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FORMULATION & EVALUATION OF FENUGREEK HAIR OIL

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Abstract— Bacterial skin infections are most common amongst people, requiring significant attention for treatment and to maintain healthy skin. Some herbal plant extracts have antiseptics and activity. The paper soaps were most Frequently used hand wash preparation in this article formulate poly herbal paper soap with combination of Almond and neem and evaluate their parameter The study showed that the tested paper soaps possessed May be antimicrobial properties and they can contribute to the treatment and management of skin infections Caused by bacteria if well prepared with the appropriate plant materials to target specific causative Organisms and packaged with appropriate directions for use and storage. Hand washing with soap is important because it is Proven to clean hands from germs and bacteria and chemicals Which can cause personal harm or disease. This is especially Important for people who handle food or work in the medical Field, but it is also an important practice for the general public.

KEYWORDS: fenugreek hair oil,Hair oil Herbal Preparation

INTRODUCTION: - The history of herbs and spices is as long as the history of mankind. People have used these plants since earliest times. Some herbs have the power to change our physiological functioning, they have revolutionized medicine, and created fortunes for those who grow, process and treat them, and in many cases have assumed social and religious significance. Herbs have changed the course of history and in economic term have greater importance as ingredients in food, medicine, perfumery, cosmetics and garden plants . Many medicinal herbs are also grown for a range of purposes. Chemical Composition of Fenugreek and the Antimicrobial Properties of its Seed Oil 54 Spices and herbs are used in foods to improve flavour, pungency and colour. They also have antioxidant, antimicrobial, pharmaceutical and nutritional properties. In addition to the known direct effects, the use of these plants can also lead to complex secondary effects such as salt and sugar reduction, improvement of texture and

prevention of food spoilage. The basic effects of spices when used in cooking and confectionery can be forflavouring, deodorizing, masking, pungency and colouring .Some spices such as turmeric and paprika are used more for imparting an attractive colour than for enhancing taste. Fenugreek (*Trigonella foenum-graecum*) is a short annual plant of the legume family. The name *Trigonella foenum graecum* is a Latin-Greek name because it has typical triangular flowers and is used as a common animal feed in Greece. It is found all over the world and is commonly used as a spice, condiment and medicine. To a large extent, fenugreek leaves and seeds have been used as spices all over the world. Fenugreek powder is used as a seasoning, and seed endosperm is used to fix fenugreek gum. In India, leaves and seeds are used as flavouring and flavouring agents. The seeds have a strong aroma and bitter taste. The main chemical components found in fenugreek seeds are galactomannans' (fibre), osapogenin, triamcinolone (alkaloid) and 4-hydroxyisoleucine, which has anti-diabetic properties, Can also be used to treat breast cancer and other diseases. In Africa, fenugreek is used as a supplement in the bread preparation process, and the seed ingredients of fenugreek can improve the nutritional quality of bread. In China, it was used to treat edema, while the ancient Egyptians used fenugreek to incense mummies. In addition, fenugreek is used as an anti-inflammatory antioxidant, anti-cancer agent, liver protecting, antibacterial agent and antifungal agent, as well as a medicine for the treatment of various diseases. In addition, fenugreek is also used as supplement to off-season feed and animal food.

Objective:-

To promote the hair growth and smoothness of the hair.
To supplement the hair with vital nutrients such as vitamins.
To prevent the dandruff, spit ends, and dull hair.

1. Definition of Fenugreek seed :

Fenugreek (*Trigonella foenum-graecum*) is an annual plant in the family Fabaceae, with leaves consisting of three small obovate to oblong leaflets. It is cultivated worldwide as a semiarid crop. Its seeds and leaves are common ingredients in dishes from the Indian subcontinent, and have been used as a culinary ingredient since ancient times. Its use as a food ingredient in small quantities is safe Fenugreek Illustration *Trigonella foenum-graecum* clean.

2. The History of Fenugreek :

The use of Fenugreek dates back as far as six thousand years ago. Through discoveries, Archaeologists believe this spice was used as early as 4000 BC, when remains of this herb were discovered in Tell Halal, Iraq. Fenugreek was considered to be a medicinal drug and used by the Ancient Egyptians for this purpose. They believed that Fenugreek could treat burns and induce childbirth. They also used it in mummification. The Greek physician, Hippocrates, used it as a soothing herb. Other ancient Greeks used Fenugreek as a cure for infections. The ancient Romans used it to treat fevers and respiratory and intestinal issues. They also used it to help heal wounds. During the first Jewish-Roman war, Fenugreek was mixed with boiling oil. This mixture was used to keep invaders from entering the city. Fenugreek is often served with food during Rosh Hashanah. It is believed that eating Fenugreek is symbolic for helping one to increase their blessings in the coming year. Today, India is the world's leading producer of Fenugreek, followed by Nepal, Pakistan, Bangladesh, the Mediterranean, and Argentina.

2.1. Etymology:

The English name derives via Middle French fenugrec from Latin *faenugraecum*, *faenum Graecum* meaning "Greek hay".

3. Phytochemistry: The seed is a good source of calcium, minerals, iron, β -carotene and several vitamins like vitamins A and D. It is rich source of dietary fiber. It is consisting of free amino acids; 4- hydroxyisoleucine, lysine, histidine, and arginine (25.8%), protein (20-30%), moisture (11.76%), fat (6.53%), crude fiber (6.28%), ash content (3.26%) and energy (394.46 Kcal/100 g seed). Fenugreek seeds also contains lecithin, choline, minerals, B. Complex, Phosphates, and Para-Amino Benzoic acid (PABA). In addition, the main chemical compounds in fenugreek are saponins, fenugreekine, trigonelline, coumarin, scopoletin, phytic acid and nicotinic acid. In Important chemical constituent of Fenugreek seeds including steroidal sapogenins, Diosgenin constituents has been found in the oily embryo of fenugreek seeds. There are two furastanol glycosides, F-ring opened precursors of diosgenin that have been reported in fenugreek also as hederagin glycosides. The stem of the fenugreek plant containing Alkaloids such as trigocoumarin, nicotinic acid, trimethyl coumarin and trigonelline. The fenugreek seeds also containing 28% mucilage. The stem of the fenugreek plant containing yellow color substance. Fenugreek seeds also contains, 6–7% fat and 58% carbohydrates of which about 25% is dietary fibers. Fenugreek is also a rich source of iron, containing 33 mg/100 g dry weight. It provides natural food fiber and other nutrients required in human body.

4. Scientific Classification :-

Table : Scientific Classification

Kingdom	plantae
Clade	Tracheophyte
Clade	Angiosperms
Clade	Eudicots
Clade	Rosids
Order	Fabales
Family	Fabaceae
Subfamily	Faboideae
Genus	<i>Trigonella</i>
Species	<i>T.Foenum-graecum</i>

5. Materials and methods :

Collection of plant parts : For the preparation of fenugreek hair oil various plant materials were collected viz. Fenugreek seeds, Hibiscus, Curry leaves, Black Cumin, Castor oil and Coconut oil, etc.

5.1 Fenugreek seeds :



Fig 1

Table 2 : Taxonomical classification of fenugreek

Rank	Scientific name and common name
Kingdom	Plantae
Family	Fabaceae
Subfamily	Faboideae
Genus	Trigonella
Order	Fabales
Species	T. Foenum-graecum
Biological name	Trigonella Foenum-graecum
Other names	Fenugreek seed Trigonella
Use	<ul style="list-style-type: none"> • Revives damaged hair. • Fights dandruff. • Controls scalp inflammation Adds shine and soft texture. • Prevents premature greying.

Table 3 : Taxonomical classification of Hibiscus

Rank	Scientific name and common name
Kingdom	Plantae
Family	Malvaceae
Subfamily	Malvoideae
Order	Malvales
Species	H. Rosa-sinensis
Biological name	Hibiscus Rosa-sinensis
Other names	Hibiscus arnottii Griff. Ex Mast. Hibiscus boryanus DC. Hibiscus cooperi auct.
Use	<ul style="list-style-type: none"> • Improves hair growth. • Cures dandruff and itchiness. • Prevents premature greying.

5.2.Hibiscus :



5.3.Curry Leaves :



Table No :-4 Taxonomical classification of Curry leaves

Rank	Scientific name and common name
Kingdom	Plantae
Clade	Tracheophytes
Family	Rutaceae
Genus	Murraya
Order	sapindales
Species	M. Koenigii
Biological name	Murraya Koenigii
Other names	karivepallai, karivembu, karivepaku, kadipatta
Use	<ul style="list-style-type: none"> • Help moisturize the scalp and remove the dead hair follicles. • Preventing hair loss and thinning of hair

5.4.Black Cumin :



Table 5 :- Taxonomical classification of Black Cumin

Rank	Scientific name and common name
Kingdom	Plantae
Clade	tracheophytes
Family	Ranunculaceae
Genus	<i>Nigella</i>
Order	Ranunculales
Species	<i>N. sativa</i>
Biological name	Nigella sativa L
Other names	Nigella indica, Nigella cretica Mill,

	Nigella truncate Viv
Use	<ul style="list-style-type: none"> • Hair growth and strengthen hair follicles. • Improve the overall health of your hair.

5.5.Castor Oil :



Table 6 : Taxonomical classification of Castor oil

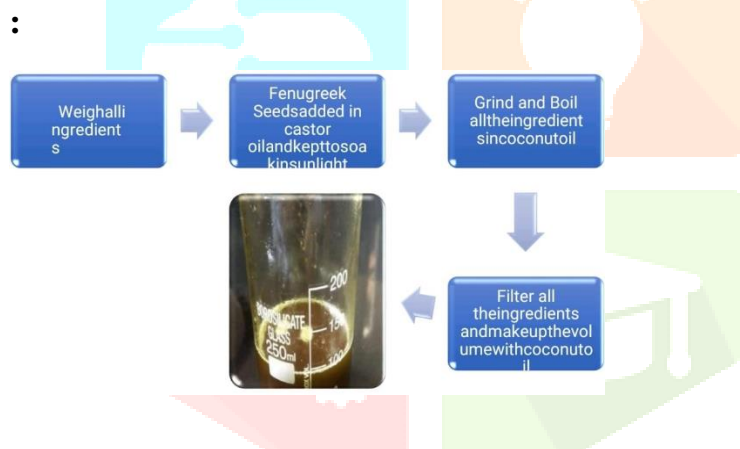
Rank	Scientific name and common name
Kingdom	Plantae
Clade	Angiosperms
Order	Malpighiales
Family	Euphorbiaceae
Subfamily	Acalyphoideae
Genus	Ricinus L.
Species	R. communis
Binomial name	Ricinus communis L.
Other Names	Castor bean
Use	<ul style="list-style-type: none"> • Hydrates and moisturizes dry scalp. • Helps in hairfall control. • Promotes voluminous hair growth.

6. Formulation of Fenugreek Hair oil :

- Different ingredients used in the formulation of herbal hair oil are presented in table.
- All the dried herbs such as fenugreek seed, black cumin, curry leaves, hibiscus, tulsi were weighed and grind in mixer and mix with coconut oil.
- Now the content were boil for 15min and filtered through muslin cloth. To the filtrate coconut oil and castor oil added to make up the volume (100ml).

Sr. no	Ingredients	Quantity(gm)
1	Fenugreek Seeds	10
2	Hibiscus	10
3	Curry Leaves	08
4	Black Cumin	10
5	Castor Oil	20
6	Coconut Oil	40

7. Process For Formulation of Fenugreek Oil :



8. Evaluation of Fenugreek Hair Oil :

The prepared oil were subjected to physical and biological evaluation.

Physical evaluation

Physical evaluation include the specific gravity, PH, and Viscosity.

Specific Gravity:

Take the specific gravity bottle rinsed it with distilled water dry it in oven for 15 min, cool , closed it with cap and weigh it(a). Now fill the same specific gravity bottle with the sample and closed it with cap and again it weigh (b). Determine the weight of sample per milliliter by subtracting the weight (a-b).

Viscosity: Viscosity were determined by the oswal's viscometer PH

Sensitivity Test: The prepared herbal hair oil was applied on 1cm skin of hand and exposed to sunlight 4-5 min.

Skin irritation Test:

The back side skin of rats was denuded with the help of electric shaver followed by hair remover cream. The denuded area was kept under visual observation for any irritation or erythema for next 24 hours, and same observation was performed after applying test sample on denuded area, except time which was extended up to 48 hours.

9. Result and Discussion :

The fenugreek hair oil are used to treat the various hair related problems. The oil was prepared with different kinds of herbs .all the herbs which have specific role in the formulation like antiandruff , antibacterial, hair growth stimulant, this all properties which help to regrowth and prevent the graying of hair. The herbal hair oil not only moisturized the scalp but also provide the numerous essential nutrients required to maintain normal function of sebaceous gland and promote natural hair growth.

7. Conclusion :

Natural remedies are more acceptable in the belief that they are safer with fewer side effect than the synthetic one. Herbal formulation have growing demand in the world market. The hair oil is medicinally important in treatment of hair related problems. The various constituents of herbal extract which may help to reduction the hair fall and regrowth the hairs. All these drugs not only show remarkable activity but are also devoid of potential side effect as compared to synthetic drugs. The oil nourish the hair after applying it act as natural hair nourisher. Due to addition of tulsi leaves it act as antiandruff hair tonic. Hibiscus helps in hair softening resulting healthy hair growth.

Another important ingredients are black cumin and curry leaves. The black cumin which act as preventing graying of hairs and curry leaves which reduces the hair loss and repair damage hair. The prepared herbal hair oil was evaluated by using evaluation test which shows satisfactory result. It was concluded that formulated herbal hair oil having good hair nourishing property.

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