



HP-02: Total polyphenols, total flavonoid contents, antioxidant activity of Algerian natural and spice plant

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Subject description: Spice plants have a great influence on world history. For centuries, different civilizations have used them to condiment the foods of kings and nobles and applied them as embalming preservatives, perfumes, cosmetics, and medicines in different regions of the world. In general, these Spice plants have formed the basis of traditional medicine and some of their derived substances have been utilized to treat different human diseases.

Objectives: Carry out a comparative extraction of bay leaf, in terms of total polyphenol content and antioxidant activity, using two pieces of equipment: Ultrasonic bath and ultrasound probe.

Methods: This work uses two types of ultrasound-based extraction equipment: with bath and with probe, ethanol was used as solvent. The comparative study was based on a comparison of the content of phenolic compounds and the antioxidant properties (DPPH, FRAP, ABTS) between the two extracts generated.

Results and discussion: The highest TFC and antioxidant activity was detected in extracts obtained by ultrasound bath assisted extraction as an extraction medium and the lowest in extracts obtained by ultrasound probe extraction with 152.6 mg gallic acid equivalent (GAE) g⁻¹ for the TPC and a scavenging effect on the DPPH radical, with IC₅₀ values of 58.3 µg mL⁻¹.

Conclusion: This study proves that ultrasound bath extraction could successfully be used for extraction of polyphenols and as an alternative to the traditional method.

Keywords: Laurus Nobilis, Ultrasound bath, ultrasound probe, Antioxidant activity.