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ENHANCEMENT OF TECHNOLOGICAL PROCESSES IN THE EXTRACTION AND MODIFICATION OF INSECT PROTEINS: IMPACTS ON TECHNOFUNCTIONAL PROPERTIES, NUTRITIONAL VALUE, AND BENEFITS TO HUMAN HEALTH

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Alternative proteins, especially those derived from insects, are emerging as sustainable solutions to meet the growing global demand for food. Insect farming requires significantly less land and water and generates lower greenhouse gas emissions compared to traditional livestock farming. Although the use of insect proteins is recognized in various regions, with over 1,900 species suitable for consumption, this protein source remains underexplored. In addition to their environmental sustainability, insect proteins are rich in essential amino acids, healthy lipids, and micronutrients such as iron and zinc, making them highly nutritious. For these proteins to become more prominent in the food industry, it is crucial to optimize extraction and modification technologies, understanding their impacts on the physicochemical and techno-functional properties. Innovations in these areas can enhance product yield and quality, as well as facilitate consumer acceptance, especially when the product does not directly evoke insects. In this sense, the creation of mixed formulations that combine insect proteins with other proteins, such as dairy proteins, represents an effective strategy that aids in a gradual dietary transition, preserving nutritional value and exploring the complementary properties of each protein. Thus, the inclusion of insect proteins in the human diet represents a promising solution to the growing demand for sustainable food. The proper employment of extraction and modification technologies is essential to explore this potential, contributing to health and food security.

Referências

KUMAR, Sruthi et al. Gelling properties of black soldier fly (Hermetia illucens) larvae protein after ultrasound treatment. **Food Chemistry**, v. 386, p. 132826, 2022.

LEE, Jae Hoon et al. Structural, physicochemical, and immune-enhancing properties of edible insect protein isolates from Protaetia brevitarsis larvae. **Food Chemistry: X**, v. 18, p. 100722, 2023.

LICEAGA, Andrea M. et al. Insetos como fonte alternativa de proteína. **Revisão Anual de Ciência e Tecnologia de Alimentos**, v. 13, n. 1, p. 19-34, 2022.

STONE, Andrea K.; TANAKA, Takuji; NICKERSON, Michael T. Protein quality and physicochemical properties of commercial cricket and mealworm powders. **Journal of Food Science and Technology**, v. 56, p. 3355-3363, 2019.

ZHANG, Fengxue et al. Ultrasound-assisted alkaline extraction of protein from Tenebrio molitor larvae: Extraction kinetics, physiochemical, and functional traits. **Ultrasonics Sonochemistry**, v. 95, p. 106379, 2023.

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