UNIVERSIDADE FEDERAL DE VIÇOSA
CENTRO DE CIÊNCIAS EXATAS E TECNOLÓGICAS
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TAL 797 – Seminário

24/09/2025

Applications of Natamycin in the Control of Fungi in Foods: Studies on Kiwifruit and Low-Moisture Mozzarella Cheese

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Natamycin is a polyene antimicrobial widely used in the food industry due to its strong effectiveness against fungi and yeasts. It acts by specifically binding to ergosterol in the plasma membrane, thereby compromising the cellular integrity of microorganisms. In the study on kiwifruit, its antifungal activity against *Botryosphaeria dothidea*, the causal agent of soft rot, was evaluated. The application of natamycin significantly reduced mycelial growth, spore germination, and symptom severity (brown spots on the pulp or peel of the fruit, loss of firmness, decay of internal tissues). Morphological alterations in hyphae and increased cell permeability were also observed, supporting its mechanism of action. On the other hand, in the research on low-moisture mozzarella cheese, two application strategies were compared: surface spraying and incorporation into an edible hydroxyethylcellulose-based coating. Both approaches extended shelf life and reduced fungal incidence; however, the coating provided a gradual release of natamycin, resulting in lower surface residues and better compliance with the acceptable daily intake limit. Therefore, the combined analysis of these studies indicates that the efficacy of natamycin is directly influenced by the mode of application and the food matrix. Edible coatings emerge as a promising approach to extend product stability and reduce postharvest and post-processing losses. This strategy combines antifungal efficiency with a lower dependence on direct surface application of chemical additives, representing a sustainable and technically feasible alternative for preserving foods of different origins.

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Referências bibliográficas:

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