

ABSTRAK

PEMANFAATAN CEKER AYAM (*Selaginella Doederleinii Hieron*) PADA PEMBUATAN GELATIN DENGAN VARIASI ASAM ORGANIK BUAH DAN WAKTU EKSTRAKSI

(Ahmad Agung Sultan Zaky, 2025, 60 Halaman, 13 Tabel, 15 Gambar, 4 Lampiran)

Gelatin adalah protein hasil hidrolisis parsial kolagen, senyawa utama penyusun jaringan ikat hewan seperti kulit, tulang, dan tendon. Gelatin memiliki berbagai manfaat dalam industri makanan, farmasi, kosmetik, dan fotografi, serta berfungsi sebagai pengental, pengemulsi, pembentuk gel, dan perekat. Umumnya, gelatin diproduksi dari kulit atau tulang sapi, namun dalam penelitian ini digunakan ceker ayam sebagai bahan baku alternatif yang lebih murah, mudah diperoleh, dan halal. Ceker ayam dipilih karena murah, halal, mudah diperoleh, dan mengandung kolagen serta asam amino esensial dalam jumlah tinggi. Penelitian ini bertujuan untuk mengkaji potensi ceker ayam sebagai bahan baku gelatin melalui penggunaan asam organik alami, yaitu belimbing wuluh dan jeruk nipis, dengan variasi waktu ekstraksi 4, 4,5, 5, 5,5 dan 6 jam. Proses produksi meliputi tahap demineralisasi, hidrolisis kolagen, ekstraksi, filtrasi, pengeringan, dan karakterisasi sifat fisikokimia gelatin. Hasil terbaik diperoleh dari perlakuan menggunakan belimbing wuluh dengan waktu ekstraksi 6 jam, menghasilkan rendemen 4,8%, pH 5, kadar air 7,44%, kadar abu 1%, viskositas 0,87 cP, dan kadar protein 35,01%. Jika dibandingkan dengan standar SNI 06-3735-1995 dan GMIA 2012, seluruh parameter tersebut telah memenuhi syarat mutu gelatin, baik dari segi rendemen, kestabilan pH, kadar air dan abu, hingga viskositas dan kadar protein. Hal ini menunjukkan bahwa gelatin dari ceker ayam berpotensi sebagai bahan alternatif pengganti gelatin komersial dan dapat dimanfaatkan sebagai lem alami yang ramah lingkungan.

Kata Kunci: Belimbing Wuluh, Ceker Ayam, Gelatin, Jeruk Nipis, Kolagen.

ABSTRACT

UTILIZATION OF CHICKEN FEET (*Selaginella Doederleinii Hieron*) IN MAKING GELATIN WITH VARIATIONS OF ORGANIC FRUIT ACIDS AND EXTRACTION TIME

(Ahmad Agung Sultan Zaky, 2025, 60 Pages, 13 Tables, 15 Pictures, 4 Attachment)

Gelatin is a protein produced by the partial hydrolysis of collagen, the main component of animal connective tissue such as skin, bones, and tendons. Gelatin has various uses in the food, pharmaceutical, cosmetic, and photography industries, functioning as a thickener, emulsifier, gelling agent, and adhesive. Gelatin is generally produced from cow skin or bones, but in this study, chicken feet were used as an alternative raw material that is cheaper, readily available, and halal. Chicken feet were chosen because they are inexpensive, halal, readily available, and contain high levels of collagen and essential amino acids. This study aims to assess the potential of chicken feet as a raw material for gelatin through the use of natural organic acids, namely starfruit and lime, with varying extraction times of 4, 4.5, 5, 5.5, and 6 hours. The production process includes demineralization, collagen hydrolysis, extraction, filtration, drying, and characterization of the gelatin's physicochemical properties. The best results were obtained from the treatment using starfruit with an extraction time of 6 hours, resulting in a yield of 4.8%, pH 5, water content of 7.44%, ash content of 1%, viscosity of 0.87 cP, and protein content of 35.01%. When compared with the SNI 06-3735-1995 and GMIA 2012 standards, all of these parameters have met the gelatin quality requirements, both in terms of yield, pH stability, water and ash content, as well as viscosity and protein content. This indicates that gelatin from chicken feet has the potential as an alternative material to replace commercial gelatin and can be used as an environmentally friendly natural glue.

Keywords: Starfruit, Chicken Feet, Gelatin, Lime, Collagen