



## REASERCH ON FORMULATION AND CHARACTERIZATION OF ANTI-DANDRUFF SHAMPOO USING CARPAINE ALKALOID

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### ABSTRACT:

Herbs and herbal products are well known for their medicinal use and therapeutic value by using various Technology and methods it is possible to formulate many products using herbs. Herbs are not only limited for their medicinal use but also widely used in a Cosmetic science. By using Papaya Leaves extract an anti-dandruff shampoo is made. As papaya have many of its medicinal use such as its leaves in thrombocytopenia. Papaya juice is used in a dengue, fever, etc. and many other uses beside this we can use papaya leaves extract in anti-dandruff shampoo.<sup>1</sup>

**Keywords:** Anti-dandruff, Carpaine, Shampoo, Papaya leaves.

### INTRODUCTION:

Nowadays many people face the problem of dandruff and to solve this problem people often use the chemical based shampoo no doubt which reduces the dandruff but it increases the hair fall and makes the hair texture rough. To overcome this problem of hair fall by chemical based shampoos we have prepared natural herbal based shampoo using Papaya Leaves the reason behind of using Papaya Leaves that it contains the alkaloid such as carpaine which is helpful in removing dandruff from hair scalp and it also promotes the growth and give a Shiny appearance to hairs. As the anti-dandruff shampoo was prepared using the natural ingredients herbs it has less side effects and prevents dandruff.<sup>1</sup> Malassezia furfur (Pytirosporum ovale) found on human skin flora (75% to 98%) played vital role in pathogenesis of dandruff. Cutaneous Malassezia fungus requires external source of lipids (saturated free fatty acids) for its survival and therefore converts the sebum into fatty acids via oxidation of triglycerides by stimulating lipase enzyme, which accelerates hyperproliferation of keratinocytes. The accumulation of excess unsaturated fatty acids, such as oleic acid, on the skin causes skin irritation which leads to dandruff.<sup>2</sup>

### MATERIAL:

Table no. 1 list of ingredients used in formulation

SR. NO.	INGREDIENTS	CATEGORIES
1	Sodium lauryl sulphate	Foaming agent
2	Castor oil	Moisturizer and hair growth
3	Acacia	Emulsifying agent
4	Methyl paraben	Preservative
5	Citric acid	Buffer
6	Carpaine	Anti dandruff agent
7	Glycerin	Moisturizer

**DRUG PROFILE :**

## PAPAYA LEAVES EXTRACT -



Fig no. 1 papaya leaves extract

Biological source : carica papaya <sup>10</sup>

Family : caricaceae

Chemical constituent : carpaine alkaloid , papain

Uses : 1. Remove dandruff from hair scalp.

2. Provides hair growth.

## SODIUM LAURYL SULPHATE -



Fig no. 2 Sodium lauryl sulphate

Chemical constituents : Sodium alky sulphates

Uses : It is used as surfactant.

## CASTOR OIL -



Fig no. 3 Castor oil

Biological source : *Ricinus communis* L.

Family : Euphorbiaceae

Chemical constituent : ricinoleic acid, linoleic acid, oleic acid

Uses : 1. It provides shiny appearance to hairs.  
2. It prevents hair loss.

ACACIA -



Fig no. 4 Acacia

Biological source : *Acacia Senegal*

Family : leguminosae

Chemical constituents : phenolic compounds, tannin

Uses : It is used as emulsifying agent.

## METHYL PARABEN -



Fig no. 5 Methyl Paraben

Chemical constituents : 4-hydroxybenzoate ester

Uses : It is used as preservative.

## CITRIC ACID -



Fig no. 6 Citric acid

Uses : It is used to adjust the pH of shampoo.

## GLYCERINE -

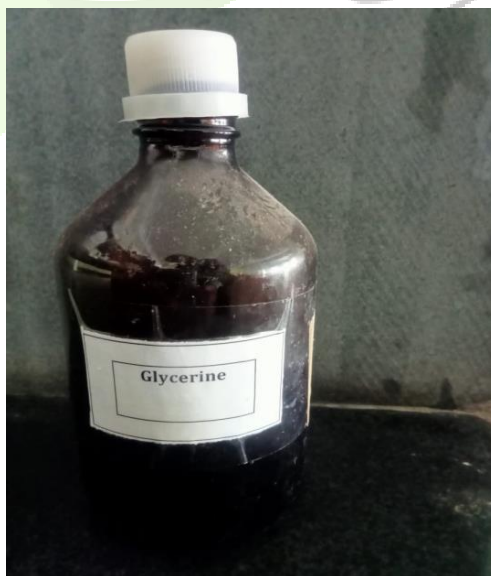


Fig no. 7 Glycerine

Uses : It provides nourishment to hairs.

## PERFUME -



Fig no. 8 Perfume (lavender flavour)

Biological source : *lavandula angustifolia*

Family : lamiaceae

Chemical constituents : linalool, linalyl acetate

Uses : It is used to provide good fragrance.

**FORMULA :**

SR.NO.	INGREDIENTS	F1	F2	F3
1	Carpaine	2g	2g	2g
2	Sodium lauryl sulphate	5g	5g	5.5g
3	Glycerine	4ml	4ml	3ml
4	Castor oil	4ml	3ml	3ml
5	Acacia	2g	2g	3g
6	Methyl paraben	2g	2g	2g
7	Citric acid	2ml	2ml	2ml
8	Perfume	2ml	1ml	2ml

**PROCEDURE :**

- 1) Collect the fresh papaya leaves.
- 2) Papaya leaves were extracted using methanol solvent.
- 3) Then identification of alkaloid by various chemical test.
- 4) Preparation of herbal extract.
- 5) Weigh all ingredients require for formulations.
- 6) Preparations of aqueous phase & oily phase.
- 7) Mixing both phases & add herbal extract stir it well.
- 8) Perform different evaluation of shampoo.
- 9) Stored in appropriate & label it.

**IMAGES:**



Fig no:7.1 Collection of Ingredients



Fig no:7.2 Extraction of papaya leaves



Fig no: 7.3 Preparation of Shampoo



Fig no: 7.4 Filling, Labelling & Packaging of Shampoo

**CHARACTERIZATION OF SHAMPOO:**

**Organoleptic evaluations -**

Colour : Creamy Brownish

Odour : Lavender

Appearance : Good

### Determination of pH -

The pH of shampoo was determined using digital pH meter. The pH obtain 6.74.

### Foaming ability and foam stability -

Foam ability was determined by using measuring cylinder (50ml) shake method 5 ml of the formulation shampoo was placed in cylinder it was covered with a hand and shaken the total volume of the foam content after 1 min of shaking recovered foam stability was evaluated by recording the foam height after 1 min and 4min is 15 to 20.



**Spreadability :** spreadability test was performed using glassslide. 1 ml of shampoo was placed on glassslide using dropper and glassslide was allowed to stand 1 -2 minutes and observe the spreadability of sample.<sup>4</sup>



**Table No. 2 Evaluation Parameter**

Sr. No.	Colour	Odour	Appearance	pH	Foaming Ability	Spreadability
F1	Creamy Brownish	Lavender	Good	5	Good	Spreadable
F2	Brownish	Lavender	Good	6.7	Good	Easily Spreadable
F3	Creamy Brownish	Lavender	Fair	6	Good	Spreadable

**Conclusion:**

Anti dandruff shampoo was prepared using papaya leaves which contain carpain alkaloid. Three batches were prepared of shampoo (f1,f2,f3) from which f2 is proves to be optimised batch by performing evaluation tests.

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