

**Efektivitas Kemasan Bioplastik Bulu Ayam dengan Nanokitosan sebagai Antimikroba terhadap Masa Simpan Sayuran Segar**  
*(The Effectiveness of Chicken Feather Bioplastic Packaging with Nanochitosan as an Antimicrobial on the Shelf Life of Fresh Vegetables)*  
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**ABSTRACT**

*Bioplastic is plastic that are easily decomposed by microorganisms, made from natural polymers, example is keratin. Keratin is a protein in vertebrate animal epithelial cells and additional epidermal cells, example chicken feathers. The addition of Black Soldier Fly (BSF) maggot casing nanochitosan as bioplastic filler produces nanocomposites to increase antimicrobial activity, so bioplastic can extend the shelf life of fresh vegetables. The aim of this research is to characterize chicken feather bioplastics with the addition of antimicrobial nanochitosan BSF maggot casing by testing thickness, tensile strength, elongation and water resistance and estimating the shelf life of fresh vegetables. Estimation the age of fresh vegetables can be evaluated by Accelerated Shelf Life Test (ASLT) Arrhenius model with variations in storage temperature of 4°C, 28°C, 40°C and storage time with a total bacteria test (*P.aeruginosa*) and a sensory test including color, smell and texture. The test results for the characteristics of chicken feather bioplastics with the addition of antimicrobial nanochitosan BSF maggot casing has tensile strength 8.28 MPa, elongation 152%, thickness 0.25 mm and water resistance 98%. Lettuce packaged using chicken feather bioplastic with the addition of antimicrobial nanochitosan at a storage temperature of 4 °C has a shelf life of 7.18 days, a temperature of 28 °C (3.07 days), and a temperature of 40 °C (1.96 days). Leunca packaged using chicken feather bioplastic, the addition of antimicrobial nanochitosan at storage temperature of 4 °C has a shelf life of 8.61 days, at a temperature of 28 °C (5.13 days) and a temperature of 40 °C (4.24 days).*

**Keywords :** *bioplastic, chicken feathers, nanochitosan, BSF maggot casing, shelf life, fresh vegetables.*