

PRODUKSI DAN KARAKTERISASI GELATIN DARI KULIT KAMBING *PICKLE* DENGAN METODE PENGERINGAN *FREEZE* DAN *OVEN DRYING*

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INTISARI

Gelatin merupakan salah satu jenis protein konversi yang diperoleh melalui proses hidrolisis kolagen dengan bantuan penambahan larutan asam atau basa. Penelitian ini bertujuan untuk mengetahui pengaruh proses produksi pembuatan gelatin dari kulit kambing *pickle* dengan metode pengeringan yang berbeda yaitu *freeze drying* dan *oven drying* terhadap kualitas gelatin. Bahan baku sampel berasal dari kulit kambing *pickle* yang diperoleh dari industri kulit lokal, dengan perlakuan pengeringan yang berbeda yaitu *oven drying* dan *freeze drying*. Variabel penelitian yang diuji adalah nilai rendemen, nilai pH, nilai kekuatan gel, kadar protein, kadar abu, nilai viskositas, dan analisis berat molekul gelatin dengan SDS-PAGE. Data yang terkumpul dilakukan analisis menggunakan Uji T-test *independent* dengan 3 kali pengulangan (*triplo*), dianalisis dengan *software* SPSS *for windows*. Hasil penelitian menunjukkan bahwa metode pengeringan memberikan perbedaan yang signifikan ($P < 0,05$) terhadap nilai variabel rendemen, viskositas, dan kekuatan gel, namun tidak terdapat perbedaan yang nyata ($P < 0,05$) pada variabel derajat keasaman (pH), kadar air, kadar abu, dan kadar protein. Produksi gelatin dengan perbedaan metode pengeringan menghasilkan nilai rendemen sebesar $4.57 \pm 0,29$ dan $1,18 \pm 0,04$, pH $3,46 \pm 0,25$ dan $3,17 \pm 0,8$, Viskositas $10,01 \pm 0,7$ dan $16,25 \pm 0,92$, Kekuatan gel $87 \pm 23,26$ dan $236,66 \pm 8,50$, Kadar Air $7,05 \pm 0,09$ dan $6,1 \pm 1,52$, Kadar Abu $3,21 \pm 2,61$ dan $6,6 \pm 0,89$, Kadar Protein $61,37 \pm 0,33$ dan $67,37 \pm 2,08$, Berat molekul berkisar 10-180 kDa. Penelitian ini dapat disimpulkan bahwa metode pengeringan yang berbeda memengaruhi karakterisasi gelatin diantaranya nilai rendemen, viskositas, dan kekuatan gel gelatin dari kulit kambing *pickle*. *Freeze drying* menghasilkan kualitas gelatin yang lebih baik daripada *oven drying*.

Kata Kunci : Gelatin, Kulit kambing *pickle*, *Freeze drying*, *Oven drying*, Kualitas produk.

PRODUCTION AND CHARACTERIZATION GELATIN FROM SKIN GOAT PICKLE BY DRYING METHODS FREEZE AND OVEN DRYING

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ABSTRACT

Gelatin is a type of converted protein obtained through the hydrolysis of collagen with acid or base solution. This research aims to investigation the effect of freeze drying and oven drying during gelatin production process on the quality of the gelatin product. The raw material of pickle goat skin must obtained from the local leather industry, the treatments were of oven drying (P1) and freeze drying (P2) with 3 replication. The research variables tested were yield, pH, gel strength, water, ash, and protein content, viscosity, and gelatin molecular weight analysis best on SDS-PAGE petterns. The collected data was analyzed using the T-test independent, with using SPSS software. The results showed that the difference drying methods significantly affected ($P < 0.05$) on yield, viscosity, and gel strength, but there was no significant difference ($P > 0.05$) on the parameters of pH, water, ash, and protein content, and molecular weight. Gelatin production with different drying methods resulted a yield value of 4.57 ± 0.29 for oven drying and 1.18 ± 0.04 for freeze drying, pH values of 3.46 ± 0.25 and 3.17 ± 0.8 , viscosity values of 10.01 ± 0.7 and 16.25 ± 0.92 , gel strength values of 87 ± 23.26 and 236.66 ± 8.50 , water content values of 7.05 ± 0.09 and 6.1 ± 1.52 , ash content values of 3.21 ± 2.61 and 6.6 ± 0.89 , and protein content values of 61.37 ± 0.33 and 67.37 ± 2.08 , respectively. The molecular weight ranged were 10-180 kDa. It can be concluded that different drying methods affect the yield value, viscosity, and gel strength of gelatin from pickled goat skin, but did not affect pH, water, ash content, and molecular weight. Freeze drying produced better quality gelatin compare to oven drying. Freeze drying produces better quality gelatin than oven drying.

Keywords : Gelatin, Pickle goat skin, Freeze drying, Oven drying, Quality gelatin.