



# A NOVEL HERBAL SHAMPOO USING CYNODONT DACTYLON AND PIPER BETEL LEAF: GRASS TO GLOSS

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**Abstract:** Indian Ayurveda offer numerous benefits and used from ancient time, not only for medical purposes but also for skin and hair care. One of the grasses called Cynodon Dactylon is commonly known as Bermuda grass or Durva, has various effect hairs and on widely used in Indian Ayurvedic medicine and can found everywhere. It mainly used to offer the god Ganesh. It has anti-oxidant, anti-inflammatory, anti-microbial and wound healing properties, making it effective in preventing dandruff. Another beneficial plant is piper betel leaf, which contain anti-fungal properties that help to reduce the scalp irritation. This leaf help to reduce the itchiness and make the scalp clean. Together, these ingredients not only treat dandruff but also help to prevent hair loss and give strength the hair. This study focuses over the advantages of using natural shampoos over synthetic shampoo, which can cause damage to the scalp. Synthetic actives may also damage the hair cuticle and shine of the hairs. herbal actives also give shine to the hairs. All the ingredients which are use are safe.

**Keywords:** *Cynodon dactylon, Piper betel leaf, Shampoo, Dandruff.*

## I.INTRODUCTION

Many plants are use as herbs to treat hair and skin as they have tremendous effect. These can also be use as treatments for hair and skin both. One of the fungi called Malassezia can cause dandruff. It causes flakes and itchiness to scalp and this effect to 50%- 60% of population and mostly occurs in winter. To treat this, many shampoo formulated, but most are synthetic.

A recent study said herbal shampoo can also treat dandruff; which also have cleaning properties and gives lustrous, silky effect to hairs. Many herbs proven to treat dandruff also strengthens the hairs. Herbal shampoo is more on treading compare to synthetic. As it is safe and no harm compare to synthetic. Herbal shampoo which is extract from nature such as plants, roots, flowers, fruits, and vegs. Mosly synthetic product can treat the dandruff but it can harm our scalp and one can also cause side effects but herbal is safe to use and have no side effect and treat the dandruff.

Cynodon dactylon Indian name (durva) is offer to lord Ganesha as a symbol of devotion and purity. Not only offered to the god, it can also been use in cosmetics also. It basically has many benefits and had been use in skin care in many products. In Piper Betel Leaf, it is the most cooling agents which reduces the itchiness of the scalp. This also prevent from the hair falling and help to grow healthy hairs. in this formulation, no harmful surfactant added, for foaming agent coco diethanolamine added. Which is non-ionic surfactant.

## Actives

### 1] Cynodon Dactylon

- This grass is of greenish color which has 3-5 cm of height.
- It found in tropical and subtropical region, mostly in Asia, Africa, America.
- Chemical constituent of this grass which contain saponins, tannins, triterpenoids, phenolic compounds, alkaloids, flavonoids.

Uses:

- Used in ayurveda to treat diarrhea, vomiting, fever etc.
- Use to reduce dandruff.
- Keep clean scalp.

Anti-inflammatory properties:

Its present flavonoids and terpenoids which help to reduce the inflammation (redness) from the skin. It happens due to the irritancy of the skin

Anti-microbial properties:

The grass present alkaloids and saponins which treat dandruff and help to reduce it.



Figure 1.Cynodont Dactylon

## 2] Piper Betel Leaf

Mostly has 8.5-11 cm long leaf.

Widely cultivated in southeast and southern part of Asia

Chemical constituents of piper betel leaf are chivito, chivito acetate, allyl pyrocatechol diacetate, camphene, and eugenol.

Uses:

- Also has health benefits like it helps to improve digestion.
- Used in mouth washes.
- Helps to prevent the hair fall.
- Give cooling effect to skin and scalp.



Figure 2. Piper Betel Leaf

## II.MATERIAL AND METHOD

### 2.1 Extracting actives

The actives, *Cynodon dactylon* are weighed and dried for 8 days and piper betel leaf was dried for 4 days. Then after, it was grinded into fine powder. Then it was taken for extraction process.

### 2.2 Extraction

For herbal powder extraction ethanol was used with the help of double boiling process.



Figure 3. Double Boiling Process

### 2.3 Preparation Method:

The extraction was done by double Boiling process. Extraction ratio is 2:18 which is 2g of actives and 18 ml of ethanol. 2 test tube were place in water bath for 1 hour. Temperature should be between 60-70degree. Then it was filter with the help of filter paper. And then it was store in a glass container.



Figure 4.Extraction of Piper Betel Leaf



Figure 5.Extraction of Cynodon Dactylon

### 3.Formulation

**Table 1. Formulation**

Sr.No	Ingredients	Range
1	Cynodon dactylon extract	1.5ml
2	Piper betel leaf extract	1.5ml
3	Coco diethanolamine	4.5ml
4	HPMC	2g
5	Sodium chloride	0.03
6	Glycerin	2ml
7	Ascorbic acid	0.48g
8	Water	8ml
9	Sodium Benzoate	0.1

#### Procedure:

- Take 2g of HPMC and add warm water and keep 1hr to swell.
- Then take another beaker and add extract, sodium chloride, ascorbic acid, and glycerin.
- Then add surfactant (coco diethanolamine).
- Lastly add preservative and stir it properly.



Figure 6. Anti Dandruff Shampoo

**Application procedure:**

Take the required amount of shampoo and dilute it in water and later apply it on wet hairs. Massage well. Wash off with plain water.

**III. RESULTS AND DISCUSSION****Table 2. Appearance Table**

Parameter	Initial Observation
Color	Greenish
Transparency	Opaque
Consistency	Smooth, viscous
Phase separation	Stable foam
pH	6.5

The herbal shampoo enriched with Cynodon Dactylon (Durva grass) and Piper Betel Leaf extracts. Has natural cleansing and soften the hair. It did not include any harmful surfactant and parabens, which will not irritate the scalp. Have suitable pH which maintain the scalp health. Help to reduces the dandruff and reduce the itchiness of the scalp.

#### IV. REFERENCES

- [1] Revati R Deshmukh, Riya S. Saundane, Pruthviraj Karale, Ravikant Sutar, Asst. Prof. Shivraj Dhage (June 2024) Study The Antimicrobial Activity Of Cynodon Dactylon (L.) Pera. (Leaves).
- [2] P.K.Mane, Aniket Dangare (2020) Herbal Face Wash Gel Of Cynodon Dactylon Having Antimicrobial , Anti-Inflammatory Action
- [3] Paia Khaton And Shonkor Kumar Das(2020) Medicinal And Versatile Uses Of An Amazing Obtainable And Valuable Grass : Cynodon Dactylon.
- [4] Aditya S. Ausekar , Dr Mrunal K. Shirsat, Dr. Santosh R Tarke, Mrs. Gitanjali C. Chavan, Shubhangi S. Nilkanthe. (2023) Formulation And Evaluation Of Herbal Gel Of Cynodon Dactylon [Durva] For Wound Healing.
- [5] Vasanthan.A, Senthil Kumar K.L, Gokulan P.D, S.Anjali.A.Jeevadarshini, K.Prabha (2025) Formulation And Evaluation Of Herbal Anti-Dandruff Shampoo By Using Albizia Amara And Cynodon Dactylon Powder
- [6] Shreya Kothrai, Kalpana Patidar, Rakesh Solauki (2018 )Polyherbal Anti-Dandruff Shampoo. Basic Concept Benefits, And Challenges Asian Journal Of Pharmaceutics.
- [7] Prof. Dr. Ali Esmail Al-Snafi (2016) Chemical Constituents And Pharmacological Effects Of Cynodon Dactylon- A Review
- [8] Patel S, Sharma V, Chauhan NS, Thakur M, Dixit VK (2015). "Hair Growth: Focus On Herbal Therapeutic Agent". Currdrug Discov Tech; 12:1-22.
- [9] Shinde Pr, Tatiya Au, Surana Sj (2013). "Formulation Development And Evaluation Of Herbal Antidandruff Shampoo". Into J Res Cometsci; 3:25-33.
- [10] Mahendran S, Noor Dinha (2016). "Formulation And Evaluation Of Herbal Shampoo Containing Rambutan Leaves Extract". Into J Pharm Bio Sci; 7:146-51.
- [11] Fernandez E, Martínez-B, Armengol R, Barba C, Coderch L (2012). "Efficacy Of Antioxidants In Human Hair". Jphotochemphotobiol B; 117:146-56.
- [12] Kumar A, Mali Rr (2010). "Evaluation Of Prepared Shampoo Formulations And To Compare Formulated Shampoo With Marketed Shampoos". Int J Pharm Sci; 3:120-

