbal anti dandruff shampoo containing ingredients such as shikakai, Ritha, amla, lemon, linseed, henna hibiscus powder are prepared by decoction method and gives a best result to remove dandruff from scalp.

SUMMARY

The herbal anti dandruff shampoo of a prepared formulation gives a desirable effect. Totally natural ingredients may gives safer to use. Hibiscus, Henna, Neem is green herbs gives a conditioning, shiny and antibacterial activity for hair growth treatment, also reduces hair fall. In this shampoo a best result obtained.

Shikakai, Ritha is used as soap nut or detergent, Ritha is best natural foaming agent. Gives smooth and shiny effect on hair. Lemon is powerful anti dandruff agent, natural cleanser and PH modifier. Linseed powder extract used as sequestering agent.

Amla has an antiseptic activity which may improve the stability of the formulation, hence we used decoction of amla as base. Amla

decoction may be better alternative for the commonly used aqueous base.

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