

PENGARUH PENAMBAHAN ENZIM BROMELIN DALAM EKSTRAKSI GELATIN KULIT KAKI DOMBA TERHADAP KUALITAS GELATIN

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INTISARI

Gelatin merupakan produk turunan protein yang diperoleh melalui proses hidrolisis kolagen dari kulit dan tulang hewan. Penelitian ini bertujuan untuk mengetahui pengaruh penggunaan enzim bromelin dalam produksi gelatin dari kulit kaki domba terhadap kualitas gelatin. Penelitian dilakukan dengan menggunakan empat perlakuan yaitu perlakuan P0 dengan menggunakan asam dan basa, perlakuan P1 dengan konsentrasi enzim sebesar 10u/g, perlakuan P2 dengan konsentrasi enzim sebesar 15u/g, dan perlakuan P3 dengan konsentrasi enzim sebesar 20u/g. Parameter yang diuji antara lain uji rendemen, pH, kadar air, kadar abu, kadar protein, kekuatan gel, dan analisis bobot molekul dengan SDS-PAGE. Penelitian ini menggunakan rancangan acak lengkap pola searah dengan tiga kali pengulangan dan dilanjutkan dengan uji *Duncan Multiple Range Test* (DMRT) $\alpha = 0,05$. Hasil penelitian ini menunjukkan penambahan enzim bromelin memberikan pengaruh yang berbeda nyata ($P < 0,05$) terhadap nilai rendemen, pH, kadar air, dan kekuatan gel, namun menunjukkan pengaruh yang berbeda tidak nyata pada kadar abu dan kadar protein. Kesimpulan penelitian ini yaitu penambahan enzim sebanyak 20u/g meningkatkan kualitas gelatin pada nilai rendemen 13,20g, pH 5,27, kadar air 7,55%, kadar abu 2,22%, dan kadar protein 88,10%, akan tetapi menurunkan nilai kekuatan gel 61,01gBloom. Berat molekul gelatin pada keempat perlakuan berada pada kisaran 10 sampai 180kDa.

Kata kunci: Kulit kaki domba, Enzim bromelin, Kualitas gelatin, Kadar protein, Berat molekul.

THE EFFECT OF BROMELIN ENZYME ADDITION ON THE EXTRACTION OF THE LAMB'S LEGS SKIN GELATIN ON GELATIN QUALITY

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ABSTRACT

Gelatin is a derivative protein product obtained by the hydrolysis of collagen from the skin and bone of animal tissue. This study aimed to determine the effect of bromelin enzymes utilization in the production of gelatin from lamb leg's skin on gelatin qualities. This research was conducted using four treatments, those were P0 as a control using acid and base, P1 using 10u/g, P2 using 15u/g, and P3 using 20u/g of bromelin concentration. Parameters including yield, pH, moisture content, ash content, protein content, gel strength, and molecular weight analysis using SDS-PAGE were observed in triplicates. This study used a completely randomized design with a unidirectional pattern with three repetitions and continued with the Duncan Multiple Range Test (DMRT) = 0.05. The results of this study showed that the addition of the bromelin enzyme had a significantly different effect ($P < 0.05$) on the yield value, pH, water content, and gel strength, but showed no significant effect on ash content and protein content. The conclusion of this study was the addition of 20u/g of enzyme increased the quality of gelatin at the yield value of 13.20g, pH 5.27, water content 7.55%, ash content 2.22%, and protein content 88.10%, but lowers the value of gel strength 61,01gBloom. Molecular weight of the four treatments in were the range of 10 to 180kDa.

Key words: Lamb leg's skin, Bromelain enzyme, Gelatin quality, Protein content, Molecular weight.