



Hungarian University of Agriculture and Life Sciences

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Master's in Food Safety and Quality Engineering.

Effect of edible coating on egg quality during storage

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Abstract:

This thesis discusses cassava starch coatings as a persistent method which is used to improve the quality and the shelf life of eggs. Our research was held in the backdrop of a rapidly expanding global egg market that takes up the key economic and dietary issues of the egg industry including its preservation bottlenecks. Studies have been carried out to estimate the efficiency of the cassava starch coat in preserving the quality traits of eggs including weight loss, Haugh Unit values, albumen quality, and air cell size over time. The first experiment entailed the evaluation of egg quality during storage with regard to the content of cassava starch of different concentrations. The findings of the laboratory tests showed a significant correlation between higher concentrations of cassava starches and reduced weight loss, improved Haugh Unit values, and preserved quality of albumen and size of air cells. Among all coatings groups, S4 was the most efficacious at conserving egg quality resulting in "A" quality standards after 4 weeks of storage. The second experiment together with those of other researchers was concerned with the significance of cassava starch coatings on eggs of different sizes (S, M, and XL) for 4 weeks. Analyses revealed that cassava starch coatings fully protected eggs of all sizes and that small eggs (S, M) marked "A" while large ones (XL) attained grade "B". The coatings demonstrated the more cooked yolk together with firm albumen and also the small size of air cells, hence better freshness and quality retention. Taken together, the results of both experiments provide the evidence in favor of the cassava starch coat efficacy of food preserving and shelf life extending. The research veins the possibility of using the cassava starch as a preservation solution for the egg industry, and S4 sample being the strongest in reducing the process of deterioration.