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# Revalorization of Cinnamon Leaves via a Phenolic Compound Extraction Process: An Optimization Using Box–Behnken Design †

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The cultivation of cinnamon (*Cinnamomum zeylanicum*) is one of the most important worldwide. In Mexico, states such as Veracruz and Puebla are the main producers. The bark is the main product due to its culinary properties; however, it contains bioactive compounds of interest for different industries. The cinnamon leaves contain polyphenolic compounds with antimicrobial, antioxidant, and insecticidal properties. This study aimed to optimize the ultrasound-assisted extraction process conditions for phenolic compounds from cinnamon leaves. Leaves of trees from Zozocolco de Hidalgo (Veracruz, Mexico) were utilized. A Box–Behnken design was used to determine the optimal values of the solid/solvent ratio (7–13 g/mL), temperature (20–50 °C), and time (10–30 min) factors for the recovery of total flavonoid compounds (TFCs) and total phenolic compound (TPC). Ferric aluminum and Folin–Ciocalteu reagent were used for spectrophotometric determination of TFC and TPC, respectively. According to the results, the recovery of TFC ranged from 49 to 1089 mg quercetin equivalents/g of sample (DW), with the temperature being the significant factor ($p < 0.5$). The phenolic extracts obtained were similar to those reported from other geographical regions. This study highlights the potential use of *C. zeylanicum* leaf extracts as a source of polyphenols. Furthermore, the antibacterial and antifungal activities of the extracted fractions must be evaluated.

**Supplementary Materials:** The following supporting information can be downloaded at: https://www.mdpi.com/article/10.3390/proceedings2024105012/s1, Conference Poster: Revalorization of cinnamon leaves by phenolic compounds extraction process: an optimization by Box-Behnken design.

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