

## ASSESSING THE ANTI-DANDRUFF EFFECTS OF GRAPE SEED-INFUSED COCONUT OIL IN GRAPIGRASS HAIR OIL

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### ABSTRACT

Dandruff is a prevalence concern in today's world, with numerous treatments available on the market, although many offer only temporary relief. Its severity can vary from mild flaking and dry skin to more severe scalling. *Malassezia* is a often identified as the primary culprit behind dandruff. However, environmental factors such as changes in humidity, seasonally or emotional stress can also contribute to its onset. An innoviative approach has been taken to develop an all natural anti- dandruff hair oil containing *Vitis vinifera*, commonly known as Grape seed. *Vitis vinifera* serves as a potent natural antifungal agent, proving more effective than many other commercially available hair oils. An evaluation of this herbal formulation across varios aspects has reaffirmed its effectiveness, making it a promising altherness that comes without any associated side effects.

**KEYWORDS:** Herbal Hair oil, Dandruff, Grape seed, *Malassezia*, Anti- fungal.

### INTRODUCTION

Dandruff is a common scalp condition characterized by the excessive shedding of dead skin cells. Its Origin can be traced back to the Anglo – Saxon word “tan” meaning “tetter” and

“Frogs” meaning “dirty”. It affects people of all ages and is a non – contagious hair issue. Among 80 males, 521 (65.1%) experience dandruff, with the highest prevalence in the age group of 21-40. Globally, Approximately 55% of the population grapples with dandruff. Dandruff is also historically referred to as pityriasis capitis.

While its main cause isn't always apparent, factors contributing to dandruff include oily scalp, poor hygiene leading to fungal infections, extended periods between hair washes, excess androgenic hormones, excessive sebaceous secretion, family history, dietary factors, allergies, excessive perspiration, alkaline soaps, stress, cold and dry weather, infrequent shampooing, and poor diet.

Dandruff can be a source of hair loss and social embarrassment due to the visible symptoms it produces, including redness, flakes and itching of the scalp. Various Species of *Malassezia* such as *M.globosa*, *M.slooffiae*, *M.restricta* & *M.pachydermatitis* have been identified.

In Recent times, Natural products have gained popularity in herbal based cosmetics, especially in the context of hair care. These products come in various forms such as creams, dyes, powders and tonics drawing on knowledge from Ayurveda and herbal remedies. Herbal remedies are valued for being easily accessible, cost – effective, safe & having minimal side effects. The Market demand for herbal products is on the rise due to their natural effects and fewer side effects.

*Vitis Vinifera* has demonstrated antifungal activity against various types of Fungi. Formulations for hair care include plant species that have been traditionally used in Ayurvedic hair oils to address scalp and hair conditions. These herbal ingredients are known to contain constituents that promote hair growth and help combat dandruff. Herbal anti-dandruff hair oil combines these ancient herbs to provide a dandruff – free scalp, strengthen hair, nourish hair roots, promote natural hair growth & control issues like hair fall and thinning.

## OBJECTIVE

The main objective of using vitis vinifera hair oil against dandruff is to harness its potential antifungal activity for effectively combating dandruff. This objective includes.

1. To Evaluating the Anti-fungal Properties
2. To Developing an anti- dandruff product

3. To Ensuring Safety & Efficacy
4. To Offering a Natural Remedy
5. To give darkness of hair

Ultimately, The goal is to create a Grape based hair oil that can effectively combat dandruff by utilizing its antifungal properties while promoting healthy hair and scalp.

## **MATERIALS USED**

Grape seed, being an integral part of grapevines are distributed worldwide in regions where grape cultivation is prevalent. Grapes belong to the genus *Vitis*, and their seeds can be found in various geographical locations with suitable climates for grape growing. Some of the notable regions for grape cultivation and the presence of grape seeds include Asia, Europe, North America, South America, Australia, South Africa. Different Grape varieties and species have adapted to various climates and regions, resulting in the presence of grape seeds in numerous parts of the world.

Grape seeds typically have the following morphological characteristics.

1. Size & Shape: Grape seeds are small, usually about 1-2cm in length. They are typically ovoid or teardrop shaped.
2. Color : There are typically medium brown color.
3. Texture: The surface of grape seeds can vary, but they are often smooth and shiny.
4. Hardness : Grape seeds are relatively hard & can withstand pressure. They are known for their Durability.
5. Markings : Some grape seeds may have subtle ridges or markings on their surface.
6. Contents: Inside the seeds, there is a single embryo, Which can develop into a new grapevine if planted.

## **METHODS**

Infusing coconut oil with grape seeds is a way to create a unique oil blend that combines the properties of both coconut oil & grape seed oil . Here's a simple method to infuse coconut oil with grape seeds.

## **INGREDIENTS**

- Coconut Oil
- Grape seeds

## INSTRUCTIONS

### 1. PREPARE THE GRAPE SEEDS

- First, Make sure the grape seeds are clean and dry.
- You can fresh grape seeds or use leftover seeds from grapes you've consumed.

### 2. COMBINE INGREDIENTS

- Place the grape seeds in a glass jar or a heatproof container.
- Pour the coconut oil over the grape seeds, ensuring that they are fully submerged in the oil.

### 3. WARM THE MIXTURES

- Create a makeshift double boiler by placing the glass jar or container in a pot of simmering water.
- Heat The mixture gently, but do not let it boil.
- This allows the grape seeds to infuse into the coconut oil.

### 4. INFUSION TIME

- Let the mixture simmer for 1-2 hours, stirring occasionally.
- The longer you infuse it, the stronger the grape seeds flavour will be.
- You can adjust the infusion time to suit your taste preferences.

### 5. STRAIN AND STORE

- After infusing, remove the container from the heat and let it cool slightly.
- Strain the oil to remove the grape seeds, leaving you with grape seed- infused coconut oil.

### 6. STORE

- Transfer the infused coconut oil to a clean, airtight container,
- Store it in a cool, dark place.
- It should be Good for several Months.

This infused oil can be used in cooking, skincare or as a hair treatment, combining the benefits of both coconut oil & grape seeds oil. Adjust the infusion time to achieve the desired flavor and aroma.

## PHYTOCHEMICAL STUDIES

### Grape seed

PHYTOCHEMICALS	GRAPE SEED
Alkaloids	+
Flavonoids	+
Carbohydrates	+
Glycosides	-
Saponins	+
Tannins	+
Proteins	+
Amino acids	+
Phytosterol	-
Triterpenoids	+
Steroids	+
Resins	+
Acidic compounds	-
Catechol	+
Phlobatannins	+
Lipid / Fat	+
Reducing sugar	+
All tests were perform thrice Representation : + = present , - = Absent or not detectable	

## ANTI – FUNGAL ACTIVITY

The exact mechanism of *vitis vinifera* (Grape seed) against *Malassezia*, the fungal genus associated with dandruff and other skin condition, is not fully understood, but there are several potential ways through which grape seed components, such as proanthocyanidins and other bioactive compounds, may have antifungal effects.

### 1. Disruption of Fungal cell walls

Grape seed extraacts, including proanthocyanidins, may interfere with the struture and integrity of the fungal cell wall. This can weaken the fungal cells, making them more susceptible to damage and control.

### 2. Inhibition of Enzymes

Grape seed extracts might inhbit specific enzymes that are crucial for the growth and survival of malassezia. By disrupting these enzymatic processes, grape seed compounds could hider fungal development.

## RESULT AND DISCUSSION

As of my knowledge update in september 2021, there isn't a well- documented scientific study that directly addresses the anti fungal activity of *Vitis vinifera* against dandruff. However, Grape seed extract and grape seed oil have been studied for their potential antimicrobial and anti fungal properties. These properties might indirectly relate to addressing Dandruff. We aim to determine wheather grape seed extract can effectively inhibit the growth and activity of dandruff causing Fungi, such as *Malassezia spp*, thereby suppressing fungal proliferation on the scalp. Another key goal is to assesses the ability of grape seed extract to alleviate dandruff symptoms, including itching, flaking and redness. We aim to improve the overall conditions of scalp. Acknowledgement any limitations of the study su h as the need for further research on human subjects to confirm efficacy against dandruff. Suggest Potential directions for the future investigations.

## CONCLUSION

In this study, We explored the antifungal activity of *Vitis Vinifera* (Grape) and its derivatives against dandruff causing fungal strains, Particularly *Malassezia*. While Our in Vitro results suggests that grape seed extract or oil exhibits inhibitory effects on fungal growth, there is a need for caution in drawing direct implications for dandruff treatment at this stage. The findings from this study opens a promising avenue for further research in understanding the potential benefits of *Vitis Vinifera* in addressing Dandruff. However, it is crucial to recognize the limitations of invitro studies & the complexity of dandruff as a condition influenced by various factors including scalp health, sebum production and microbial interactions. In Future investigations should focus on Invitro studies, Clinical Trials, Mechanistic Understanding, Formulation Development.

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