

Case Study: Research to Commercialization of Cricket Protein

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ABSTRACT:

Cricket protein is emerging as a promising and sustainable alternative to traditional animal-based proteins. As the world grapples with food security and environmental concerns, crickets offer a compelling solution due to their high nutritional value, efficient feed conversion rates, and minimal ecological footprint. However, it has some limitations such as poor functional properties and consumer acceptance. Therefore, this research aims to enhance the characteristics of cricket protein by utilizing conjugation with saccharides via the Maillard reaction. To supplement the traditional Maillard reaction, a new technique involving ultrasound and microbubble is implemented. Moreover, the study delves into the effects of the conjugation of cricket protein-saccharide on emulsion stability, vitamin D integration, and cytotoxicity, as well as its practical application in the production of imitation mozzarella cheese. The application of this research can be expanded and used in real industry. The commercialization process will be discussed.