

# **Valorization of plant extracts from local raw materials to obtain antioxidant products**

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## **Abstract**

Polyphenols occupy an increasingly important place in science due to their use in pharmaceutical and food products. These compounds have numerous beneficial properties, such as antioxidant, antiallergenic, antimicrobial, anti-inflammatory and cardio-protective properties. Most of the benefits of these compounds are due to the antioxidant effect.

The main method of obtaining polyphenols is extraction from plant sources. Thus, the thesis addresses the challenges of efficient extraction of polyphenols from less valued plant materials: corn, grape marc and flax seeds.

Therefore, the general objective of the experimental study in this paper was to optimize the methods of extraction of polyphenols from three plant materials (blackthorn, grape marc and flax seeds) in order to obtain natural extracts with applicability in the pharmaceutical and food industries.

In this paper, it is presented how the extraction yield of polyphenols is influenced by the extraction parameters. Also, data are described on how the addition of polyphenol extract to body lotions leads to an increase in the photoprotective effect of the lotion. At the same time, data are presented showing that the use of advanced extraction methods significantly increases the efficiency of the extraction process compared to conventional methods.

In conclusion, this work makes significant contributions in the field of polyphenol extraction, proposing solutions for optimizing extraction processes. The results obtained in this work can be applied in industry, contributing to the development of pharmaceutical and food products.