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Valorization and Sustainable Utilization of Fishery Byproducts: Opportunities and Challenges

PhD student: Paula Zambe Azevedo

Advisor: Prof. Dr. Pedro Henrique Campelo Felix – Departamento de Tecnologia de Alimentos (DTA)

The fish production chain is a significant and expanding economic activity, but it faces challenges related to inadequate waste disposal. Fish by-products, including viscera, bones, skin, head, and scales, can account for up to 70% of the animal's weight and are often discarded as solid waste. Limited knowledge within the fishing sector about technological and sanitary procedures, coupled with the high microbial and enzymatic load of the by-products, makes their utilization difficult. Inadequate infrastructure and storage contribute to their susceptibility to deterioration. Furthermore, the collection, transportation, and processing logistics can be complex, particularly in remote areas. Moreover, ensuring the quality and safety of products derived from these by-products requires adherence to health and food safety regulations. Consequently, only a small portion of these by-products is utilized, with an average usage rate of 30% in activities with low added value, such as flour, oil, fertilizer, and silage production. However, these by-products possess untapped potential as they are low-cost, highly functional, and rich in nutrients. New utilization alternatives are being explored in the scientific literature, including the development of new products such as mechanically separated meat, protein isolate, and hydrolysate. Additionally, valuable compounds, like chitin obtained from crustaceans, are being extracted. These processing techniques and the utilization of fish by-products offer alternative approaches to mitigate environmental issues and reduce negative impacts. They also promote sustainability within the fishing industry while enabling a reduction in production costs. To achieve this, it is crucial to appropriately collect, package, and treat the by-products for further processing.

Keywords: Fish processing; Solid waste; Full utilization of fish; Fishery resources.

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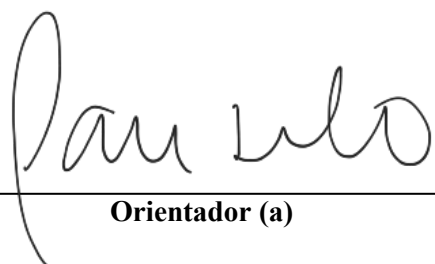
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