



N.2 V.1
Set 2023

Proceedings of Research and Practice in Allied and Environmental Health

XVIII Colóquio de Farmácia - O
Papel da Farmácia em
Oncologia



Analytical methods for the detection and quantification of phenolic compounds in *Melilotus indicus* and *Pterospartum tridentatum*

José Pedro Cruz ^{1,2}, Ana Isabel Oliveira ^{1,3}, Patrícia Correia ^{1,3*}

¹ Escola Superior de Saúde, Instituto Politécnico do Porto, Rua Dr. António Bernardino de Almeida, 4200-072, Porto, Portugal

² Centro Hospitalar do Baixo Vouga, E.P.E

³ Centro de Investigação em Saúde e Ambiente, Escola Superior de Saúde, Instituto Politécnico do Porto, Rua Dr. António Bernardino de Almeida, 4200-072, Porto, Portugal

* pcorreia@ess.ipp.pt

Background: The use of plants for therapeutic purposes has been the result of scientific advances over the last few years. *Melilotus indicus* and *Pterospartum tridentatum* belong to the third family of flowering plants, the Fabaceae. For biological, pharmaceutical and cosmetic applications, a full characterization of the plants and their bioactive compounds is initially required. description of the theoretical framework. **Objective:** The aim of this review is to gather information, compiling the several detection and quantification methods, the phenolic compounds identified, and their quantities present in these plants. **Methods:** Literature search was carried out in PubMed, Science Direct and SciELO using isolated and combined keywords "Melilotus indicus", "Pterospartum tridentatum", "Phenolic compounds", "Detection", "Quantification", selecting studies published since 2000 that referred analytical methods for the detection and quantification of phenolic compounds in *M. indicus* and *P. tridentatum*. For *M. indicus*, three methods were found in the literature, only two of which quantified phenolic compounds. **Results:** A total of twenty-eight compounds were identified, such as catechin and dihydroquercetin, while twenty-one were quantified, namely chlorogenic and caffeic acids. The range of quantification varied from 0.2 (hesperidin) to 7630.0 (quercetin) µg.g⁻¹ dry weight. For *P. tridentatum*, eight methods were found for the characterization of phenolic compounds. A total of twenty-nine compounds were identified such as rosmarinic acid and 7-methylorobol, while twenty-one were quantified, e.g., genistein and quercetin-3-O-rutinoside. Quantification ranged from 53.2 (sissotrin) to 32200.0 (vanillic acid) µg.g⁻¹ dry weight. These studies exhibit different methods that identify and quantify phenolic compounds in *M. indicus* and *P. tridentatum* extracts, particularly high-performance liquid chromatography, and were able to identify several classes of phenolic compounds, including hydroxycinnamic and hydroxybenzoic acids, flavonols, flavones, isoflavones and flavanones. **Conclusions:** However, it is necessary to develop new methods to improve the separation, identification, and quantification of phenolic compounds.

Keywords: Detection; quantification; *Melilotus indicus*; phenolic compounds; *Pterospartum tridentatum*;