

Formulation and Evaluation of Poly Herbal Hair Oil- An Economical Cosmetic

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ABSTRACT:

Herbal formulations always have activity and comparatively lesser or no side effects with synthetic. The growth activity in a concentration range for 1-10% separately. Based on these results mixture of crude drugs fruits of *Embelica officinalis*, flowers of *Hibiscus rosasinensis*, leaves of *Bacopamonnieri* and seeds of *Trigonella foenumgraecum* were prepared in the form of herbal hair oil by boiling cloth method and were tested for hair growth activity, refractive index, acid value, saponification value. It holds the promise of potent herbal alternative for synthetic hair oils. Excellent results of hair growth were seen in formulation prepared by boiling method of oils preparation technique.

Key words: pH, Refractive index, saponification value, acid value.

I.INTRODUCTION

Hair is one of the vital parts of the body considered to be protective appendages on the body and accessory structure of the integument along with sebaceous glands, sweat glands and nails. Hair loss is a dermatologic disorder, and the surge for discovering natural products with hair growth promoting potential is continuous. Each hair grows in three cyclic phases viz., anagen (growth), catagen (involution) and telogen (rest). The anagen phase can be as short as 2-6 years. In the catagen phase, the growth activity increases and hair moves to the next phase, catagen phase is between 2-3 weeks. The telogen phase is a state at which the hairs move into resting state. This phase lasts for 2-3 months. In general, 50 to 100 hairs are known to be shed everyday and an increase of more than 100 constitutes a state of hair loss or alopecia. Hibiscus consists of calcium, phosphorus, iron, vitamin B1, riboflavin, niacin and vitamin C, used to stimulate thicker hair growth and prevents premature graying of hair. Brahmi contains alkaloids which enhance protein kinase activity. Methi contains high protein fodder which supply required protein nutrition to hair.

A.Plant profile:

Table.1. Emblica officinalis

Botanical Name(s)	Emblica officinalis
Kingdom	Plantae
Division	Magnoliophyta
Class	Magnoliopsida
Order	Euphorbiales
Family	Euphorbiaceae
Genus	Phyllanthus L
Species	Phyllanthus emblica L.
Popular Name(s)	Phyllanthus Emblica, Emblica, Amla
Parts Used	Fruit
Habitat	Northern and South Western



Fig.1.Emblica officinalis



Fig.2.Dried fruits of Emblica officinalis

Plant description:

Fruit are spherical in shape, light-green to yellow in color and appears to be hard in nature. Its taste is sour to bitter and acrid. The bark of Indian gooseberry, also known as Amla, is gray in color when dried and consists of feathery leaves, which smell like lemon, shape is oblong.

Chemicals constituents:

Table.2.Hibiscus rosasinensis:

Kingdom	Plantae-Plants
Subkingdom	Tracheobionta-Vascular plants
Super division	Spermatophyta-Seed plants
Division	Magnoliophyta-Flowering plants
Class	Magnoliopsida-Dicotyledons
Subclass	Dilleniidae
Order	Malvales
Family	Malvaceae - Mallow family
Genus	Hibiscus L. - Rosemallow
Species	Hibiscus rosa-sinensis L.



Fig.3.Hibiscus rosa-sinensisflowers



Fig.4.Hibiscus rosa-sinensisplant

B.Plant profile:

Rosa-sinensis, also known by the common name, Red hibiscus, is a large shrub that grows up to 4.7 m tall. This plant has a variable stature and may be upright. The leaves are arranged alternately on the branches and are ovate in shape and grow from 5 to 15 cm long. The leaves may be dark green or variegated with lighter patches and the margins of the leaves are toothed. The red flowers are very large and can be up to 15 cm long.

Chemical constituents

Hibiscus contains β -sitosterol, stigmasterol, taraxeryl acetate and three cyclopropane compounds and their derivatives. Flowers contain cyanidindiglucoiside, flavonoids and vitamins, thiamine, riboflavin, niacin and ascorbic acid.

Table.3.Bacopamonnieri

Kingdom	Plantae
Division	Magnoliophyta
Class	Magnoliopsida
Order	Lamiales
Family	Scrophuariaeae
Genus	Bacopa
Species	B. monnieri
Zoological name	Bacopamonnieri



Fig.5.Bacopamonnieri



Fig.6.Bacopamonnieriplant

Plant description:

Brahmi is the creeping herb with many branches. It grows to a height of 2 -3 feet and its branches are 10 - 35 cm long. It has oval shaped leaves that are 1-2 cm long and 3- 8 mm broad. Leaves are formed in pairs along the stems. Small- tubular, five petaled flowers are white- purple in colour. Its stem is soft, succulent, and hairy with the glands. The fruit is oval and sharp at apex.

Chemical constituents:

Bacoside A and B with A being up to 8% of the dry leaves by weight when fresh. Other Bacosides may be present in contents ranging from 1.43% (bacopaside-I) to 2.74% (bacopaside-II).

Table.4.Trigonella foenum-graecum

Kingdom	Plantae
Division	Magnoliophyta
Class	Magnoliopsida
Order	Fabales
Family	Fabaceae
Genus	Trigonella
Species	foenum-graecum Linn.



Fig .7.Trigonellafoenum-graecumplant



Fig.8.Trigonellafoenum-graecum

Plant description:

Fenugreek, *Trigonella foenum-graecum*, is an herbaceous annual plant in the family Fabaceae grown for its leaves and seeds which are used as a herb or spice. The fenugreek plant may have a single stem or may be branched at the stem base. The leaves of the plant are small and trifoliate with oval leaflets which are green to purple in color.

Chemical constituents:

Trigogenin, neotrigogenin, diosgenin, yamogenin, gitogenin, 4-hydroxyisoleucine, vitexin, isovitexin, saponaretin, homoorientin, vicenin-1, vicenin-2 and two flavonoid glycosides quercetin and luteolin and steroidal saponins have been isolated from seeds.

II.MATERIALS AND METHODS**A.Plant Material:**

The fruits of *Embellica officinalis*, flowers of *Hibiscus Rosa sinensis*, leaves of *Bacopamonnieri* and seeds of *Trigonella foenumgraecum* were procured from local market. The various parts of plant drugs are crushed in mixer and passed through the sieve number 80. The various powder drugs were subjected to pharmacognostic studies for confirmation.

Table.5.Formulation of Constituents

S.no	Constituents	Qty (100ml)	Importance
01	<i>Embllicaofficinalis</i>	7.5gm	Vitamin C, tannins and minerals.Provides nutrition to hair and also causes darkening of hair.
02	<i>Bacopamonnieri</i>	7.5gm	Contains alkaloids which enhance protein kinase activity
03	<i>Trigonella foenumgraecum</i>	7.5gm	Contains high protein fodder for nutrition to hair
04	<i>Hibiscus rosasinensis</i>	5gm	Hair growth regulator, Steroids
05	Cocnut oil	100ml	Used as base

B.Formulation:

The hair formulations of *embllicaofficinalis*, *Bacopamonnieri*, *Hibiscus rosasinensis*, *Trigonella foenumgraecum* of each drugs were separately prepared by cloth pouch method and formulation of each drugs were prepared. The method used for carrying out these formulations was holding the individual drug into one cloth pouch mixing and boiling continuously in the oil at a temperature of 60-80⁰c for 15-20 minutes until light brown coloured solution is obtained.



Fig.9.Hibiscus rosasinensis (making powder) Fig.10.Different Constituents

C.Evaluation:**Primary skin irritation test:**

Healthy male rats, weighed 200-250g were selected for the study. When during the test period 24 hrs prior to the test. The hair from the back of each rat of 1cm*1cm was shaved areas, which could accommodate test site was cleaned with surgical sprit. 1mL quantity (5% w/w) of the herbal formulations (HO) was applied over the respective test sites of one side of the spine.

Physical evaluation:

The prepared formulations were evaluated using standard methods of physical evaluation including specific gravity, pH, refractive index; acid value and saponification value are determine. The prepared formulations were assessed for the standard test.

III.RESULTS AND DISCUSSION

The results of general characteristics, physical evaluations are summarized in Table 6& 7. Primary skin irritation test was conducted to evaluate the irritation by the prepared formulations on intact skin of rabbits. All of the prepared formulations were not showed any erythema and/or edema; this indicates that the prepared formulations were non-irritant on skin of rabbits.

Table.6.Evaluation of general characteristics

Concentration	7.5%
Colour	Greenish black
Odour	Characteristic

Table.7.Evaluation of physical parameters

Parameters	HHO
Specific Gravity	0.9431
pH	7.6
Refractive index	1.434
Acid Value	1.557
Saponification value	256

CONCLUSSION

This research provides guideline on the use of herbal ingredients on the preparation of Herbal Hair oil having minimal or no side effects. The Hair oil is medicinally important in treatments of various other diseases. For evaluating the Herbal Hair Oil various parameters are employed and the results also compared with standards.

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