TAL 797 – Seminário

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3D FOOD PRINTING: AND ITS IMPACTS ON CONSUMER EXPERIENCE

Pós-graduando: Najara Sousa da Silva
Orientador: Valéria Paula Rodrigues Minim
(Departamento de Tecnologia de Alimentos)
Nível: ( ) MS (X) DS

3D food printing is an emerging technology that offers a wide range of innovative applications within the food industry. It is based on the concept of additive manufacturing, a technology that creates three-dimensional objects by depositing material layer by layer in a controlled manner through digital models, and it can be applied across various fields. In the food sector, 3D printing enables the customization of food products by adjusting their shape, texture, and nutritional content, with the potential to meet the specific needs of targeted consumer groups such as children, the elderly, or hospitalized patients, as it allows for the creation of foods with precise nutritional profiles. This technology contributes to waste reduction, making it a more sustainable option while providing novel solutions for the food industry. Nevertheless, challenges remain, including process standardization and optimization. Consumer acceptance also represents a significant barrier, as many individuals are still unfamiliar with this technology. This situation demands efforts to raise awareness regarding the safety and benefits of this new method of food production. Despite these challenges, 3D printing has helped transform food production, particularly in terms of personalization. By effectively combining techniques such as extrusion, inkjet printing, and selective laser sintering, it is possible to produce foods using proteins, carbohydrates, and lipids. These nutrients play a crucial role in the formulation of printed foods, influencing properties such as texture, viscosity, and stability, which directly impact the final product quality. Although research on 3D food printing has predominantly focused on the rheology of food structures and printability, investigations into the sensory aspects of printed foods remain limited but are nonetheless essential. The characterization of the sensory properties of printed foods can provide valuable insights for multisensory designsuch as developing foods with layers that differ in composition and sensory attributesin order to enhance sensory quality.

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