

**DEVELOPMENT OF POLYHERBAL PREPARATION FOR ALOPECIA**

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**ABSTRACT**

Alopecia which is defined as the loss of hair from the body encompasses a wide range of hair loss disorders, including alopecia areata and androgenetic alopecia. Polyherbal formulation were prepared using extract of *Tamarindus Indica* (seed coat), *Eclipta alba*, *Alium cepa* (juice), and *Eclipta alba* and *Almond peel* in *Sesame oil* (base) to obtained the best formulation. Hair growth growing time was significantly reduced on treatment with the Polyherbal oil. The hair growth-promoting activity was recorded on 10, 20, and 30 days with the formulated Polyherbal hair oil. On 30<sup>th</sup> day the reading of test group ( $201.3 \pm 1.1$ ) was compared with control group ( $87.4 \pm 1.3$ ) and standard group ( $223.3 \pm 1.0$ ).

**KEYWORDS:** Alopecia, *Alium cepa*, growth-promoting activity.

**INTRODUCTION**

Hair loss is a distressing condition for number of men and women. It is also a common & ever increasing problem in cosmetics as well as primary health care practice. Hair follicle growth occurs in cycle. It consists of a long growing phase (anagen), a short transitional phase (catagen) and a short rest period (telogen). At the resting phase, the hair falls out (exogen) and a new hair starts growing in the follicle beginning the cycle again. It is believed that in hair fall, as an unidentified trigger stimulates an autoimmune lymphocytic attack on the follicle. This inflammation is specific for anagen cycle hairs and causes anagen arrest. It has now been widely postulated that alopecia is an organ specific autoimmune disorder with genetic predisposition. Some studies have suggested that emotional trauma contributes to the appearance of alopecia.<sup>[1]</sup>

Alopecia is the medical term for hair loss or baldness. It is a health condition in which hair is lost from some or all areas of the body, usually from the scalp. Hair loss can be caused due to different reasons, such as genetic tendencies, environmental cause, exposure to chemicals, medicines, nutritional deficiency, extreme stress or long illness etc. On the basis of hair loss pattern and causes, alopecia is classified into several categories. The two major forms i.e. Alopecia areata and Androgenetic alopecia are of main concern. At present a number of synthetic remedies like Corticosteroids, dithranol, tretinoin, minoxidil, zinc, systematic Cortisone, irritants, immuno-suppressive drugs, finasteride, azelaic acid are available for the treatment of Alopecia (both Androgenetic and Areata), but not a single or multiple drug therapy is giving satisfactory and permanent results to the Alopecia patients. Besides, a number of side effects are associated with the use of these synthetic compounds, including erythema, scaling, pruritis, dermatitis, itching, etc. So to cope with the problem of Hair loss, here we have looked into the Nature's treasure and found a number of herbs with proven records for the treatment of alopecia.<sup>[2-3]</sup>

## MATERIAL AND METHOD

### Plant Material

Plant material of *Tamarindus Indica* (seed caot), *Onion* (juice), and *Eclipta alba*, *Seasme oil*, *Almond*, were collected in the month of September - October from the rural areas of Indore and was authenticated by Dr. Spana Malviya, Professor, Department of Pharmacognosy, Modern Institute Pharmaceutical Sciences, Indore. (Herbarium Submitted MIPS/Herbarium/Research/2017/18)

### Preparation of extracts

The collected crude were shade dried completely. The dried drug was then coarsely powdered. The extract was prepared by maceration method. Drug macerated in ethanol for 48 h and filtered. The collected extract was evaporated on water bath to get concentrated extract.<sup>[4-5]</sup>

### Formulation method of herbal oil

#### Sodhna

The various ingredients used in the formulation of herbal oil are presented in Table 1. Accurately weigh all the extract of herbs such as Tamarind seed coat, Bringaraj, Almond peel, onion juice, Seasme oil and were mixed together. The above content was boiled for 2hrs

and was filtered through muslin cloth. Finally the herbal oil were prepared and transferred it into the suitable container.<sup>[6]</sup>

### Formula

Each 100 ml Polyherbal oil contains

S. No.	Ingredients	Quantity
1.	Bringraj	1 gm
2.	Tamarindus seed coat	1.5gm
3.	Almond peels	0.5gm
4.	Onion Juice	5gm
5.	Seasme oil	100ml

### Experimental study design

Wister albino rats weighed about 150-200g were divided into three groups of six rats each. Animals were housed at a temperature of  $23 \pm 2^{\circ}\text{C}$  and relative humidity of 30–70%. A 12:12 light: day cycle was followed. All animals were allowed free access to water and fed with standard commercial rat chaw pellets.

Grouping of Animals

Group I: (control)

Group I : (Standard Group) Standard drug minoxidil lotion applied topically twice a day

Group III: (Test Group) Test drug (oil) applied topically once a day.<sup>[7-8]</sup>

### Hair growth activity test

The rats were divided into 3 groups of 6 rats each  $2\text{cm}^2$  area of dorsal portion of all the rats shaved area to remove all the hair. Group 1 was kept as control, where there was no drug treatment. Group 2 was treated as standard, where 1mL of (2% Minoxidil ethanolic solution) was applied over the shaved area, once a day. The animals of test group were given application of 1ml of Polyherbal oil respectively, once a day. This treatment was continued for 30 days. During the course the hair growth pattern was observed qualitatively and recorded.<sup>[9-11]</sup>

### Evaluation of general characteristics

The Polyherbal oil was brown in color with characteristic odour.

**Qualitative observation of hair growth**

Formulation	Number of Rats	Time taken to initiate the growth in days	Time taken for complete growth in days
Control (untreated)	6	10±0.54	24±1.04
Minoxidil (standard)	6	6±0.88	17±1.34
Polyherbal oil (test)	6	8±0.67	20±1.78

Value are mean ± SEM, n=6

\*P < 0.05, \*\*P<0.01 and \*\*\*P<0.001, significance versus control

Treatment	Percentage of hair follicles		
	After 10 days	After 20 days	After 30 days
Control	71±0.3	80.4±0.5	87.4±1.3
Standard	82±0.4	147.1±0.1	233.3±1.0
Polyherbal oil (test)	79±0.7	109.1±0.2	201.3±1.1

Value are percent mean ± SEM

All treatment were topical.

\*\*p<0.05 consider significant.<sup>[15]</sup>

**RESULT AND DISCUSSION**

Hair growth initiation time was significantly reduced on treatment with the Polyherbal oil. The hair growth-promoting activity was recorded on 10, 20, and 30 days with the formulated polyherbal hair oil. On 30<sup>th</sup> day the reading of test group (201.3±1.1) was compared with control group (87.4±1.3) and standard group (223.3±1.0).

**CONCLUSION**

The Polyherbal oil showed good and satisfactory result for hair initiation and hair growth activity, it also shows the remarkable improvement in the length of hair and its diameter as compared to control and standard. Hence it can be concluded that Polyherbal oil shows excellent hair growth promoting activity.

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