

Formulation and Evaluation of Herbal Hair Oil

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Abstract: *The concept of beauty is an ancient as mankind and civilization so, they use various beauty products that have herb to look charming and young. Herbal cosmetics are now-a-days widely used by common people because of concept of fewer side effect and with a better safety and security profile. The present work was aimed to formulate lemon grass hair oil for general purpose [application in hairs] using various herbs. The formulated hair oil was evaluated. Various parameters such as viscosity, saponification value, pH etc. were determined and reported in this paper. .*

Keywords: Hair oil, Cymbopogon citratus, PH, Saponification value, Acid value, specific gravity etc.

I. INTRODUCTION

Lemongrass popularly known as citronella grass is the member of poaceae family and belongs to the genus Cymbopogon.

A strong lemongrass a predominant features of this grass, is due to high citral content in its oil. The redolence of the oil enable its use in soap, detergent, and perfumes.

It also finds an application in the pharmaceutical industry. Apart from the nutrients such as fat, protein, fibre and minerals. It also contains various bioactive compound which may be grouped into alkaloids, phenol, saponin and tannin. According to WHO, herbal medicine is considered an important part of healthcare industry by more than 'two-third population of countries.

Taxonomical classification

Kingdom	Plantae
Division	Magnoliophyta
Class	Liliopsida
Order	Poales
Family	Poaceae
Genus	Poaceae
Species	citrates



Benefits of lemongrass

- Strengthen of hair follicles.
- Thickens your hair.
- Shine your hair naturally.
- Combats hair loss.
- Eliminates dandruff.
- A rich source of iron, lemongrass assists in treating condition such as, Anaemia or other iron deficiencies which can lead to hair loss.

Representing different herb with different figures used in lemongrass hair oil.

1. Neem *Azadirachta indica* (Meliaceae)

Neem, known for its medicinal properties is an effective herb to treat hair loss. Due to its antibacterial, antifungal and anti-inflammatory properties, neem is an excellent way to combat dandruff. It helps the hair follicle to become stronger and also encourages hair growth.

Biological source: It consists of fresh leaves of the plant known as *Azadirachta indica*.

Synonyms : Hindi-nim, Malayalam-Veppa.



2. Amla

Emblica officinalis (Euphorbiaceae)

Emblica officinalis is rich in vitamin C, tannins and minerals such as phosphorus, iron, calcium which provides nutrition to hair and also cause darkening of hair.

In figure. Part used : Fruit

Chemical constituents:

Alkaloids (Phyllanthidine, phyllantine), vitamin C, Gallotannin (5%), Carbohydrates (14%), Lecture, Minerals, Phenolic acid, Gallic acid, Ellagic acid, Emblicol, Amino acid (Alanine, aspartic acid, Lysine, proline).

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Biological source :

Dried as well as fresh fruit of the plant *Emblica Officinalis*.

Synonym : *Emblica*, *Amla*.



3. Pudina Mint (*Labiatae*)

Mint is rich in natural antimicrobial and anti fungal properties, which treat many scalp issues, especially dandruff.

It prevents growth of any unwanted bacteria or infection as well on the scalp.

Biological source :

It consists dried leaves

Synonyms : *Pudina*.



4. Shatavari *Asparagus racemosus* (*Asparagus*)

Shatavari is anti-inflammatory and thus helps to soothe the scalp. This way, no inflammation due to skin irritation occurs, and this helps promote hair growth. Shatavari is an apologetic herb, thus it helps your body cope with physical and emotional stress. Stress is a main cause of hair loss.

Biological source : It consists of dried roots and leaves of the plant.

Synonyms : Shatmuli



5. Kapur (Camphor)

Cinnamomum camphora (Lauraceae)

It has anti fungal properties as well as anti-inflammatory properties which can remove dandruff. Camphor help disinfect your hair.

If have been struggling with hair lice, camphor can work magic on your hair and kill all lice and Clean your head.

Synonyms : camphora.



6. Brahmi

Bacopa monnieri (Scrophulariscae)

Bacopa monnieri is small herb with purple flower. It grows in wet and Sandy areas and near the stream in tropical regions. It is creeping herb with numerous branches and small fleshy, flowers and fruits appears in summer. The stem and leaves of the Plant are used in figure:

Part used: Whole plant.

Chemical constituents:

Alkaloids (Brahmin, Herpestin), saponins (Monnieri, Hersaponin), betulic acid, etc.

Biological source :

It consist of fresh leaves and stem of the plant known as Bacopa monnieri.

Synonym : Bacopa, Brahmi.



7. Til oil *Sesamum indicum* (Pedaliaceae)

Sesame oil for hair promote good scalp health and encourages hair growth.

Sesame oil has vitamin E, B complex and minerals such as calcium, magnesium, phosphorus and protein that strengthens hair from the root and deeply nourishes.

Biological source :

It is fixed oil obtained from the seeds of *Sesamum indicum*.

Synonyms : Teel oil.



II. MATERIAL AND METHODS

Collection of plant part

For the preparation of lemongrass hair oil various plant material were collected Viz, Lemongrass, Neem, Amla, Pudina, Coconut oil, Shatavari, Kapur, Brahmi, Til oil etc.

Formulation of lemongrass hair oil

The various ingredients used in the formulation of lemongrass hair oil in table 1. Accurately weigh dried leaves and stalks of lemongrass and other herbs such

as, Neem, Amla, Pudina, Shatavari, Kapur and Brahmi were grinded in the mixture and was mixed in 2ml of til oil. The above content was boiled for 15 min. and was filtered through muslim cloth. To the filtrate coconut oil was added to make up the volume. Finally small amount of color and flavouring agent was added to the oil and it was placed in amber colored bottle.

Table 1: Ingredients used in lemongrass hair oil

Sr No.	Ingredients	Quantity
1	Lemongrass Powder	1 gm
2	Neem Powder	2 gm
3	Amla powder	1 gm
4	Pudina powder	1 gm
5	Shatavari powder.	1 gm
6	Kapur powder	1 gm
7	Brahmi powder	2 gm
8	Til oil	2 ml

Evaluation of lemongrass hair oil

The formulated lemongrass hair oil was subjected to physical and biological evaluation.

Sensitivity test

The prepared lemongrass hair oil was applied on 1 cm skin of hand and exposed to sunlight for 45 min.

Acid value

preparation of 0.1 molar solution : weighed 0.56g KOH pellets and dissolved in 100 ml of distilled water and stirred continuously. The prepared 0.1 molar KOH solution was filled in a burette. Preparation of sample: Measured 10ml oil and dissolved in 25ml of ethanol and 25ml of ether mixture and shaken. Added 1ml of phenolphthalein solution and titrated with 0.1 molar KOH solution .

Saponification value

Accurately weighed 1ml of oil into a 250ml of conical flask and 10 ml of ethanol:ether mixture[2:1] was added . To this flask 25ml of 0.5N of 0.5 N alcoholic KOH was kept the flask for 30 min. and the flask was cooled. The cooled solution was titrated against 0.5 N HCL using phenolphthalein indicator. Similarly the blank titration was performed without taking oil [sample] . Amount of KOH in mg used in calculated.

PH

The PH lemongrass hair oil was determined using PH meter.

Viscosity

The viscosity was determined using ostwalds viscometer.

Specific gravity

Take the specific gravity bottle, rinsed it with distilled water, dry it in oven for 15 minutes , cool, closed it with cap and weight it, Now fill the same specific gravity bottle

with the sample and closed it with cap and again weigh it . Determine the weight of sample per millimeter by subtracting the weight.

III. RESULT AND CONCLUSION

Lemongrass hair oil provide numerous essential nutrients required to maintain normal function of subcutaneous glands and promotes natural hair growth. hair oil is one of the most well organized hair treatment. he lemongrass hair oil prepared from various herb given in table. The various parameters like sensitivity test, viscosity, ph, irriatation test, saponification value and acid value of lemongrass hair oil was evaluated. then use of bioactive ingredients in cosmetic formulation have valuable effect on body features and provide nutrients which are essential for maintaining healthy and beautiful hairs. At least it can be concluded that, this lemongrass hair oil formulation has significant quality.

Table 2: Role of herbs in lemongrass hair oil

Sr. No.	Ingredients	Importance
1	Lemongrass	Antibacterial activity
2	Neem	Antimicrobial
3	Amla	Hair growth
4	Pudina	Flavouring agent
5	Shatavari	Hair growth
6	Kapur	Stimulating agent
7	Brahmi	Nervine tonic
8	Til oil	Vehicle

Table 3: Evaluation of lemongrass hair oil

Evaluation parameter	Inference
Sensitivity test	Non sensitivity
Irritant test	Non irriatant
PH	6.4
Specific gravity	0.95
Saponification value	196.05
Acid value	4.6
Colour	Yellowish brown
odour	Aromatic

REFERENCES

- [1]. Banerjee, P.S., Sharma, M., Nema, R.K. 2009. Preparation, evaluation and hair growth stimulating activity of herbal hair oil. Journal of Chemical and Pharmaceutical Research, 1(1): 261-267.
- [2]. Mithal, B.M., Shah, R.N. 2000. A Hand Book of Cosmetics. 1st Edition, 141-142.
- [3]. Singh, R.M. 1996. Indian Pharmacopoeia. Government of India, Ministry of Health and Family Welfare, Published by, The Controller of Publication, Edition, Vol. II.
- [4]. Arakawa T, Emoto K, Utsnomiya S, Hagiwara Y, Shimi-zu T. Effect of Swertinogen in hair growthwith special reference to its activities on skin function. J Exp Med 1962; 9:37-59.

- [5]. Adhirajan N, Ravi Kumar T, Shanmugasundaram N, Babu M. In vivo and in vitro evaluation of hair growth potential of *Hibiscus rosasinensis*, Linn. *J Ethnopharmacol* 2003; 88:235–9.
- [6]. Han A, Mirmirani P. Clinical approach to the patient with alopecia. *Semin Cutan Med Surg* 2006;25:11–23.
- [7]. Bagatell C, Bremner WJ. Androgens in men – uses and abuses. *Med* 1996; 334:707–15.
- [8]. Olsen EA. Androgenetic alopecia. In: EA Olsen, ed. *Dis-orders of Hair Growth: Diagnosis and Treatment*. New York: McGraw Hill, Inc; 1993: 257–87.
- [9]. Takahashi T, Kamiya T, Yokoo Y. Proanthocyanidins from grape seeds promote proliferation of mouse hair follicle cells in vitro and convert hair cycle in vivo. *Acta Derm Venereol* 1998; 78:428–32.
- [10]. Adhirajan N, Dixit VK, Gowri C. Development and evaluation of herbal formulations for hair growth. *Indian Drugs* 1999; 38:559–63.
- [11]. Roy RK, Thakur M, Dixit VK. Effect of *Cuscuta reflexa* Roxb, On hair growth in albino rats. *Indian Drugs* 2006; 43 (12): 951–6.
- [12]. Lipi, P., Suryaprakash, B. N., & Pande, M. S., Development and evaluation Of herbal formulation of hair growth, *E-journal Of chemistry*, vol-5, No. 1 Jan 2008, 34-38.
- [13]. Daniel, M., *Medicinal Plants Chemistry and Properties*, Oxford and IBH Co. Pvt. Ltd., New Delhi, 2006: 123.
- [14]. Kokate C K, Purohit A P and Gokhale S B, In; *Pharmacognosy*, 19th Ed., Nirali Prakashan, Pune, 2002,
- [15]. Wagner H, Bladt S, Zgainski FM. *Plant drug analysis* Verlag, Berlin. 1994; 291- 304.
- [16]. *Phyto-chemical Methods, A guide to modern techniques of plant analysis* 3rd edition, J.B. Harborne, Chapman & Hall, 1998.
- [17]. Shah C S, Qudry J S, *A Text book of Pharmacognosy*, 11th Ed., B.S. Shah Prakashan, Ahmedabad, 1996; 119.
- [18]. N. Sanju, N. Arun and K. K. Roop, *Cosmetic Technology*, 1st Edition, Birla Publications Pvt. Ltd, Delhi (2006) pp. 379-382.
- [19]. S. Kaul and S. Dwivedi, *Indigeneous Ayurvedic Knowledge of Some Species in the Treatment of Human Disease and Disorders*, *Int. J. Pharm. Life Sci.*, 1(1), 44-49 (2010). 20B.
- [20]. M. Mithal and R. N. Shah, *A Hand Book of Cosmetics*, 1st Edition, Vallabh Prakashan, Delhi (2000) pp. 141-142. 21R.
- [21]. Shoba Rani Hiremath *Textbook of Industrial Pharmacy*, 1st Edition, Orient Longman Pvt. Ltd., Hyderabad (2007) pp. 99-102.
- [22]. S. C. Bhatia, *Perfumes, Soaps, Detergents and Cosmetics*, 2nd Edition, CBS Publishers and Distributions, Delhi (2001) pp. 639- 641.
- [23]. *Indian Pharmacopoeia*, Government of India, Ministry of Health and Family Welfare, Published by, The Controller of Publication, Edition, Vol. II (1996).