

Extended Abstract

Chemical Composition and Antioxidant Activity of Some *Lamiaceae* Spices †

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† Presented at the 16th International Symposium “Priorities of Chemistry for a Sustainable Development” PRIOCHEM, Bucharest, Romania, 28–30 October 2020.

Published: 9 November 2020

Keywords: basil; oregano; tyme; total phenolic content; essential oil

1. Introduction

Spices are widely used for culinary purposes as well as for therapeutic effects. Medicinal plants of the *Lamiaceae* family have been used for centuries throughout the world. The aerial parts of thyme (*Thymi herba*), basil (*Basilici herba*), and oregano (*Origani herba*) have a complex chemical composition represented by essential oil, phenolcarboxylic acids, flavones, and triterpenic compounds [1,2]. The above-mentioned herbal products are intensively studied due to their anti-inflammatory, antibacterian, antioxidant, gastroprotective, hypolipidemic, hypoglycemic and antitumor effects [3–5]. The aim of our work was the phytochemical screening and evaluation of the antioxidant activity of oregano, basil and thyme aerial parts acquired from indigenous manufactures.

2. Materials and Methods

Spices were purchased from a local supermarket (Bucharest) in October 2019. For phytochemical screening, qualitative (specific chemical reactions, thin layer chromatography—TLC) and quantitative assays have been used. TLC analysis has been used for the evaluation of analyzed spices essential oil compositions. Total polyphenols (expressed as tannic acid equivalents), flavones (expressed as rutin equivalents), phenolcarboxylic acids (expressed as caffeic acid equivalents), and essential oil contents were determined by means of spectrophotometric and volumetric methods. The antioxidant capacity was evaluated by means of a ferric reducing power assay. The antioxidant activity was expressed as EC50 (µg/mL).

3. Results

Qualitative analysis revealed the presence of phenolcarboxylic acids, polysaccharides, flavones, coumarines, tannins, and proanthocyanidins for all analyzed spices. TLC analysis showed the presence of linalool (for oregano aerial parts) and eugenol (for basil and oregano aerial parts). Regarding the quantitative assays, the essential oil content varied between 2% and 3.5%. Oregano aerial parts showed the highest content of phenolcarboxylic acids (0.68 g%), while basil had the highest total phenolic content (3.05 g%). The flavones content decreased as follows: oregano > basil >

tyme. The highest antioxidant capacity was found for oregano aerial parts (EC₅₀ = 0.61 µg/mL), followed by basil (EC₅₀ = 0.85 µg/mL).

4. Conclusions

Analyzed *Lamiaceae* spices are a source of bioactive compounds with antioxidant activity and can be used as an adjuvant for diseases in which oxidative stress represents a key factor.

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