

Abstract

Green-Extraction Methodologies for Recovering Bioactive Compounds from Endemic Fruits: Corcolen (*Azara dentata*)[†]

Cuesta Ramos, L., Jastrzębska, J., Dawidowicz, K., Simirgiotis, M. J., Phimolsiripol, Y., Barba, F. J. and Castagnini, J.M

[†] Presented at the 3rd International Electronic Conference on Foods: Food, Microbiome, and Health—A Celebration of the 10th Anniversary of Foods' Impact on Our Wellbeing; Available online: <https://foods2022.sciforum.net>.

Abstract: There is a great demand for the recovery of bioactive compounds from by-products and side streams in the food and cosmetic industries. More sustainable extraction methodologies are being chosen like pulsed electric field (PEF) assisted extraction, supercritical fluid extraction (SFE), pressurized liquid extraction (PLE), and ultrasound-assisted extraction. Endemic fruits represent a great and little-explored source of biomolecules that can become potential candidates for the study of new drugs and support the use of native species in functional foods or nutraceuticals. Some phenolics from Chilean fruits proved to be potential in the prevention of non-communicable- or chronic-diseases. The study aimed to produce polyphenolic-rich extracts from corcolen (*Azara dentata* Ruiz & Pav) by non-thermal methodologies. Two extracts were obtained by mean of SFE using CO₂ and ethanol as co-solvent, and PLE using water as solvent. The total antioxidant capacity, total phenolic content, carbohydrates, and proteins of both extracts were analyzed. The resulting phenolic content of the extracts obtained by SFE and PLE was 5.37 ± 0.38 and 21.17 ± 0.57 mg GAE/g sample, respectively. The total antioxidant capacity was 3.22 ± 0.47 and 18.05 ± 1.25 mg Trolox/g sample for the SFE and PLE extracts, respectively. Moreover, corcolen composition was characterized by LC-TTOF chromatography, being Chrysoeriol 7-O-glucoside, Isorhamnetin 7-O-rhamnoside, Isorhoifolin, Rhoifolin, Kaempferol 3-O-feruloyl-sophoroside 7-O-glucoside, Kaempferol 3-O-feruloyl-sophorotrioside, Spinacetin 3-O-(2-p-coumaroylglucosyl)(1->6)-apiosyl(1->2)-glucoside, Cyanidin 3-O-(xylosyl--(6-caffeoyl-glucosyl)-galactoside), the eight more predominant flavonoids. The different extraction methodologies allowed to obtain extracts with an interesting antioxidant capacity and rich in polyphenols, that could potentially find several applications as dietary supplements, ingredients for cosmetic formulations, or additives in food.

Keywords: corcolen (*Azara dentata*); pulsed electric field; supercritical fluid extraction; pressurized liquid extraction; antioxidants

Citation: Cuesta Ramos, L.; Jastrzębska, J.; Dawidowicz, K.; Simirgiotis, M.J.; Phimolsiripol, Y.; Barba, F.J.; Castagnini, J.M. Green-Extraction Methodologies for Recovering Bioactive Compounds from Endemic Fruits: Corcolen (*Azara dentata*). *2022*, *69*, x. <https://doi.org/10.3390/xxxxx> Published: 1 October 2022

Publisher's Note: MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



Copyright: © 2022 by the authors. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).