

ABSTRAK

PENGARUH VARIASI JENIS DAN KONSENTRASI *PLASTICIZER* TERHADAP KARAKTERISTIK *EDIBLE FILM* BERBASIS GELATIN CEKER AYAM

Shiva Nur Alya, 2026, 38 Halaman, 6 Tabel, 11 Gambar, 4 Lampiran

Edible film merupakan plastik konvensional ramah lingkungan yang dapat dikonsumsi sebagai pengganti plastik sintesis, dikarenakan plastik sintesis tidak dapat terurai secara alami, salah satu alternatif dalam menangani masalah tersebut yaitu dengan pengembangan plastik yang berbahan dasar alami yang disebut *edible film*. Penelitian ini bertujuan untuk mengetahui pengaruh variasi jenis dan konsentrasi *plasticizer* terhadap karakteristik *edible film* yang dihasilkan dengan berbasis gelatin ceker ayam, dimana gelatin ceker ayam dengan metode asam yang melalui perendaman menggunakan asam dari jeruk nipis. Pada penelitian ini menggunakan bahan baku dari gelatin ceker ayam sebanyak 5 gram, dan variasi pada jenis dan konsentrasi *plasticizer* yang digunakan, yaitu gliserol dan sorbitol dengan konsentrasi P1 = 10%, P2 = 20%, P3 = 30%, P4 = 40%, dan P5 = 50%. Produk *edible film* yang dihasilkan dilakukan analisis ketebalan, daya serap air, kuat tarik, elongasi, dan laju transmisi uap air, sedangkan untuk analisis bahan baku gelatin, yaitu analisis pH dan viskositas. Hasil penelitian menunjukkan bahwa karakteristik *edible film* yang terbaik dihasilkan dari jenis *plasticizer* sorbitol dengan konsentrasi 40%, dimana nilai kuat tarik sebesar 14,72 MPa, elongasi sebesar 46%, ketebalan sebesar 0,20 mm, daya serap air sebesar 72,41%, dan laju transmisi uap air sebesar 0,75 gr/m².24h, hasil dari analisis yang dilakukan menunjukkan bahwa sorbitol dengan konsentrasi 40% mampu bekerja secara optimal sebagai *plasticizer* dalam pembuatan *edible film* berbasis gelatin ceker ayam yang sesuai dengan Standar Japanese Industrial Standar (JIS), 1975.

Kata Kunci : *Edible film*, gelatin, ceker ayam, gliserol, sorbitol, jeruk nipis

ABSTRACT

THE EFFECT OF VARIATIONS IN PLASTICIZER TYPE AND CONCENTRATION ON THE CHARACTERISTICS OF EDIBLE FILMS MADE FROM CHICKEN FEET GELATIN

Shiva Nur Alya, 2026, 38 Pages, 6 Tables, 11 Figures, 4 Appendices

Edible film is an environmentally friendly alternative to conventional plastic that can be consumed, as synthetic plastics do not degrade naturally. One solution to this problem is the development of naturally derived plastics known as edible films. This study aims to determine the effect of variations in the type and concentration of plasticizers on the characteristics of edible film produced from chicken feet gelatin, where the chicken feet gelatin is extracted using an acid method involving soaking in lime juice. In this study, 5 grams of chicken feet gelatin was used as the raw material, and variations in the type and concentration of plasticizers were tested, specifically glycerol and sorbitol at concentrations P1=10%, P2=20%, P3=30%, P4=40%, P5=50%. The edible films produced were analyzed for thickness, water absorption, tensile strength, elongation, and water vapor transmission rate, while the gelatin raw material was analyzed for pH and viscosity. The results of the study indicate that the best characteristics of the edible film were obtained using sorbitol as the plasticizer at a 40% concentration, with a tensile strength of 14,72 MPa, elongation of 46%, thickness of 0,20 mm, water absorption of 72,41%, and water vapor transmission rate of 0,75 g/m².24h, the results of the analysis showed that sorbitol at a 40% concentration performed optimally as a plasticizer in the production of edible films based on chicken feet gelatin, in accordance with the Japanese Industrial Standard (JIS),1975.

Keywords: *Edible film, gelatin, chicken feet, glycerol, sorbitol, lime*