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FORMULATION AND FINDING OUT THE EFFICACY OF THE HERBAL HAIR OIL OVER SIMPLE COCONUT OIL (PURIFIED) - A FORMULATION AND CLINICAL STUDY IN BANGLADESH

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ABSTRACT: Hair fall is a very common phenomenon and a matter of concern within whatever young or aged. This study is formulated a herbal hair oil and made a clinical trial over selected person under the research and development unit at Routi Herbal Limited. To see the efficacy of the experimental oil made up of Kala Jera Toil (*Nigella sativa*) Narkal Toil (*Cocos nucifera*) Amloki (*Embllica officinalis*) Henna (*Lawsonia alba*) Durba Ghas (*Cynodon dactylon*) Mathi (*Trigonella foenum-graecum*) in different concentration over the simple Coconut Oil (purified). Total 90 volunteers man and women were selected for 90 days and arranged in 3 groups, one for experimental oil recipient, one for control group another for the simple Coconut Oil (purified) recipient. And it is found that hair fall reduced to 76%, 72%, 67%, 59%, 32%, 0% on 15days, 30 days, 45 days, 60 days, 75 days, and 90 days by using of this experimental herbal hair oil. Aims of the study: To find out the efficacy of test herbal hair oil over simple Coconut Oil (purified) to reduce the hair falls.

INTRODUCTION: Hair fall is no longer a condition barred by age! 15 or 50, when most of us walk out of the shower, the drain is clogging and when we brush, we loss a huge chunks and we don't know what to do about it. Hair fall was in the earlier days attributed as a sign of aging and was a cause for a great deal of embarrassment.

But today, we no longer count by age but rather count by so very many other reasons. No matter what the cause, the embarrassment associated does not reduce even by a fraction. We hunt for a solution with great intensity. Diffuse hair shedding is the result of a disruption of one phase of the hair cycle¹,² i.e., anagen (active hair growth), catagen (involution) or telogen (resting). The anagen phase can last 2-8 years.³ The catagen phase lasts 4-6 weeks, and the telogen phase lasts 2-3 months. The exogen phase (the release of dead hair) coincides with the end of the telogen phase. Most people have about 100,000 scalp hairs; normally 10-15% of these are in the telogen phase⁴. Shedding of 100-150 telogen hairs per day is normal³.

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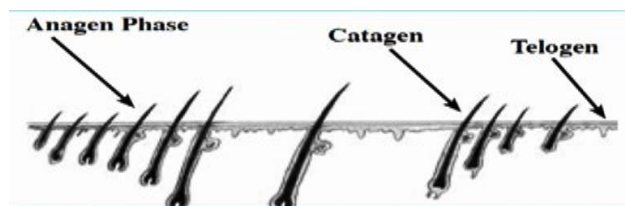


FIGURE 1: THE THREE PHASES ARE THE ANAGEN PHASE, THE CATAGEN PHASE, AND THE TELOGEN PHASE

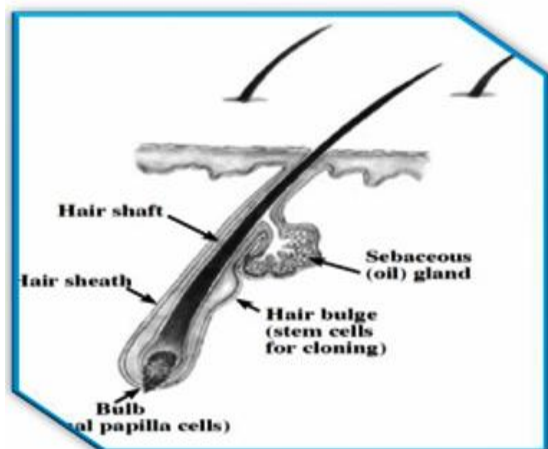


FIGURE 2: SCALP HAIR FOLLICLES TEND TO HAVE A LONGER GROWTH PHASE THAN

TABLE 1: RAW MATERIALS REQUIRED FOR THIS EXPERIMENTAL HAIR TONIC OIL.

S. No.	Local name in Bangladesh	Scientific name	Used part	Quantity
1	Kalo jera toil	<i>Nigella stiva</i>	Oil	500 gms
2	Narikal toil	<i>Cocos nucifera</i>	Oil	5 liter
3	Henna	<i>lawsonia alba</i>	Leaf	125 gms
4	Amloki	<i>Emblica officinalis</i>	Fruit	500 gms
5	Durba ghas	<i>Cynodon dactylon</i>	Whole plant	125gms
6	Methi	<i>Trigonella foenum-graecum</i>	Seed	125 gms

Method for preparation of Hair Tonic oil: All the raw materials except narikal toil (*Cocos nucifera* oil) should be dried in sun for 1-2 hours and then grinded in a mixer to make a coarse powder and soaked in 3 liters of water for 10 hours in an iron pan (koroi). Boil the content for 30 minutes. Filter the contents with the help of a fine cotton fabric. Keep the filtrate. Repeat the process three times with the materials left after filtration on the fabric. All the filtrate materials mixed well and boiled to reduce the volume to 5 liters. Then, by taking 5 liters of hair tonic as prepared above without preservative. It is heated to 100°C along with 5 liters of coconut oil. Heat the contents continuously until the water gets evaporated. It can be checked by dipping raw cotton in the liquid and burning the cotton on a flame.

EYELASH HAIR FOLLICLES

Various factors contribute to hair fall. Genetic predisposition and hormonal factors predominantly contribute to the above. Diseases state such as typhoid, malaria, jaundice etc, also cause hair fall. The use of chemotherapeutic agents also causes hair fall⁵. Management of hair fall is extremely complex. Hormone therapy use of α -reductase inhibitors, vasodilators like minoxidil are widely used to reduce the hair fall⁶. The use of some of the herbal oils is also reported to reduce the hair fall.⁷

MATERIALS AND METHOD:

Equipment: Pulverizer, Mixer, Gas cylinder, Iron & Steel vessels, Spoon, Oven, etc.

Raw Materials: Design for each 5 liters

If the cotton burns without clerking sound, it means water is removed. Two grams each of Methyl-p-hydroxybenzoate and Methyl-4-hydroxybenzoate added to the final solution as preservative. The preservative is water based only. Finally it is packed in bottles.

Use of Hair Tonic oil: The oil is applied to hair using raw cotton, on hair and left for a maximum of 24 hours, then washed with water.

Volunteer selection: Male/female subjects between 17-40 years of age group complaint with hair fall for near about three months duration was selected for this study. Subjects who are affected with recent malaria, typhoid, and jaundice excluded from the study. As same as, pregnant women, lactating mother, those who are on hormone or chemo therapy were also excluded from the study.

STUDY DESIGN: After completing the clinical compliance of each subject, the objective and other detail of the study were explained to them. All volunteers were divided into three separate groups of 30 members each group to test the efficacy of the trial herbal hair oil versus ordinary coconut oil (control group) separately. Three hundred milliliters (300ml) of the trial herbal hair oil was given to each of the volunteer and instructed them how to apply in every alternate day on their scalp (6ml/application). They are also instructed to massage the oil on the scalp smoothly for 10 minutes. The volunteers were instructed to use this hair oil in the morning after hair wash they are also advised to use this hair oil after bath. The total duration period of the study was 90 days. The volunteers were also guided not to use any shampoo wash at least 4 days prior to review by the clinical trial team. Each volunteer was reviewed by the clinical trial team. Once in 15 days during the whole trial period (90 days).

EVALUATION METHOD: The hair of all volunteers was smoothly combed by using comb (10 times) in down word direction all over the entire scalp on the starting day. All the hair collected in the comb were counted individually and examined under a microscope with the root of falling hair. Next all the hair of the volunteers were accumulated and calculated the total number of the fallen hair with root and percentage was arrived in a figure for both groups. The same procedure was repeated on the day 15, 30,45,60,75 and 90 days after using the trial hair oil.

RESULTS AND DISCUSSION:

Combing Assay Through combing assay, we have obtained a total of 390(mean=13), 375(mean=13) and 350(mean=13) from is group of volunteers designated for the trial oil and ordinary coconut oil respectively from the starting day. All the volunteers reported that they use the comb about 2-3 times in day obtaining similar number of hair during each combing the number of hairs collected by the volunteers who were using the trial oil had reduced to 302, 270, 210, 155, 105, 94 effectively on 15, 30, 45, 60, 75, 90 days respectively . On the other hand ordinary coconut oil users found their hair fall increased and that was 290, 310, 322, 332, 337, 342 drastically on 15, 30, 45, 60, 75 and 90 days respectively. Simply controlled users found their hair fall increased and that was 352, 356, 366, 369, 371, 374 drastically on15, 30, 45, 60, 75, and 90 days, that shown in the **Table 1**.

Microscopic examination revealed that 78 % [305/390] and 84 % [315/375] of hairs obtained respectively from each group of volunteers on day zero had hair roots. After test oil usage, the number of hairs obtained with hair root reduced to 76%, 72%, 67%, 59%, 32%, 0% on 15d, 30d, 45d, 60d, 75d, and 90d usage of test oil. In the case of coconut oil users the hairs with root obtained before and after usage were almost constant such as 81%, 82%, 81%, 80%, 79%, and 76% on 15d, 30d, 45d, 60d, 75d, and 90d (**Table 2**).

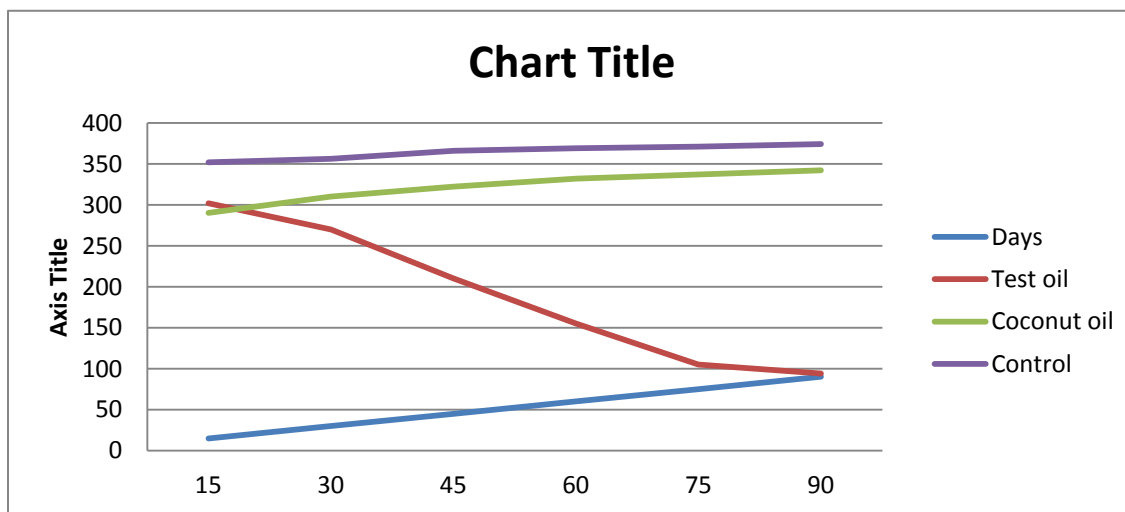
The % reduction in hair fall after using of the trial versus ordinary coconut oil is shown in **graph 1**. The % reduction in hair fall with hair root in volunteers after using of the trial versus ordinary coconut oil is shown in **graph 2**.

TABLE 2: HAIR FALL REDUCTION IN VOLUNTEERS AFTER USE OF THE TEST OR COCONUT OIL BY COMBING ASSAY

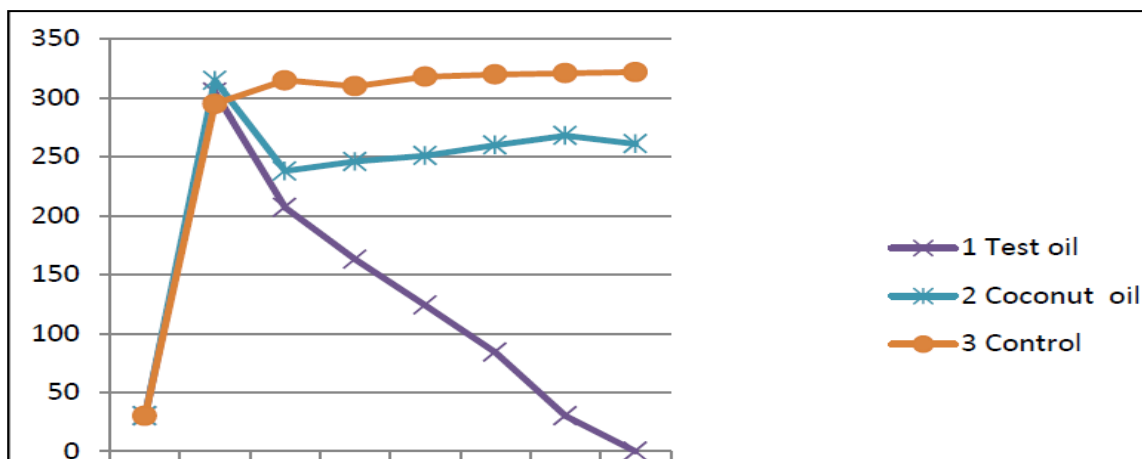
Sl. no.	Name of the sample	Number of the volunteers	Number of hair root out after using the oil						
			Before use	Days					
				15	30	45	60	75	90
1	Test oil	30	390	302	270	210	155	105	94
2	Coconut oil	30	375	290	310	322	320	337	342
3	Control group	30	350	352	356	366	369	371	374

TABLE 2: REDUCTION IN HAIR FALL WITH HAIR ROOTS AFTER USE OF THE TEST OR COCONUT OIL BY COMBING ASSAY

Sl. no.	Name of the sample	Number of the volunteers	Number of hair root out after using the oil						
			Before use	Days					
				15	30	45	60	75	90
1	Test oil	30	390	302	270	210	155	105	94
2	Coconut oil	30	375	290	310	322	320	337	342
3	Control group	30	350	352	356	366	369	371	374



GRAPH 1: % HAIR FALL REDUCTION IN VOLUNTEERS AFTER USE OF THE OILS BY COMBING ASSAY



GRAPH 2: % HAIR WITH ROOT OBTAINED FROM VOLUNTEERS AFTER USE OF THE OILS BY COMBING ASSAY. No. of Hairs with root out of total hair obtained after use of oils by Combing Assay

Clinicians often assess the ferritin level to rule out iron deficiency (particularly in menstruating women, vegetarians, and women with a history of anemia⁸⁻¹⁰) and the thyrotropin level to rule out thyroid dysfunction in women with diffuse hair loss, although the yield of such universal testing has not been proved. If the ferritin level is less than 70 mg per milliliter, iron supplementation is

recommended¹⁰. However, its effects on hair loss and re growth have not been rigorously evaluated in controlled trials; data suggestive of efficacy are limited to case series indicating cessation of hair loss and new hair growth with iron supplementation in women with low ferritin levels,¹¹ and not all case series have shown a benefit of iron supplementation¹².

Out of this corner, the present study can give a tremendous solution in the field of hair fall it can be said that hair fall is stopped.

CONCLUSION: Hair fall is very common in Bangladesh, we indented and dedicated to find some permanent solution and by the grass of Ayurveda finally we found remarkable result causing no side effect

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REFERENCES:

1. Headington JT. Telogen effluvium. New concepts and review. Arch Dermatol 1993; 129(3):356-63.
2. Kligman AM. Pathologic dynamics of human hair loss. I. Telogen effluvium. Arch Dermatol 1961; 83:175-98.
3. Paus R, Cotsarelis G. The biology of hair follicles. N

- Engl J Med 1999; 341(7):491-7.
4. Rook A, Dawber R. Chapter 1. The comparative physiology, embryology and physiology of human hair. In: Diseases of the Hair and Scalp. Rook A, Dawber R (Eds.), Blackwell Science Publications: Oxford, UK 1982; 1-17.
5. Ralf, P and George C., The biology of hair follicles, New Engl J Med 1999; 341: 491-7.
6. Ranganathan, S. and Shobana, S., Evaluation of a herbal hair oil in reducing hair fall in human volunteers, Indian Drugs, 2008; 45(6):451-455.
7. Alastair, J. J. and Wood, M. D., Treatment of hair loss, New Engl J Med, 1999; 241(13): 964-76.
8. Rushton DH, Ramsay ID, James KC, Norris MJ, Gilkes JJ. Biochemical and trichological characterization of diffuse alopecia in women. Br J Dermatol 1990; 123: 187-97.
9. Kantor J, Kessler LJ, Brooks DG, Cotsarelis G. Decreased serum ferritin is associated with alopecia in women. J Invest Dermatol 2003; 121:985-8.
10. Trost LB, Bergfeld WF, Calogeras E. The diagnosis and treatment of iron deficiency and its potential relationship to hair. 2006; J Am Acad Dermatol. 54(5):824-44.
11. Hard S. Non-anemic iron deficiency as an etiologic factor in diffuse loss of hair of the scalp in women. Acta Derm Venereol 1963; 43:562-9
12. Sinclair R. There is no clear association between low serum ferritin and chronic diffuse telogen hair loss. Br J Dermatol 2002; 147:982-4.

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