

SIFAT FISIKOKIMIA, SENSORIS, DAN AKTIVITAS ANTIOKSIDAN ES KRIM DENGAN SUBSTITUSI EKSTRAK DAUN SEMANGGI UNGU (*Oxalis triangularis*)

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INTISARI

Es krim merupakan produk susu yang memiliki nilai kalori tinggi. Kualitas es krim dapat ditingkatkan dengan penambahan atau substitusi bahan yang dapat meningkatkan kandungan antioksidan. Tujuan penelitian ini adalah untuk mengetahui pengaruh substitusi susu dengan ekstrak daun semanggi ungu (*Oxalis triangularis*) terhadap kualitas fisikokimia, aktivitas antioksidan, serta kualitas sensoris pada es krim. Penelitian ini menggunakan persentase substitusi susu dengan ekstrak daun semanggi ungu yang berbeda, yaitu 0%, 15%, dan 30%. Analisis kualitas kimia es krim yang meliputi overrun dan titik leleh. Analisis kualitas kimia meliputi pH dan *total solid*. Aktivitas antioksidan dilakukan dengan metode DPPH (*diphenyl picrylhydrazyl*). Analisis sensoris es krim dilakukan oleh 30 panelis dengan 4 parameter berupa warna, aroma, rasa, tekstur, dan daya terima dengan 7 skala tingkat kesukaan. Penelitian dilakukan menggunakan pengulangan sebanyak tiga kali. Data hasil penelitian dianalisis dengan metode *One Way ANOVA* dan dilanjutkan dengan uji DMRT (*Duncan's Multiple Range Test*). Hasil penelitian menunjukkan substitusi susu dengan ekstrak daun semanggi ungu 0%, 15%, dan 30% berpengaruh nyata ($P < 0,05$) terhadap *overrun* es krim berturut-turut yaitu 14,51, 9,81, 8,77 %; *total solid* 44.65, 38.68, 39.47 %; titik leleh 27, 25, 23 menit; pH 6,43, 6,03, 6,03; sensoris aroma 5,73, 4,63, dan 4,90; sensoris rasa 5,90, 4,30, 4,13. Namun, es krim substitusi susu dengan ekstrak daun semanggi ungu 0%, 15%, dan 30% tidak berpengaruh nyata ($P > 0,05$) terhadap aktivitas antioksidan (%), sensoris warna, sensoris aroma, dan daya terima. Kesimpulannya, substitusi susu dengan ekstrak daun semanggi ungu pada es krim belum dapat meningkatkan aktivitas antioksidan, kualitas fisikokimia, serta kualitas sensoris. Namun, kesukaan terhadap es krim yang disubstitusi dengan daun semanggi ungu secara keseluruhan sama dengan es krim tanpa substitusi.

kata kunci : *Oxalis triangularis*, daun semanggi ungu, es krim, aktivitas antioksidan, kualitas fisikokimia, kualitas sensoris.

PHYSICOCHEMISTRY, SENSORY FEATURES, AND ANTIOXIDANT ACTIVITY OF ICE CREAM SUBSTITUTED WITH EXTRACT OF PURPLE SHAMROCK LEAVES (*Oxalis triangularis*)

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ABSTRACT

Ice cream is a dairy product that has a high caloric value. The quality of the ice cream can be improved by adding or substituting ingredients that have antioxidant content. The purpose of this research is to determine the chemical quality, physical quality, antioxidant activity, and the sensory quality of ice cream with milk substituted by purple shamrock (*oxalis triangularis*) leaf extract. This study used different percentage of cow's milk substitution with purple shamrock leaf extract, namely 0%, 15%, and 30%. Chemical quality analysis of ice cream included overrun and melting point. Chemical quality analysis included pH and total solid. Antioxidant activity was done by DPPH (*diphenyl picrylhydrazyl*) method. Sensory analysis of ice cream was conducted by 30 panelists with 4 parameters such as color, aroma, taste, texture, and acceptability with 7 scales of preference. The research was conducted using repetition three times. The data were analyzed by One Way ANOVA method and continued with DMRT (Duncan's Multiple Range Test). Results showed that the substitution of milk with purple shamrock extract 0%, 15%, and 30% had a significant effect ($P < 0.05$) on ice cream overrun, namely 14.51, 9.81, 8.77%; total solid 44.65, 38.68, 39.47%; melting point 27, 25, 23 minutes; pH 6.43, 6.03, 6.03; sensory aroma 5.73, 4.63, and 4.90; sensory flavor 5.90, 4.30, 4.13, respectively. However, milk substitution ice cream with 0%, 15%, and 30% purple shamrock leaf extract had no significant effect ($P > 0.05$) on antioxidant activity (%), color sensory, texture sensory, and acceptability. In conclusion, the substitution of milk with purple clover leaf extract in ice cream cannot increase antioxidant activity, physiocemhical, and sensory quality. However, the overall liking for ice cream substituted with purple clover leaves is the same as ice cream without substitution.

Keywords: *Oxalis triangularis*, purple shamrock leaf, ice cream, antioxidant activity, physical quality, sensory quality.