



PRODUKSI GELATIN DENGAN METODE OVEN DRYING DAN FREEZE DRYING DARI BAHAN BAKU KULIT SAPI PICKLE

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INTISARI

Gelatin adalah produk yang diperoleh dari proses hidrolisis parsial kolagen dengan bahan baku jaringan ikat hewan. Produksi gelatin dilakukan dengan tiga tahap yaitu *curing*, ekstraksi, dan pengeringan. Metode pengeringan yang berbeda yaitu *oven drying* dan *freeze drying* dapat menghasilkan kualitas gelatin yang berbeda. Tujuan penelitian ini adalah mengetahui perbedaan kualitas gelatin yang diproduksi dengan metode *oven drying* dan *freeze drying* dari bahan baku kulit sapi *pickle*. Variabel yang diukur meliputi nilai rendemen, derajat keasaman (pH), viskositas, kekuatan gel, kadar air, kadar abu, kadar protein dan analisis berat molekul menggunakan *SDS-PAGE*. Data penelitian diolah dengan analisis statistik *independent sample t-test*. Data hasil penelitian menunjukkan bahwa nilai rendemen, viskositas dan kadar protein berbeda nyata ($p < 0,05$). Hasil rerata kekuatan gel dan viskositas tertinggi diperoleh nilai 442,49 g Bloom dan 4,25 cP pada perlakuan *freeze drying*. Hasil analisis berat molekul menggunakan *SDS-PAGE* diperoleh kisaran 20 sampai 180 kDa. Perlakuan *freeze drying* lebih baik dibandingkan *oven drying* dilihat dari nilai kekuatan gel dan viskositas yang tinggi sesuai dengan manfaat gelatin yang dapat digunakan sebagai bahan penstabil pangan. Metode *freeze drying* dapat digunakan untuk produksi skala industri.

Kata kunci : Kulit sapi *pickle*, *Oven drying*, *Freeze drying*, Kualitas gelatin, Berat molekul



GELATIN PRODUCTION USING OVEN DRYING AND FREEZE DRYING METHODS FROM PICKLE COWHIDE RAW MATERIAL

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ABSTRACT

Gelatin is a product of partial hydrolysis of collagen from raw animal connective tissue. Gelatin production is obtained through three stages: curing, extraction and drying. There were two types of drying methods: oven drying and freeze drying. Both produced different qualities of gelatin. This research aimed to determine the difference in gelatin quality produced by oven drying and freeze drying methods from the pickle cowhide raw material. The variables measured include yield value, acidity (pH), viscosity, gel strength, moisture content, ash content, protein content, and molecular weight analysis using SDS-PAGE. The data obtained was processed using independent t-test analysis. The results of statistical analysis showed that there were significant differences ($p < 0,05$) in yield, viscosity and protein. The highest average of gel strength and viscosity result were 442,49 g Bloom and 4,25 cP in freeze drying method. The results of the SDS-PAGE molecular analysis obtained a range of 20 to 180 kDa. Freeze drying methods better than oven drying, because the gel strength and viscosity result are high in accordance with the benefits of gelatin which can be used as a food stabilizer. This research can be used as a reference for industrial gelatin production using freeze drying.

Keyword : Pickle cowhide, Oven drying, Freeze drying, Gelatin of quality
Molecular weight