

Intisari

Penelitian ini bertujuan untuk mengetahui pengaruh kitosan dan nanokitosan dalam mempertahankan mutu ikan teri nasi setengah kering. Optimasi konsentrasi asam asetat dan kitosan untuk pembuatan larutan nanokitosan dilakukan terlebih dahulu agar diperoleh formula nanokitosan yang dapat diterima oleh konsumen. Karakterisasi ukuran partikel, pH, dan aktivitas antibakteri dilakukan pada larutan asam asetat, kitosan dan nanokitosan. Hasil karakterisasi menunjukkan bahwa larutan nanokitosan 0,1% (Asam asetat 0,8%+kitosan 0,1%+TPP 0,336 gram) menghasilkan ukuran partikel terkecil (154 nm) dan menunjukkan aktivitas antibakteri tertinggi sehingga dipilih untuk diaplikasikan pada produk teri nasi setengah kering. Sebagai pembanding digunakan larutan kitosan 0,1% dan keduanya disimpan pada suhu 30 °C selama 6 hari serta suhu 5 °C selama 16 hari. Ikan teri nasi setengah kering tanpa perlakuan kitosan maupun nanokitosan digunakan sebagai kontrol. Parameter yang diamati meliputi total bakteri, kadar air, kadar garam, pH, susut bobot dan organoleptik. Aplikasi nanokitosan 0,1% dan kitosan 0,1% pada ikan teri nasi setengah kering mampu menekan pertumbuhan bakteri dibandingkan dengan kontrol, menghasilkan kadar air, kadar garam dan pH yang relatif stabil selama penyimpanan, meminimalkan susut bobot dan menghasilkan penerimaan konsumen yang baik. Nanokitosan menunjukkan kemampuan memperpanjang umur simpan yang lebih efektif dibandingkan larutan kitosan dan kontrol. Penggunaan nanokitosan sebagai pengawet ikan teri nasi setengah kering dapat mempertahankan mutu ikan teri nasi selama 3 hari pada penyimpanan suhu 30°C dan 7 hari pada penyimpanan suhu 5°C.

Kata kunci : ikan teri nasi setengah kering, kitosan, nanokitosan

Abstract

The aims of this research were to determine the effects of chitosan and nanochitosan on maintaining the quality of semi-dried anchovy. Optimization of acetic acid and chitosan concentration during nanochitosan preparation was conducted in order to obtain the acceptable nanochitosan formula by consumers. Characterization of particle size, pH, and antibacterial activity were performed on acetic acid solution, chitosan solution and nanochitosan solution with varying concentrations. The results showed that 0.1% nanochitosan solution (acetic acid 0.8% + 0.1% chitosan+ TPP 0.336 gram) produced smallest nanochitosan particle size (154 nm) and it resulted the highest antibacterial activity, therefore it was chosen to be applied in the preservation of semi-dried anchovy.. As a comparison to preserve semi-dried anchovy, was used chitosan solution 0.1% and both of treatments were stored at 30 °C for 6 days and 5 ° C for 16 days, respectively. Anchovy without any treatment was used as control treatment. The observed parameters were total bacteria count, water content, salinity, pH value, weight loss and organoleptic. Application of nanochitosan and chitosan solution on semi-dried anchovy were able to suppress bacterial growth if it was compared with control, resulted water content, ph and salinity that were stable, minimized the weight loss and gave good consumers acceptance. Nanochitosan more effective in extending the shelf life of semi-dried anchovy than chitosan solution or control treatment. Nanochitosan was able to maintain the quality of semi-dried anchovy until 3 days when it was stored at 30°C and 7 days at 5°C.

Keyword: chitosan, nano-chitosan, semi-dried anchovy, shelf life.