



PEMANFAATAN ENZIM BROMELIN UNTUK EKSTRAKSI GELATIN DARI KULIT KAKI SAPI

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INTISARI

Gelatin merupakan salah satu contoh bahan pangan yang mengandung protein yang dihasilkan dari turunan kolagen. Gelatin dibuat dengan metode asam, basa, dan penambahan enzim. Penambahan enzim pada proses ekstraksi gelatin dapat menggunakan enzim salah satunya yaitu enzim bromelin. Penelitian ini bertujuan untuk mengetahui pengaruh penggunaan enzim bromelin pada produksi gelatin dari kulit kaki sapi. Penelitian dilakukan dengan membuat gelatin dari kulit kaki sapi dengan empat perlakuan. Perlakuan P0 dengan konsentrasi 0 u/g, perlakuan P1 dengan konsentrasi enzim sebesar 10 u/g, perlakuan P2 dengan konsentrasi enzim sebesar 15 u/g, dan perlakuan P3 dengan konsentrasi enzim sebesar 20 u/g. Parameter uji yang dilakukan meliputi uji rendemen, pH, kekuatan gel, kadar air, kadar abu, kadar protein, dan pengukuran susunan protein dengan *SDS PAGE*. Analisis statistik dilakukan dengan analisis variansi rancangan acak lengkap pola searah dan apabila menunjukkan perbedaan dilanjutkan dengan uji *Duncan Multiple Range Test* (DMRT) $\alpha = 0,05$. Hasil penelitian menunjukkan bahwa penambahan enzim bromelin memberikan pengaruh yang berbeda nyata ($P < 0,05$) terhadap rendemen, pH, kekuatan gel, dan kadar air, namun menunjukkan pengaruh yang berbeda tidak nyata pada kadar abu dan kadar protein. Kesimpulan yang diperoleh adalah penambahan kadar enzim bromelin 15 u/g menghasilkan rendemen yang paling banyak sedangkan 20 u/g menghasilkan pH, kekuatan gel, kadar air, kadar abu, dan kadar protein yang baik.

Kata kunci: Gelatin, Kulit kaki sapi, Enzim bromelin.



THE UTILIZATION OF BROMELIN ENZYME IN THE EXTRACTION OF THE COW FEET LEATHER

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ABSTRACT

Gelatin is a food ingredient which contains protein and is produced from the partial hydrolysis of collagen. Gelatin is made by the method of acid, base, and the addition of enzymes. The addition of enzymes in the gelatin extraction process can use the bromelain enzyme. This study aims to determine the effect of the use of bromelain enzymes on the production of gelatin from cow feet hide. This research was conducted by making gelatin from cow feet hide and divided into 4 treatments group. Treatment P0 was a concentration of 0 u/g enzyme, treatment P1 was the concentration of 10 u/g enzyme, treatment P2 was the concentration of 15 u/g enzyme, and treatment P3 was the concentration of 20 u/g enzyme. The parameters of yield test, pH, gel strength, water content, ash content, protein content, and *SDS PAGE* was observed in triplicates. Statistical analysis was calculated using a completely randomized design variance analysis with a unidirectional pattern and if it showed a difference, it was continued with the Duncan Multiple Range Test (DMRT) test = 0.05. The results showed that the addition of the bromelain enzyme had a significantly different effect ($P < 0.05$) on yield, pH, gel strength, and water content, but showed no significant effect on ash content and protein content. The conclusion is the addition of bromelain enzyme levels of 15 u/g resulted in a good yield, while 20 u/g resulted in good pH, gel strength, water content, ash content, and protein content.

Keywords: Gelatin, Cow feet leather, Bromelain enzyme.