



Guava Leaves: A Sustainable Green Ingredient Of Hair Care Cosmetics

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Abstract:

Psidium guajava also known as common guava belonging to the Myrtaceae family. Their leaves accelerate follicular activities, diminish dandruff formation, strengthen hair also acts as mild cleansers. Guava leaves are fortified with bioactive composition such as flavonoids, tannins and essential oils. Guava leaves is a potential natural ingredient due to their sustainable content of favorable compounds using Psidium guajava extract in formulation of hair mask can shield hair follicles from damage, can strengthen hair follicles, reduce hair breakage. Also can assist to softer, shinier and healthy hair. Guava leaves if incorporated to hair mask stimulate hair follicles and boost hair growth. The antioxidants present in guava leaves minimize oxidative stress which can damage hair follicle and result to hairfall. Guava leaves are also sustainable because of being abundant in nature also the extraction process is environmental friendly.

Keywords- guava leaves extract, hair follicle, hair mask, antioxidant, sustainable, environmental friendly

1.Introduction

Hair mask:

Hair mask are the formulations of hair care that contributes to intense nourishment and repair. Hair mask are rich in conditioning properties and are more concentrated than conditioners. Hair mask penetrates deeper into hair shaft's transferring effective intake of hydration, nutrients and revitalizing ingredients. Hair mask are solutions for major concerns such as dryness, frizz and dullness.

Guava leaves:

Guava leaves are originated from Mexico, Central America, and northern South America, and many tropical and subtropical regions. Guava is a valued crop in many countries, for their medical properties in their leaves. Guava leaves are rich in phytochemicals, and contribute to haircare. Flavonoids are the potent antioxidants that helps to prevent the hair from free radical damage. The chemical components such as Quercetin has shown capacity in suppressing 5-alpha –reductase, an enzyme associated with alopecia, also help to reduce baldness. Tannins helps to tighten hair follicles and lessen hair shedding. Guava leaves offer numerous benefits for hair health when used in a hair mask. Rich in vitamins B and C, as well as antioxidants, they help strengthen the hair follicles and reduce hair fall. The natural compounds in guava leaves improve blood circulation to the scalp, promoting healthy hair growth. Their antimicrobial and anti-inflammatory properties make them effective in treating dandruff and soothing an itchy or irritated scalp.

Additionally, guava leaves may help prevent premature graying by nourishing the scalp and maintaining the hair's natural color. Guava leaf hair mask can strengthen the roots, reduce breakage, and leave the hair looking shinier and smoother. They contain astringent properties, also are anti-microbial in nature and prevent infection like dandruff. Vitamin C is an essential factor for collagen formulation. It exhibits antioxidant properties. Guava leaves contain other polyphenols that assist overall antioxidant and anti-inflammatory properties.



Figure1-*Psidium guajava*

2. Materials and methods

2.1. Collection and Drying of guava leaves

The guava leaves were weighed precisely and were dehydrated by sunlight for about five days at room temperature. The dried leaves were then ground and then were sieved to obtain a powdered texture.

2.2. Method of extraction of extract

Extraction of the powdered guava leaves is done with water as water is easily available and gives stable extract.

2.3. Method of preparation

Powdered guava leaves extract is extracted from boiling process. In this process the extract and solvent are taken in ratio 1:10. Then the powdered extract and solvent are mixed in a conical flask. Then the conical flask is maintained in a controlled-temperature water bath. The mixture is kept at 99°C for two hours. Then it undergoes the filtration process with filter paper. Then the extract prepared is used in formulation.



Figure 2- drying of leaves



Figure 3- powdered extract



Figure 4- Filtration

2.4 Formulation of hair mask

Ingredients	quantity
Water phase	
Active	1-2%
Aqua	11-12%
Sorbitol	1.5- 2%
Polyethylene glycol – 200	1-2%
Glycerin	0.5-1%
Oil phase	
Coco butter	1.5-2%
Stearic acid	1-2%
Glycerol monostearate	0.5-1%
Cetyl alcohol	0.5-1%
Beeswax	0.1-0.5%
Isopropyl myristate	0.3-0.6%
Other	
Sodium benzoate	q.s
Essential oils	q.s

2.5.1. Procedure

Weigh accurately all the ingredients. In a beaker (B1) add oil phase and in another beaker (B2) add water phase and heat both the phases at 60-75°C. Mix both the phases with continuous stirring with mechanical stirrer. Give continuous stirring for about two minutes then transfer it into a clean container and store.



Figure 5



Figure 6

3. Conclusion

This study includes the formulation of hair mask with guava leaves the mask formulated was creamy in texture and has conditioning properties. The product formulated was convenient to put on and take off. Guava leaves extract improves hair strength and enhance hair shine. The formulation was non-toxic and non-irritable. The pH of the formulation was about 5.17, which was suitable for scalp. The high concentration of vitamin C that helps in collagen formation and also have antioxidant properties helps the hair to grow denser and their antimicrobial properties does not allow the inflammation such as dandruff grow. Hair mask should be applied for about 15 to 20 minutes. The formulation was also sustainable as the leaves of guava are found abundantly in nature and is easy to extract. In the end the study concluded was stable and impactful.

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