

SHORT COMMUNICATION

Seaweed-based edible coating with palmarosa essential oil to extend the shelf life of papaya (*Carica papaya* L.): physicochemical and yeast–mold evaluation

Iwan Setiawan^{1*}, Dhea Trisna Fatikasari² and Disa Andriani¹

¹Department of Pharmaceutics and Pharmaceutical Technology, Sekolah Tinggi Ilmu Kesehatan Nasional, Central Java, Indonesia

²Department of Natural Product Formulation Technology, Sekolah Tinggi Ilmu Kesehatan Nasional, Central Java, Indonesia

*Email: iwan.setiawan02@stikesnas.ac.id ORCID: <https://orcid.org/0000-0003-1567-9856>

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ABSTRACT

*Papaya (*Carica papaya* L.) is a climacteric fruit with rapid postharvest deterioration. This study evaluated the effect of seaweed-based edible coating incorporated with palmarosa essential oil on weight loss and yeast–mold growth during storage. The experiment followed a factorial randomized block design with two factors: temperature (room and cold) and seaweed source (*Gracilaria* from Tegal and Yogyakarta). Fruits were stored for 15 days, and quality parameters were periodically evaluated. Weight loss increased progressively in all treatments, with higher values under room temperature. At day 15, weight loss reached 21.68% (Tegal) and 24.52% (Yogyakarta) under room temperature, while lower values were observed under cold storage (6.60% and 6.28%, respectively). Yeast–mold counts also increased during storage, with higher counts under room temperature compared to cold storage. At day 10, microbial counts reached 175.67 and 173.33 CFU/cm² under room temperature, while lower counts (42.67 and 31.33 CFU/cm²) were observed under cold storage. The results indicate that storage temperature plays a dominant role in reducing quality deterioration, while edible coating contributes to maintaining physicochemical and microbiological stability.*

Keywords: Edible coating, *Gracilaria* sp, palmarosa essential oil, papaya, postharvest quality, yeast–mold contamination