



International Journal of Pharmacy and Analytical Research (IJPAR)

IJPAR | Vol.14 | Issue 1 | Jan - Mar -2025

www.ijpar.com

ISSN: 2320-2831

DOI : <https://doi.org/10.61096/ijpar.v14.iss1.2025.175-179>

Research

Evaluations of Hair Growth Potential of Leaves of Butea Monosperma Lam

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	Abstract
Published on: 27 Mar 2025	<p>This research work was too formulated and evaluated to butea monosperma lam have been done. This formulation is related to herbal drug and all the herbal extract have been used in this formulation. It should be determine the quality checked by this extract. The growth of hair has been done this extract and remove the dust and hair fall on the hair. It is scalp condition on the hair. It is a quality by good nature to apply the hair. This medicinal plant extract was done to other part of the hair all the extract used in this formulation to prepared and submitted.</p>
Published by: DrSriram Publications	
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	<p>Keywords: Hair Growth, Medicinal plants, Hair Loss, Hair growth cycle</p>
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INTRODUCTION

Medicinal plants have been accumulated in the course of many centuries based on different medicinal system such as Ayurveda, Siddha and Unani. In India it is reported that traditional healers use 2500 plants species and 100 species of plants serve as regular source of medicinal preparation in the pharmaceutical industries. During the last few decades there has been an increasing interest in the study of medicinal plants and their traditional use in different use in different part of the world.

In Indian about 90% of plant materials are collected are from wild sources, many of the plants have become rare, threatened, endangered or vulnerable due to the destructive harvesting. The Ethno - botanical survey indicates that about 8,000 species of medicinal plants are used by many tribal communities for traditional medicinal preparation. About 427 ethnic communities and folk healers use around 8000 species of medicinal plants in different parts of India.

According to World Health Organization (WHO), the primary health care of 70-95% of the population in the developing countries is based on traditional medicine while in developed countries like Germany and Canada, 80% and 70% of the population respectively have used complementary and alternative medicine at least

once. Medicinal product from plants or other natural sources have taken a very large share of the healthcare market. The dependence and reliability on the herbal drugs is increasing rapidly and is growing popular.

India is place of great bio-geodiversity with its rich source of medicinal plants distribute among the different geographical and ecological environment within the country. The country has an enriched history regarding the use of traditional medicine from herbal and non-herbal sources which is well document and exhaustively practiced. The Atharva Veda, Charaka samhita and many other similar documents are compilation of the enriched folk medicine and their uses. The Ayurveda, Siddha and Unani comprising the classical systems of Indian Medicine employed a large number of medicinal plants for various ailments.

Medicinal plant still in use among the rural communities, morphological parts of the plant used, mode and method to application and indigenous folk medicinal application. Based on any new application a lead molecule of medicinal use for future can also be explored.

Hair Loss

Alopecia areata (AA) is an autoimmune disease with unclear etiology and pathogenesis which present with hair loss and can affect any hair-bearing area. Attacks of alopecia are often associated with other autoimmune condition such as lupus and allergies. In about 20% of cases, the patient is related to someone who has or has had disease.

It often presents as well demarcated patches of alopecia on skin of overtly normal appearance. Usually starts out as smooth, small, round or oval patches of baldness that rapidly form on one side of the head. The edges of the patches are usually studded with “exclamation point hairs.” Erythema of the skin can be present early on.

Alopecia areata appears as one or two bald patches on one side of the head, but also causes thinning all over the scalp. In the areas of baldness, the hairs are very short, broken and narrow. Alopecia areata has a variable course. In some cases, the bald patches regrow within a few months or a year, but sometimes, extensive patchiness develops.

Types of Hair Loss

Based on the associated condition

Atopic type: It begins early in the life and mostly (30-75%) progresses to hair loss totalis.

Autoimmune type: It is seen in middle-aged groups and is associated with autoimmune diseases, and progresses to alopecia totalis in 10-50%.

Prehypertensive type: It is seen in young adults whose parent are hypertensive and progress rapidly to alopecia totalis in 40% of cases.

Hair growth cycle

The growth of human hair occurs everywhere on the body except for the sole of the feet, the lips, palms of the hands, some external genital areas, the navel, scar tissue and apart from eyelashes the eyelids. Like skin hair is a stratified squamous keratinized epithelium made of multi-layered flat cells whose rope-like filament provide structure and strength to the hair shaft. Hair follows a specific growth cycle with three distinct and concurrent phases: anagen catagen and telogen phases. Each phase has specific characteristics that determine the length of the hair. All three phases occur simultaneously; one strand of hair may be in the anagen phase, while another is in the telogen phase

MATERIALS AND METHOD

➤ **Botanical Name:** *Butea monosperma*

➤ **Family:** Fabaceae

➤ **Scientific classification:**

Kingdom	Plantae
Division	Magnoliophyta
Class	Magnoliopsida
Order	Fabales
Family	Fabaceae
Genus	Butea
Species	Monosperma

Preparation of Extract

Leaves of plant *Butea monosperma* were dried under shade and then powdered with a mechanical grinder. The powder was passed through sieve No. 40 and stored in an airtight container for further use. The solvent used were ethanol and water. The *butea monosperma* leaves were collected local area were washed, air dried at room temperature, pulverized and stored in airtight container until required. 100 gram of powered material was soaked in 500 ml of 70% ethanol and stirred intermittently for 48 hours at room temperature. The material was filtered using sterile cotton wool and whatman (No.1) filter paper; the residue was re- suspended in the same amount of solvent and then filtered three more time. The filtrates obtained were dried at room temperature under the electric fan to obtain a crude extract. The extracts were stored in airtight container at 4°C until needed.

Preparation of Extract

Preparation of extracts by continuous maceration method using following solvent

- Water
- Ethanol

Phytochemical Studies**Tests for carbohydrates and Glycosides by**

- Molisch test
- Fehling's test
- Benedict's test

Test For Alkaloids by

- Mayer reagent
- Dragondroff's reagent
- Wagner's reagent

Test for Saponins

- Foaming test

Test for Glycosides

- Liebermann's test
- Modified Borntrager's test
- Keller- kilani test

Test for Phenols & Tannins**Test for Protein**

- Millon's test
- Biuret test

Test for Steroide

- Salkowaski Reaction

S.No	Phytochemical Tests	Observation	Inferences	
			Ethanolic extract	Aqueous extract
1	TEST FOR CARBOHYDRATES: ➤ Molisch's Test: Crude extract was mixed with 2 ml of molisch reagent and the mixture was shaken properly. After that, 2 ml of concentrated was poured carefully along the side of the test tube	A violet ring at the interphase was observed	Present of carbohydrates	Present of carbohydrate
	➤ Fehling's Test: Equal volume of fehling A and fehling B reagents was mixed together and 2 ml of it was added to crude extract and gently boiled.	A brick red precipitated appeared at the bottom of the test tube.	Indicated the present of carbohydrates	Indicated the Present of carbohydrate
2	TEST FOR ALKALOIDS: ➤ Mayer's Test: To 1 ml of extract, 1 ml of mayer's reagent was added.	Whitish yellow or cream colored precipitate was observed.	Indicates the absent of alkaloids	Indicate the present of alkaloids

	(Potassium mercuric iodide solution)			
	> Dragendroff's Test: To 1 ml of the extract, 1 ml of dragendroff's reagent was added. (Potassium bismuth iodide solution)	An orange-red precipitate was observed	Indicated the present of alkaloids	Indicated the present of alkaloids
3	TEST FOR GLYCOSIDES: > Liebermann's Test: Crude extract was mixed with each of 2 ml chloroform and 2 ml of acetic acid. The mixture was cilled in ice. Carefully concentrated H ₂ SO ₄ was added	A reddish brown colour was observed.	Indicated the absent of steroidal nucleus, I,E, glycine proton of glycoside	Indicated the present of steroidal nucleus. I,E, glycine proton of glycoside

S. NO.	Phytochemical Constituents	Ethanol (70% v/v)	Aqueous Ext.
1.	Test for carbohydrate		
	Molisch test	+	+
	Fehling's test	+	+
	Benedict's test	+	-
2.	Test for Alkaloids		
	Mayers reagent	-	+
	Dragonodroff's reagent	+	+
	Wagnor's reagent	-	+
3.	Test for Flavonoids		
	Shinoda Test	+	+

Determination of LD₅₀ of the Ethanolic and Aqueous extracts of root of *Butea monosperma* in mice by Acute Toxicity Studies

Dose Fixation

Acute topical toxicity study was done according to OECD guideline (AOT 425) on albino mice. A dose of 2000mg/kg was selected. One animal was administered a dose of 2000mg/kg on first day. The animal was observed for 24 hours. The animal showed no signs of discomfort or symptoms so, the same dose was repeated on same animal. The animal survived without any symptom. Based on the above observation, LD₅₀ of the compound was confirmed to be greater than 2000mg/kg for the prepared ethanolic extract. Any dose below 2000mg/kg could be used as a dose for animals.

CONCLUSION

The present work demonstrates that the *Butea Monosperma* Lam. extract had Hair Growth activity in mice by Testosterone induce model. From the above observation we can conclude that ethanolic and aqueous extract *Butea Monosperma* Lam possess Hair Growth activity at both the dose level which is comparable with the standard. The ethanolic extract of *Butea Monosperma* (250mg/kg) markedly the reaction time in hair Growth. The hair growth effect of both the doses (250 mg/kg) showed significant Hair Growth activity at being that 2000 mg/kg show higher Hair Growth activity. The Hair Growth activity effects of ethanolic and aqueous extract of *Butea Monosperma* may be attribute to any of are combination of chemicals present in the extract. Further studies are required to identify the acute phytoconstituent responsible for the observed Hair Growth activity effect of ethanolic and aqueous extract.

REFERENCES

1. Murugeshwaran R, Rajendran A, Kabiruddin Ahamed, Arunachalam C, Venkatesan K, Thomas B: Potential Medicinal Plants used in Ayurvedic system of Medicine, J. of Ayur. & Herb. Med., 2016; 2(4):136-145.

2. Sumenta Kumar Ghosh, Nonigopal Guria, Avijit Sarkar, Anupam Ghosh: Traditional herbal remedies for various ailments within the rural communities in the District of Bankura and Purulia, *Int. J. Pham. Sci*, 2013; 5(4): 195-198.
3. Saleh Hosseinzadeh, Azizollah Jafarikukhdan, Ahmadreza Hosseini, Raham Armand: Application Of Medicinal Plants In Traditional & Modern Medicine, *Int. J. Of Clinical Medicine*, 2015, 6, 635-642.
4. Atanaska Dinkova, Donka Kirova, Galina Gavasova, Martin Drangov, Dimitar L. Gospodinov: Case Of Alopecia Areata Originated From Dental Focus, *J. Of Imab Annual Proceeding(Scientific Paper)*, 2014; 20(5): 669.
5. Uma Agarwal, Deepa Hs, Suprabha Hegde. An Open Clinical Study To Evaluate Safty And Efficacy Of Hairzone, *Indian J. Of Clinical Practice*, 2010, 21(7): 308.
6. Prashant L Pingale, R.B.Daude, R.Y.Ghegade, S.V.Amrutkar, A Review On Alopecia And Its Remedies: *International J. Of Pharmaceutical Sciences*, 2014, 2(3), 45-52.
7. Patil Sm, Sapkale Gn, Surwase Us, Bhombe B.T., Herbal Medicines As An Effective In Hair Loss: *Research J. Of Pharmaceutical, Biological And Chemical Sciences*, 2014, 1(2), 774-776.
8. HUMAN HAIR GROWTH- WIKIPEDIA.
9. Divya Semwal, Rupali Kotiyal, Anita Chauhan, Akash Mishra, Lokesh Adhikari,: Alopecia And The Herbal Drugs, *An International J. Of Biomedicine*, 2015, 2(6) , 246-254.
10. Emin Tuncay Ustuner, Md, Cause Of Androgenic Alopecia: *International Open Access, J. Of The American Socitey Of Plastic Surgeons*, 2013, 1(7), 64.
11. <File://C:/Users/Admin/Desstop/Allmaterial/Alopeciapdf/Symptomsfoalpecia,Htm>.