KUALITAS FISIKO-KIMIA DAN ANKTIVITAS ANTIOKSIDAN ES KRIM DENGAN BAHAN DASAR SUSU KAMBING DAN SARI KEDELAI HITAM (*Glycine max* (L) Merrit)

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INTISARI

Penelitian ini bertujuan untuk mengetahui kualitas fisik (*overrun*, dan titik leleh), kimia (kadar *total solid*, kadar lemak, dan kadar *free fatty acid* (FFA)), aktivitas antioksidan, dan sifat organoleptik es krim dengan kombinasi susu kambing dan sari kedelai hitam. Es krim dibuat dari kombinasi susu kambing dan sari kedelai hitam perbandingan 100:0, 75:25, 50:50, disimpan selama 0, 15, dan 30 hari. Hasil penelitian menunjukkan, semakin banyak subtitusi sari kedelai hitam dalam es krim dapat menurunkan *overrun*, titik leleh, kadar FFA, sifat organoleptik, meningkatkan aktivitas antioksidan, dan tidak berpengaruh nyata ($p>0,05$) terhadap kadar *total solid* dan kadar lemak. Es krim yang dibuat dari susu kambing (100:0) maupun kombinasi susu kambing dan sari kedelai hitam (75:25, 50:50) berturut-turut mempunyai *overrun* 27,94±2,20%, 31,67±2,62%, dan 31,40±3,62%, titik leleh 41,98±4,93 menit, 29,71±3,78 menit, dan 27,52±7,91 menit, rerata kadar *total solid* 33,65±1,74%, rerata kadar lemak 4,72±0,53%, kadar FFA 1,06±0,04%, 0,99±0,07%, 0,89±0,11%, aktivitas antioksidan es krim 14,50±7,84%, 29,41±6,60%, dan 46,68±15,39%. Penyimpanan es krim yang semakin lama dapat menurunkan aktivitas antioksidan dan meningkatkan kadar FFA. Rerata aktivitas antioksidan es krim selama 0, 15, dan 30 hari berturut-turut 34,22±20,26%, 34,38±17,12%, 21,37±8,85% dan kadar FFA berturut-turut 0,93±0,10%, 0,95±0,12%, dan 1,05±0,05%. Rerata es krim memiliki skor warna 6,07±1,64, aroma 4,39±1,15, rasa 6,12±1,09, tekstur 5,10±1,08, dan daya terima 6,38±1,32. Kualitas es krim terbaik yang dibuat dari susu kambing. Substitusi sari kedelai hitam dalam pembuatan es krim susu kambing memperpanjang masa simpan, menurunkan *overrun*, titik leleh, sifat organoleptik meliputi warna, bau, dan daya terima es krim.

Kata kunci : Kualitas fisik, Kualitas kimia, Aktivitas antioksidan, Sifat organoleptik, Penyimpanan.

PHYSICO-CHEMICAL QUALITY AND ANTIOXIDANT ACTIVITY OF ICE CREAM FROM GOAT MILK AND BLACK SOYBEAN (*Glycine max* (L) Merrit)

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ABSTRACT

This study aimed to know physical qualities (overrun, melting point), chemical qualities (total solid, fat, free fatty acid (FFA) contents), antioxidant activity, and organoleptic properties of ice cream which was made by combination of goat milk and black soybean. Ratio of goat milk and black soybean were 100:0, 75:25, 50:50 which had been stored for 0, 15 and 30 days. The result showed that the increasing black soybean added in ice cream could be decreasing: overrun, melting point, FFA, and organoleptic properties but increasing antioxidant activity, and it was not significantly ($p>0.05$) in total solid and fat contents. Ice cream were made from goat milk (100:0) and combination of goat milk and black soybean (75:25, 50:50) had overrun 27.94±2.20%, 31.67±2.62%, 31.40±3.62%, melting point 41.98±4.93 m, 29.71±3.78 m, 27.52±7.91 m, content of total solid 33.65±1.74%, fat 4.72±0.53%, FFA: 1.06±0.04%, 0.99±0.07%, 0.89±0.11%, antioxidant activities 14.50±7.84%, 29.41±6.60%, 46.68±15.39%. Ice cream which stored longer could be decreasing antioxidant activities and increasing FFA contents. Ice cream that was stored for 0, 15, and 30 days had antioxidant activities 34.22±20.26%, 34.38±17.12%, 21.37±8.85%, and fat contents 0.93±0.10%, 0.95±0.12%, 1.05±0.05% respectively. Average score of ice cream's color of 6.07±1.64, flavour of 4.39±1.15, taste of 6.12±1.09, texture of 5.10±1.08, acceptability of 6.38±1.32. The best quality of ice cream was made from goat milk. Substitution of black soybean played the major role in extending the shelf life, decreasing overrun, melting rate, organoleptic properties such as color, flavour, acceptabillity of ice cream.

Key word: Physical quality, Chemical quality, Antioxidant activity, Organoleptic Properties, Stored.