

EDIBLE COATING BERBASIS KITOSAN *Auricularia* sp. SEBAGAI PENGAWET ALAMI PADA FILET IKAN TUNA

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INTISARI

Penelitian ini mengevaluasi potensi kitosan dari jamur *Auricularia* sp. sebagai *edible coating* untuk memperpanjang masa simpan dan menjaga mutu filet ikan tuna. Kitosan diekstraksi melalui deproteinasi, demineralisasi, deasetilasi dan menunjukkan kelarutan optimal pada konsentrasi asam asetat 1,5%, lalu diaplikasikan pada filet tuna konsentrasi 0,2% dan 2% pada suhu dingin ($4\pm 1^{\circ}\text{C}$) selama 6 hari. Parameter meliputi rendemen, gugus fungsi (FTIR), mikrobiologis (ALT, Coliform, *E. coli*, *Salmonella* sp.), pH, TVB-N, proksimat, dan sensori. Hasil menunjukkan rendemen kitosan 8,29%. Karakterisasi FTIR mengonfirmasi transformasi kitin menjadi kitosan melalui serapan gugus fungsi khas seperti hidroksil (-OH), amina (-NH), dan amida. Konsentrasi 0,2% paling efektif menghambat mikroba berdasarkan Angka Lempeng Total (ALT). Hari ke-6, nilai ALT tercatat $9,09\times 10^2$ CFU/g, lebih rendah dari kontrol negatif ($304,81\times 10^2$ CFU/g), serta mereduksi Coliform hingga tidak terdeteksi (<3 APM/g). Aplikasi kitosan 0,2% mampu mempertahankan nilai TVB-N sebesar 13,81 mgN/100 g yang mengindikasikan penghambatan pembusukan. Namun, berdasarkan analisis proksimat, penggunaan kitosan belum menunjukkan pengaruh yang signifikan terhadap parameter kadari air, protein, lemak, abu, dan karbohidrat, sehingga efektivitasnya dalam mempertahankan komposisi proksimat belum dapat disimpulkan secara kuat. Meskipun kitosan 2% unggul menjaga tekstur (skor 6,0), penggunaan pelarut asam asetat menyebabkan skor sensori (5,0–6,0) masih di bawah standar SNI. Disimpulkan bahwa *edible coating* kitosan *Auricularia* sp. 0,2% efektif sebagai pengawet alami untuk menjaga stabilitas mutu filet ikan tuna.

KATA KUNCI: *Auricularia* sp., *edible coating*, filet ikan, kitosan, pengawet alami.

EDIBLE COATING BASED ON CHITOSAN FROM *Auricularia* sp. AS A NATURAL PRESERVATIVE FOR TUNA FISH FILLETS

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ABSTRACT

This study evaluates the potential of chitosan derived from *Auricularia* sp. as an edible coating to extend shelf life and maintain the quality of tuna fillets. Chitosan was extracted through deproteinization, demineralization, and deacetylation, and exhibited optimal solubility in 1.5% acetic acid, then applied to tuna fillets at concentrations of 0.2% and 2% during cold storage ($4\pm1^{\circ}\text{C}$) for 6 days. The parameters analyzed included yield, functional groups (FTIR), microbiological quality (Total Plate Count/ALT, Coliform, *E. coli*, *Salmonella* sp.), pH, TVB-N, proximate composition, and sensory evaluation. The results showed a chitosan yield of 8.29%. FTIR characterization confirmed the transformation of chitin into chitosan, indicated by characteristic functional groups such as hydroxyl (-OH), amine (-NH), and amide. The 0.2% concentration was the most effective in inhibiting microbial growth based on Total Plate Count. On day 6, the ALT value reached 9.09×10^2 CFU/g, lower than the negative control (304.81×10^2 CFU/g), and reduced Coliform to undetectable levels (<3 MPN/g). The application of 0.2% chitosan maintained TVB-N at 13.81 mgN/100 g, indicating its effectiveness in inhibiting spoilage. However, proximate analysis indicated that chitosan application did not show a significant effect on moisture, protein, fat, ash, and carbohydrate content; thus, its effectiveness in preserving proximate composition cannot be conclusively determined. Although 2% chitosan performed better in maintaining texture (score 6.0), the use of acetic acid as a solvent resulted in sensory scores (5.0–6.0) still below SNI standards. In conclusion, 0.2% *Auricularia* sp. chitosan edible coating is effective as a natural preservative to maintain the quality stability of tuna fillets.

KEY WORDS: *Auricularia* sp., edible coating, fish fillet, chitosan, natural preservative.