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RESEARCH ARTICLE

Formulation, Evaluation of Poly Herbal Hair Oil and Comparative Study with Marketed Products

G Chinna Reddaiah, Nagendra Babu B, Tharun D, Surekha P, Hindustan Abdul Ahad, Sai Vikas S

JNTUA-Oil Technological & Pharmaceutical Research Institute, Ananthapuramu, Andhra Pradesh, India-515001.

ABSTRACT

Now-a-days herbal cosmetic preparations are best used products by the common people in order to minimize the side effects and with a better safety and security profile. The present work is to formulate an efficient herbal hair oil with both anti-dandruff and anti-lice properties meanwhile promoting hair growth. For this we used extracted mixture of seeds and leaves of *Ricinus communis*, leaves of *Tinosporacardi folia*, leaves of *Murrayakoenigii* and seeds of *Menthaspicata* in varying compositions to produce five different formulations. All those were physicochemically and biologically evaluated for pH, viscosity, specific gravity, sensitivity test, acid value and anti-lice property. The prepared formulations were compared with leading marketed products and found that the formulations hold the promise of potent herbal alternative for synthetic (marketed) hair oil.

Keywords: Herbal extracts, anti-lice, evaluation, marketed products

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*Corresponding Author

G Chinna Reddaiah
JNTUA-Oil Technological &
Pharmaceutical research Institute,
Ananthapuramu, A. P, India-515001.
MS-ID: IJPNM3625



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1. Introduction

The appearance of hair plays an important role in people's overall physical appearance and self-perception. Herbal hair oils have always attracted considerable attention, when compared to synthetic hair oil. So there is a need for

development of herbal hair oil for potent hair growth and to prevent hair fall with no side effects [1-3]. Hence, an attempt is being made to formulate herbal hair oil from various herbs. This study aimed at reviewing the

importance of herbal hair oil for the treatment of common hair problems as baldness, alopecia, hair fall, gray hair, dryness, and most common dandruff. Herbal products gain popularity over worldwide because it is lack of side effects as compared with synthetic products [4]. In the present work leaves of *Ricinuscommunis* (castor oil), *Tinosporacardi folia* (Guduchi), *Murrayakoenigii* (Curry) and seeds of *Trigonellafoenum* (Fenugreek) and *Ricinuscommunis* were studied for anti-lice property.

2. Materials and Methods

Collection, Processing and Drying of Plant

Ricinuscommunis, *Tinosporacardi folia*, *Murrayakoenigii* and seeds of *Trigonellafoenum* (Fenugreek) and *Ricinuscommunis* were studied for anti-lice property. The plant material was collected from local market and local area except castor seeds all the herbs were cleaned to remove all the unwanted, dirt particles and then subjected to sun dried for 72 hr. The seeds were graded and freed of metallic impurities were first decorticated and then they are sun dried for 72 h. All the dried above products were then made into fine powder in order to suit for the extraction process [5-7].

Extraction process

The whole extraction process was carried out by taking weighed amounts of 50g of respective powders, through continuous hot percolation method by the aid of Soxhlet apparatus by following all the practical conditions mentioned below. Solvent selection plays an important role for the complete extraction of required constituents and for getting high percentage yield, by keeping this as a minimum methanol was selected as the solvent for the extraction of Guduchi, Castor oil, Fenugreek and Curry leaves and Castor oil& Fenugreek seeds [8].

Basic oil preparation

Dried raw coconut were purchased in the market, made into small pieces by using cutter and passed through a hydraulic press. The oil obtained from filters is used as base oil [9].

Formulation of poly herbal hair oil

The coconut base oil produce above was used for the formulation of poly herbal hair oil by adding all the extracted constituents at different compositions in order to produce five different formulations. The five different formulations of 0.1%, 0.2%, 0.3%, 0.4% and 0.5% concentrations were named as F1, F2, F3, F4 and F5 respectively (table 1)[10].

- Take 500 ml of coconut base oil in to a clean vessel and boil it.
- Add the extracts one by one in a sequence
- Boil with stirring for 1h.
- Double filtered with cloth
- Add flavoring agent (rose water)

Table 1: Formulation composition used in this study

Extracts (% w/v)	Formulations				
	F 1	F 2	F 3	F 4	F 5
Castor oil Leaves	0.1	0.2	0.3	0.4	0.5

	0.1	0.2	0.3	0.4	0.5
Castor seeds	0.1	0.2	0.3	0.4	0.5
Curry leaves	0.1	0.2	0.3	0.4	0.5
Fenugreek seeds	0.1	0.2	0.3	0.4	0.5
Guduchi leaves	0.1	0.2	0.3	0.4	0.5

Marketed products

To compare the efficacy, strength and the potential towards dandruff and lice of any sample hair oil we need an efficient and market leading branded oils. For this sake we used were M1, M2 and M3 (popular marketed brands).

Evaluation

The formulated samples were evaluated for various physicochemical parameters in comparison with marketed samples. The following are the various physicochemical parameters we had chosen for the evaluation study [11-14].

Physical appearance

The physical evaluation of the formulated hair oil formulated was observed in naked eye and the color of the formulation was found to be brownish yellow.

Sensitivity test

All the formulated samples were applied on 1cm skin of hands, lower surface of forehead and back side of ear pinna of volunteers for 24h no irritation, no allergic and no redness cases found among all the volunteers.

Density

All the formulated samples were tested for density using specific gravity bottle.

Viscosity

All the formulated samples were tested for viscosity ranges with the help of Ostwald viscometer.

Anti-Lice Activity Testing

The in vitro tests were started within 1 h of collecting the lice. A filter paper diffusion bioassay was adopted. After careful selection of lice under a dissecting microscope, Whatman filter paper No 1 discs were prepared and placed in petri dish (10cm internal diameter). Petridishes containing filter papers impregnated with the formulations and lice were covered with glass lids and incubated under room temperature (28±2°C) and relative humidity of 60±5% [15-19].

Groups: Nine groups each consisting of 10 lice were taken (Table 4 and Fig.1).

3. Results and Discussion

Extractive Values: The percentage yield with methanol was higher therefore methanolic extracts were used for preparation of oils (table 2).

Table 2: Extractive values of herbs used in the study

Drug powder	Extract (% yield)	
	Methanol	Water
Castor leaf powder	8.2	1.2
Castor seed powder	3.4	-
Curry leaves powder	6.8	0.8

Fenugreek seed powder	10.8	2.4
Guduchi leaf powder	10.6	1.8

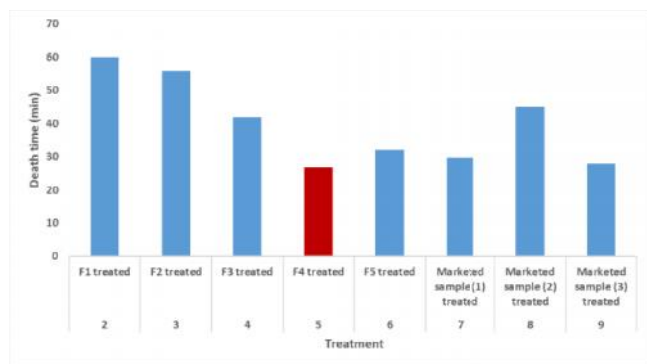


Fig.1: Anti lice activity of prepared formulations

Physicochemical parameters

All physicochemical parameters were performed for all the formulated hair oils including with the marketed hair oil products and the experimental results were tabulated below (table 3)

4. Conclusion

The present work revealed that the poly herbal hair oil formulation (F4) reflects with marketed (M3) formulation as a good hair promoter, prevents hair fall and possess to have good anti-lice property compared to all marketed hair oil which is evaluated.

Table 3: Physicochemical characteristics of prepared formulation

Formulation	Parameters					
	Physical appearance	Density	Viscosity	pH	Acid value	Sensitivity test
F 1	Light green	0.907	3.56	5.3	5.6	NI
F 2	Yellowish brown	0.908	3.76	5.3	5.6	NI
F 3	yellow	0.912	3.87	5.2	5.6	NI
F 4	Dark yellow	0.918	4.34	5.4	6.0	NI
F 5	Light brown	0.920	4.48	4.6	6.0	MI
M 1	Light yellow	0.870	6.62	5.5	5.6	NI
M 2	Colourless	0.892	5.82	5.3	6.8	NI
M 3	Light green	0.902	5.98	5.4	6.0	NI

NI = No Irritation; MI = Mild Irritation

Table 4: Groups of lice and respective treatment

Groups	treatment	Death time (min)
1	Plain coconut oil (Negative control)	-
2	F1 treated	60±2.0
3	F2 treated	56±2.5
4	F3 treated	42±0.5
5	F4 treated	27±0.5
6	F5 treated	32±1.5
7	Marketed sample (1) treated	30±0.5
8	Marketed sample (2) treated	45±1.5
9	Marketed sample (3) treated	28±0.5

All values mentioned as Mean ±S.D: Number of trails (n) =3

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