PROCESSING ULVA SP. BY MECHANICAL AND THERMAL TREATMENT: NITROGEN DISTRIBUTION IN DIFFERENT FRACTIONS

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Résumé

In the context of food and demographic transition and the search for new sustainable protein sources, the PROMALG-Health ANR project aims to develop protein ingredients from macroalgae (*Ulva sp.*, *Palmaria palmata*, ...) for the health sector.

The aim of the thesis project is to characterize "conventional" and "alternative" thermophysical conditioning and destructuring processes to optimize the extraction of seaweed proteins, while preserving their nutritional and functional properties, and taking into account energy and economic constraints. The main challenge lies in the complexity of the macroalgal cell wall and the strong interactions between proteins and polysaccharides, which limit the efficiency of traditional extraction processes.

In order to answer this question, different "conventional" processes are initially studied: grinding-pressing (juice extractor), grinding, freezing/thawing cycles, blanching and autoclaving. These operation units are studied alone or in combination, to observe their impact on protein release. Each treatment produces different fractions (solids and liquids), on which the nitrogen content is measured using a colorimetric kit assay. The research is currently focused exclusively on the *Ulva sp.*, grown in tanks by the company France Haliotis (Plouguerneau, France).

The aim is to compare the efficiency and the impact of these treatments, and these preliminary results will be used to guide the choice of processes most appropriate for extracting proteins from the seaweed matrice. The poster will present a summation of the processes tested, the methodology and the initial results obtained with the *Ulva sp.*.

Mots-Clés: Ulva, Proteins extraction, Operation units

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