ABSTRAK

PEMANFAATAN TULANG IKAN PATIN (*Pangasius Hypoptalmus*) DALAM PEMBUATAN GELATIN DENGAN METODE EKSTRAKSI ASAM ASETAT DAN BUAH JERUK KEPROK (*Citrus Reticulata*)

(M.Naupal Taqiyudin, 2025, 89 Halaman, 33 Tabel, 24 Gambar ,4 Lampiran)

Gelatin merupakan biopolimer yang diperoleh melalui hidrolisis kolagen dan banyak dimanfaatkan dalam industri pangan, farmasi, dan kosmetik. Penelitian ini bertujuan untuk memanfaatkan limbah tulang ikan patin (Pangasius hypophthalmus) sebagai bahan baku pembuatan gelatin dengan metode ekstraksi menggunakan asam asetat dan ekstrak buah jeruk keprok (Citrus reticulata) sebagai sumber asam organik alami. Proses pembuatan gelatin meliputi degreasing, demineralisasi, ekstraksi, dan pengeringan, dengan variasi konsentrasi asam 4%, 6%, 8%, 10%, dan 12%. Karakterisasi gelatin dilakukan melalui analisis rendemen, kadar air, kadar abu, pH, kadar protein, serta uji FTIR. Hasil menunjukkan bahwa penggunaan asam asetat 12% menghasilkan rendemen tertinggi sebesar 3,82%, sedangkan gelatin dari jeruk keprok menunjukkan karakteristik organoleptik yang baik. Hasil FTIR menunjukkan kemiripan gugus fungsi antara gelatin hasil penelitian dan gelatin komersial. Penelitian ini membuktikan bahwa tulang ikan patin berpotensi sebagai sumber gelatin alternatif yang ramah lingkungan dan halal, serta mendukung pemanfaatan limbah perikanan secara optimal.

Kata Kunci: Gelatin, Tulang Ikan Patin, Ekstraksi, Asam Asetat, Jeruk Keprok, Kolagen

ABSTRACT

UTILIZATION OF PATIN FISH (Pangasius Hypoptalmus) BONES IN MAKING GELATIN WITH ACETIC ACID AND MANDREIN FRUIT EXTRACTION METHOD

(M. Naupal Taqiyudin, 2025, 89 Pages, 33 Tables, 24 Figures, 4 Appendices)

Gelatin is a biopolymer derived from the hydrolysis of collagen and is widely utilized in the food, pharmaceutical, and cosmetic industries. This study aims to utilize waste from catfish bones (Pangasius hypophthalmus) as a raw material for gelatin production through an extraction method using acetic acid and tangerine (Citrus reticulata) extract as a natural organic acid source. The gelatin production process includes degreasing, demineralization, extraction, and drying, with acid concentration variations of 4%, 6%, 8%, 10%, and 12%. Gelatin characterization was conducted through analysis of yield, moisture content, ash content, pH, protein content, and FTIR spectroscopy. The results showed that the use of 12% acetic acid produced the highest yield at 3.82%, while gelatin extracted with tangerine demonstrated favorable organoleptic properties. FTIR analysis revealed similarities in functional groups between the extracted gelatin and commercial gelatin. This study confirms the potential of catfish bone waste as an eco-friendly and halal alternative gelatin source, supporting the optimal utilization of fishery by-products.

Keywords: *Gelatin, Catfish Bone, Extraction, Acetic Acid, Tangerine, Collagen*