

GRAPE SEED OIL: FROM A WINERY WASTE TO A VALUE ADDED COSMETIC PRODUCT-A REVIEW

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Introduction

This research focuses on grape seeds and examines its promising future as a distinct product (grape seed oil) with usage mainly in **cosmetology**.

During the last decade a **trend** towards **natural cosmetics** has been developed and therefore scientists and industry are moving towards the research of alternative ingredients that won't cause any allergies or other kinds of skin irritations to consumers.





Objectives

To encourage companies/wineries to apply value adding technologies in order to:

- **Reduce** their waste generation and disposal
- **Provide** further alternatives to diminish the environmental impact of the winery activity
- **Introduce** additional sources of income

What is grape seed oil?

- Grape seed oil is the oil which is produced from the grape seeds of *Vitis vinifera* L.

Codex Standard for named vegetable oils - Codex Stan 210-1999

- It is produced mostly in Italy, Spain, Chile, the United States, Australia and France

Grapes, seeds & oil in numbers

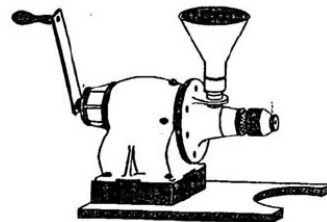
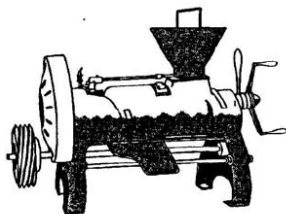
- **Grape production** is considered to be one of the most important **agro-economic activity** in the world
- More than **67 million tons of grapes** (*Vitis vinifera*) produced globally in 2012
- About **22 million tons** of them produced in the E.U.
- **Grape seeds** comprise about **5% of the fruit weight**
- **3 million tons** of grape seeds are discarded **annually worldwide**
- **Grapes seeds** contain about **14-20% of oil**
- **Few recent data** on global production of **grape seed oil**

Grape seed oil ingredients

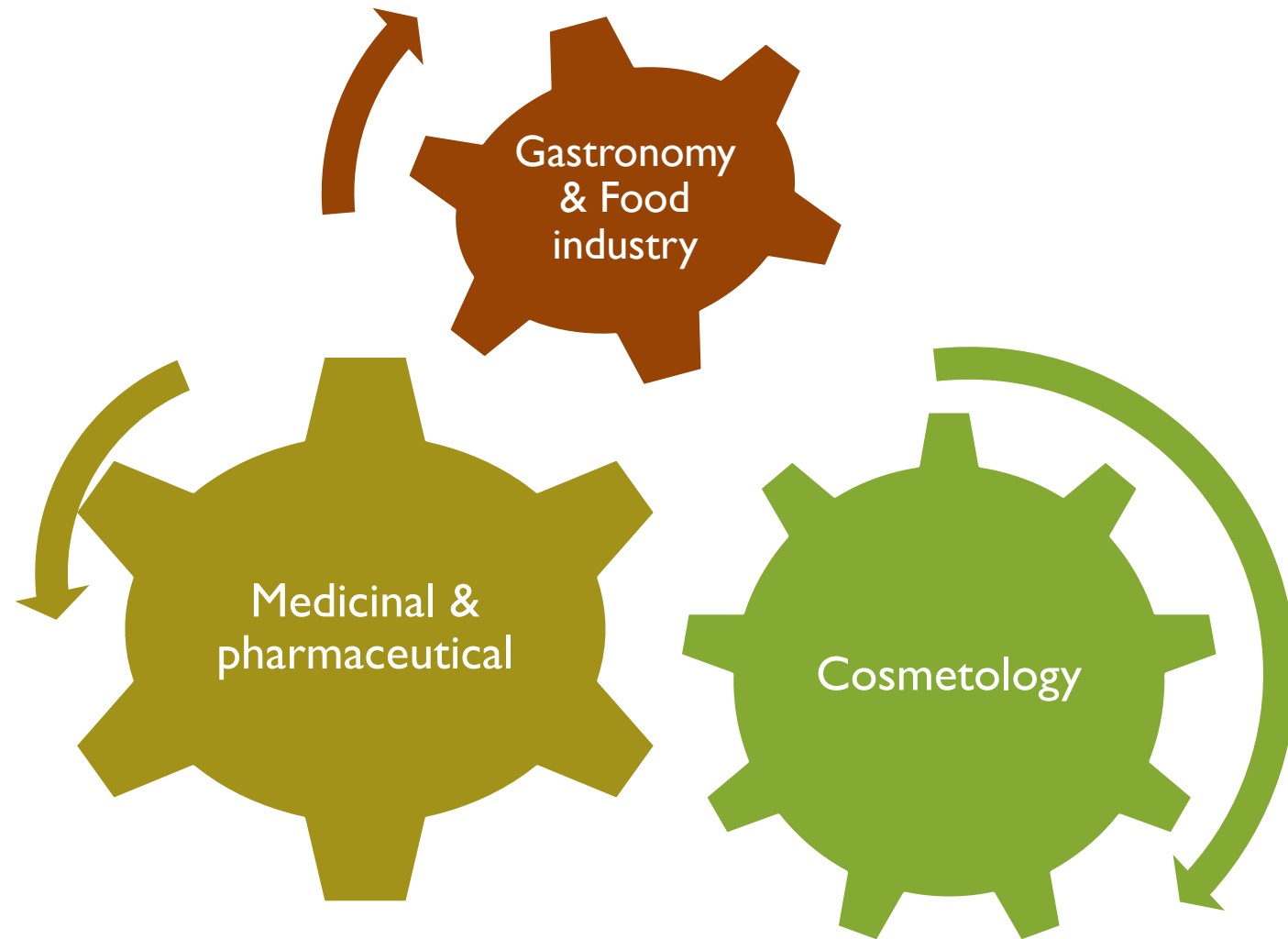
- **Linoleic acid** (65-72%)
- **Oleic acid** (12-23%)
- **Palmitic acid** (4-11%)
- **Stearic acid** (8,5-15%)
- High concentration of **tannins**
- Rich in **tocopherols**, natural antioxidants that are not biosynthesized from humans but must be taken exclusively by diet

Grape seed oil extraction

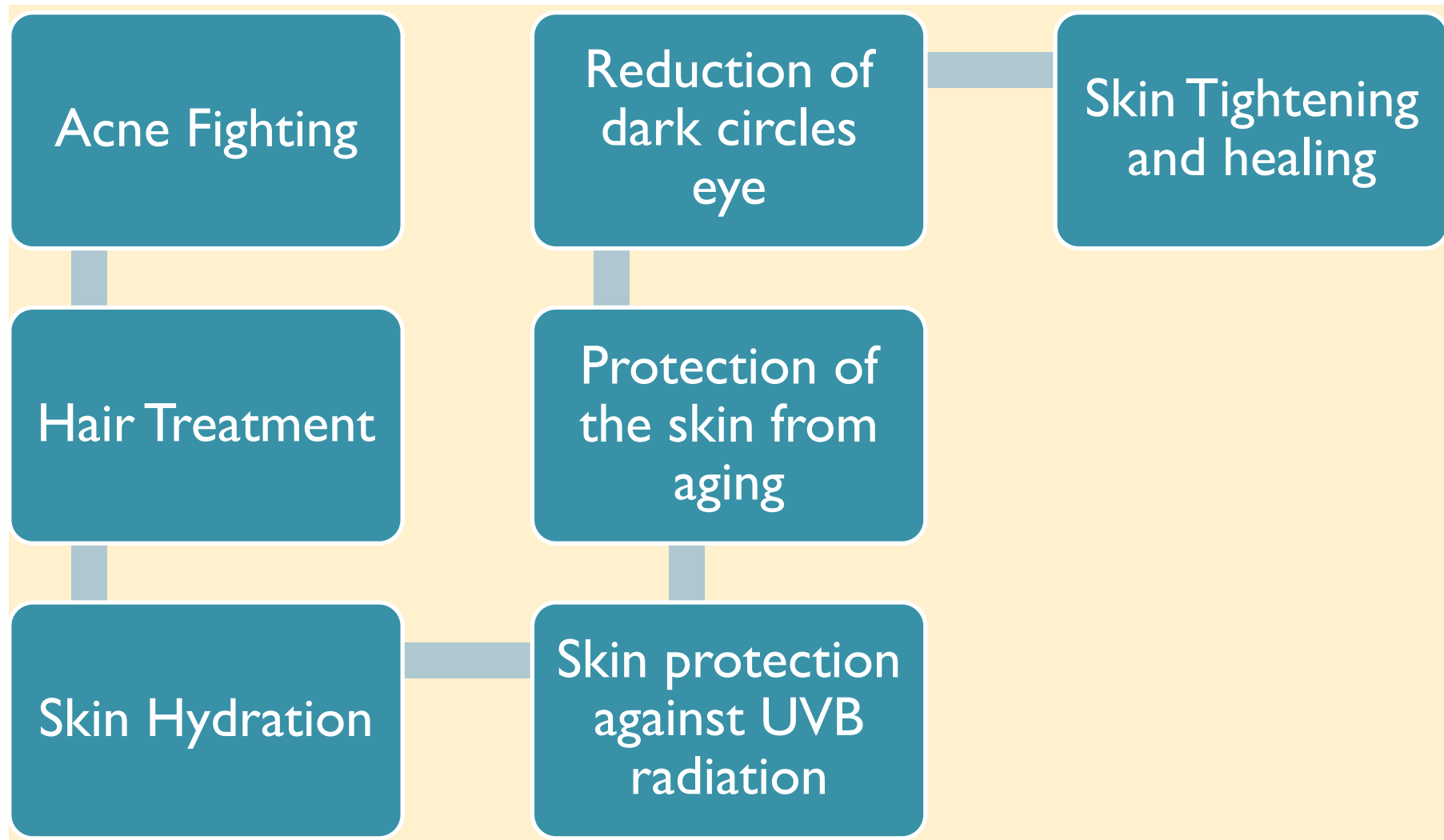
- The traditional way for extracting grape seed oil is **mechanically with oil press, expeller or even a wooden mortal**
- Advantage: obtaining a **good quality** of oil as it preserves its **natural structure**
- **Solvent extraction**



Grape seed oil applications



Grape seed oil's attributes to cosmetology



Acne Fighting

Grape seed oil offers:

- A good supply of **linoleic acid** to help strengthen cell membranes and improve skin health
- A significant amount of **antioxidant capacity** to prevent pores from clogging
- **Anti-inflammatory** properties preventing the outbreak of acne and helping any existing problems

Skin Tightening and healing

Grape seed oil:

- Has **astrigent properties**, fighting **free radicals** and helping to **firm the skin**
- **Stimulates** and **tightens** the skin due to its astringent properties
- **Reduces** swellings
- **Accelerates** the wound healing process and diminishes scars



Grape seed extract has been applied to **wounds** on the skin of animals and humans and found that wounds treated with grape seed extract healed more quickly than wounds that did not receive the extract

Reduction of dark circles eye

- Removing under eye circles is one of the largest capacities of grape seed oil
- Regular application for a week can completely eliminate the occurrence of these circles without harmful chemicals



Clinical studies were conducted using six individuals. Application of the composition was studied for a period of 10-30 days

Using visual inspections, they found that previously dark circles under patient's eyes appeared much lighter under the eye following application of the composition

Protection of the skin from aging

- Antioxidant properties contained in grape seed oil is excellent to minimize skin aging
- Fine lines and wrinkles can be reduced by the usage of grape seed oil as it provides enough moisture



According to the University Of Maryland Medical Center *'swallowing the oil is able to increase the amount of antioxidants in the blood'*

Skin Hydration

- Most types of oils can be used as a **skin moisturizer**
- Grape seed oil is very **light** so easily absorbed by the skin and does not leave any residue
- People with sensitive skin can apply the oil **without any allergic reactions**



- Patients, following treatment with grape seed oil topically, showed **no signs of allergic reaction** after using it for 22 days
- Clinical studies have shown that topical application of linoleic acid (grape seed oil) **soothes the skin** and **reduces the trans-epidermal water loss** within 48 hours



Hair Treatment

Grape seed oil has been shown to be possible alternative treatment for **Androgenetic alopecia (AGA)*** due to improved scalp blood flow

**(AGA) is the most common cause of hair loss in men and affects up to 70% of men in later life and especially those aged over 50 years*



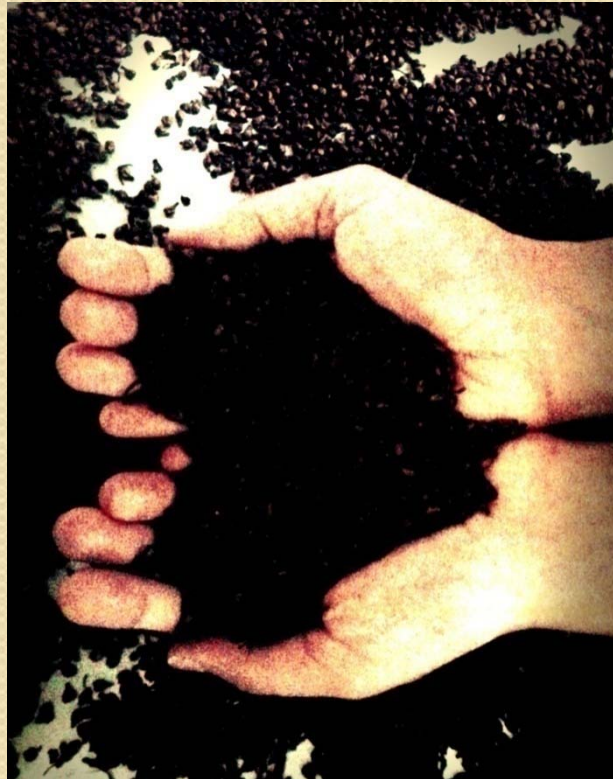
Skin protection against UVB radiation

- Protects human **keratinocytes** against the damages produced by UVB radiation due to the strong **antioxidant activity** that reduce the free radicals levels
- The antioxidant activity is mainly caused from the high concentration of **polyphenols** (proanthocyanidins, anthocyanidines, catechins)
- Grape seed proanthocyanidins have been proved to exert **skin cancer prevention** effects by inhibiting oxidative stress and protecting the immune system

Further research ongoing..

- Extraction of grape seed oil from Greek grape varieties
- Using different methods of mechanical extraction
- Examine oil content & fatty acid composition

Thank you for your attention!



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