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IMPACT OF FREEZING AND DRYING PREPROCESSING ON PIGMENTS EXTRACTION FROM THE BROWN SEAWEED« *PHYLLARIA RENIFORMIS*» COLLECTED IN ALGERIAN COAST

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ABSTRACT

Seaweeds are an excellent source of natural pigments such as chlorophylls and carotenoids that exhibit several bioactive properties fully exploited in food and health products. Due to the high sensitivity and the rapid degradation of pigments, recent researches are now focusing on development of efficient techniques for their extraction, while the sample preprocessing as the main important step attracted less attention. The objective of this study was the evaluation of the effect of freezing and drying preprocessing on pigments quantity, quality and antioxidant activity of the brown seaweed *Phyllaria reniformis*. Pigments were quantified using UV-Visible spectrophotometry and fully characterized by reverse phase high performance liquid chromatography (RP-HPLC). *Phyllaria reniformis* was characterized by a high amount of pigments especially fucoxanthin. Based on UV-visible spectrophotometry results, alga preprocessing before extraction showed a high variability on pigments content. As shown by RP-HPLC freezing preprocessing exhibited the most efficient pigment extraction in term of quantity. While, drying preprocessing demonstrated higher amount of *β*-carotene and pheophytin *a*. The highest and most efficient antioxidant activities were obtained in the frozen samples. The quality, quantity and antioxidant activities of *Phyllaria reniformis* pigments extract was found to be deeply related to the preprocessing step.