

**APLIKASI *EDIBLE COATING* KITOSAN DENGAN EKSTRAK DAUN
SALAM (*Syzygium polyanthum*) UNTUK MEMPERTAHANKAN
SIFAT FISIKOKIMIA DAN MENINGKATKAN UMUR SIMPAN
STROBERI (*Fragaria x ananassa*)**

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ABSTRACT

Application of Chitosan Edible Coating with Bay Leaf Extract (*Syzygium polyanthum*) to Maintain Physicochemical Properties and Extend the Shelf Life of Strawberries (*Fragaria x ananassa*)

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Strawberries (*Fragaria × ananassa*) are perishable fruits with a short shelf life, requiring effective preservation methods. This research aims to develop a chitosan-based edible coating with the addition of bay leaf extract (*Syzygium polyanthum*) as a natural alternative to maintain physicochemical properties and extend the shelf life of strawberries. Chitosan was chosen as the base material for the edible coating due to its biocompatible, biodegradable, good film-forming, and antimicrobial properties. However, chitosan has limitations because it does not optimally produce antioxidants. Bay leaf extract is rich in antimicrobial and antioxidant compounds, which complement chitosan's shortcomings and produce a synergistic effect. This study involves optimizing the edible coating formulation using variations in the concentrations of chitosan, citric acid, and bay leaf extract. The edible coating was applied using dipping and spraying methods with pure and commercial chitosan. Coated strawberries were stored at room temperature (25-28°C) and analyzed over 6 days of storage to evaluate changes in physicochemical properties (weight loss, decay index, total soluble solids, total titratable acidity, and total antioxidants). The optimal formulation was obtained from an edible coating made of 2% chitosan, 1.5% citric acid, and 40% bay leaf extract. There was no significant difference in effectiveness between pure and commercial chitosan, but the dipping method yielded better results than the spraying method. The best coating performance suppressed fruit weight loss from 39.81% to 8.95%, decay index reduction from 33.33% to 0%, TSS value from 5.3 °Brix to 7.2 °Brix, and TTA value from 1.80% to 1.25%, and total antioxidant content from 0.22 AA/g FW to 0.99 mg AA/g FW were observed in strawberries coated with a composition of 2% pure chitosan, 1.5% citric acid, and 40% bay leaf extract using the dipping method for 4 days of storage. This developed coating formulation can serve as a biodegradable edible coating alternative to enhance the shelf life and maintain the physicochemical properties of postharvest strawberries.

Keywords: *Edible Coating, Chitosan, Strawberry, Bay Leaf, Postharvest.*

