

PENGARUH GELATIN DARI BERBAGAI SUMBER KOLAGEN HEWAN TERHADAP SIFAT FISIK DAN SENSORI ES KRIM

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INTISARI

Latar belakang : Bahan penstabil es krim yang beredar di pasaran sebagian besar yaitu gelatin sapi dan babi. Di Indonesia terdapat beberapa kelompok yang tidak dapat mengonsumsi sumber hewani dari sapi maupun babi, sehingga digunakan gelatin alternatif dari sumber ikan dan kerbau. Es krim merupakan produk yang digemari masyarakat, penggunaan gelatin ini diharapkan meningkatkan kandungan protein pada produk es krim sehingga dapat dikonsumsi anak-anak usia pertumbuhan untuk menunjang pemenuhan gizi harian.

Tujuan penelitian : Mengetahui pengaruh berbagai gelatin terhadap sifat fisik, kimia, dan sensori es krim.

Metode penelitian : Jenis penelitian ini adalah eksperimental rancangan acak lengkap satu faktor. Penstabil CMC digunakan sebagai kontrol. Gelatin yang digunakan yaitu gelatin sapi, ikan, dan kerbau dengan konsentrasi yang sama 0,3%. Sifat sensori (uji *descriptive profiling*, uji *ranking*, uji deskriptif, dan uji hedonik). Sifat fisik (*overrun*, daya leleh, dan viskositas), dan sifat kimia (kadar air, abu, lemak, protein, dan karbohidrat) dianalisis dengan metode ANOVA dilanjutkan dengan metode *Duncan* jika terdapat perbedaan yang bermakna. Keseluruhan uji sifat sensori dianalisis secara deskripsi, khusus uji *ranking* dianalisis dengan tabulasi nilai kritis $p < 0,05$ untuk jumlah panelis 6 orang, serta uji hedonik dianalisis dengan metode *Kruskal-Wallis* dilanjutkan dengan metode *Mann-Whitney*.

Hasil penelitian : Penstabil dengan ketiga gelatin tidak berpengaruh ($p > 0,05$) terhadap *overrun*, daya leleh, kadar abu, protein, lemak, dan karbohidrat, serta tingkat kesukaan pada kategori warna, aroma, dan rasa, namun berpengaruh terhadap viskositas, kadar air, dan tingkat kesukaan pada kategori tekstur dan keseluruhan ($p < 0,05$). Es krim gelatin kerbau memiliki perbedaan signifikan terhadap warna jika dibandingkan dengan es krim CMC, serta terdapat perbedaan yang signifikan terhadap tekstur antara es krim gelatin ikan dengan es krim gelatin sapi ($p < 0,05$). Uji kesukaan es krim dengan penstabil gelatin ikan paling disukai secara keseluruhan.

Kesimpulan : Perbedaan jenis gelatin mempengaruhi viskositas, kadar air, tingkat kesukaan pada kategori tekstur dan keseluruhan es krim. Sebagian besar sifat fisik dan kimia es krim tidak dipengaruhi dari bahan penstabil gelatin. Es krim dengan gelatin ikan merupakan es krim yang direkomendasikan.

Kata Kunci: es krim, bahan penstabil, gelatin, sifat fisik, sifat kimia, sifat sensori

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THE EFFECT OF GELATINS OF VARIOUS ANIMAL COLLAGEN RESOURCES TO THE PHYSICAL AND SENSORY PROPERTIES OF ICE CREAM

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ABSTRACT

Background: The ice cream stabilizer on the market mostly comes from cow and pig gelatin. In Indonesia there are some groups of people who can not consume animal sources from cow or pig, so the fish and buffalo gelatin is used as an alternative. The use of gelatin as a stabilizer is expected to increase protein content in ice cream products so it can be consumed by children of growth age to support the fulfillment of daily nutrition.

Objective: This study aims to determine the effect of various gelatin on the physical, chemical, and sensory properties of ice cream.

Methods: This was an experimental study with Completely Random design with one factor. CMC is used as a control. Gelatin used is cow, fish, and buffalo gelatin with the same concentration of 0.3%. Sensory properties were performed using descriptive profiling test, ranking test, descriptive test, and hedonic test. Physical properties (overrun, melting rate, and viscosity), and chemical properties (moisture content, ash, fat, protein, and carbohydrates) were analyzed using ANOVA method followed by Duncan if there were significant differences. The overall test for sensory were analyzed in descriptive, specifically the rank test were analyzed by tabulating the critical values $p < 0.05$ for the number of panelists of 6 persons, and the hedonic test were analyzed by Kruskal-Wallis followed by Mann-Whitney.

Results: The stabilizer with the three gelatin has no effect ($p > 0.05$) on the overrun, the melting rate, ash content, protein, fat, and carbohydrates, as well as the degree of preference in the color, aroma, and taste categories. Ice cream with all three gelatins significantly affected the viscosity, moisture content, and favorite levels in the texture and overall category ($p < 0.05$). Ice cream with buffalo gelatine stabilizer has a significant difference to the color when compared with CMC stabilizer ice cream, and there is a significant difference to the texture between fish gelatin ice cream and cow gelatin ice cream ($p < 0.05$). Hedonic test showed ice cream with fish gelatin were most preferred.

Conclusions: Ice cream with all three gelatin affects viscosity, moisture content, favorability in the texture and overall category. Most ice cream with all three gelatins produces the same physical and chemical qualities as ice cream by using CMC. Ice cream with fish gelatin is the recommended ice cream.

Keywords: ice cream, stabilizer, gelatin, physical, chemical, sensory

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