

THE EFFECT OF INCORPORATION OF GOAT MILK AND SOY  
MILK AS A COW MILK REPLACEMENT ON THE QUALITY OF  
ICE CREAM

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**THE EFFECT OF INCORPORATION OF GOAT MILK AND SOY  
MILK AS A COW MILK REPLACEMENT ON THE QUALITY OF  
ICE CREAM**

**By**

**NURLIANA BINTI AHMAD LOTPI**

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requirements for the Degree of Bachelor of Food Science  
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## DECLARATION

I hereby declare that the thesis is based on my original work except for quotations and citations which have been duly acknowledged.



NURLIANA BT AHMAD LOTPI

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PN. FARIDAH BT YAHYA

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## **THE EFFECT OF INCORPORATION OF GOAT MILK AND SOY MILK AS A COW MILK REPLACEMENT ON THE QUALITY OF ICE CREAM**

### **Abstract**

This study was conducted to determine the effects on chemical, physical and sensory characteristics of ice cream after incorporation of goat milk and soy milk as a cow milk replacement. There are 6 formulation of ice cream were prepared in which one formulation was a control sample with 100% cow milk and 5 formulations with different proportions of goat milk and soy milk. Research has shown that percentage of fat, protein and lightness of ice cream increased with increased proportion of goat milk. A group of 50 panelists were involved in the sensory evaluation. Sensory evaluation of ice cream showed significant differences ( $p < 0.05$ ) in most of sensory attributes between cow milk and incorporation goat milk and soy milk ice cream with higher percentage of goat milk except for attributes colour which is no significant differences between the formulation. From this study, incorporation of soymilk also acceptable but less percentage in their proportion in ice cream. There were also observed that 100% goat milk improving colour, sweetness, creaminess, texture and overall acceptance for ice cream. Result showed that ice cream with 100% goat milk defined as the most optimum formulation based on high percentage of fat, protein and also rated the best acceptable in colour, flavour and texture by consumer panelists.

## **PENGGUNAAN SUSU KAMBING DAN SUSU SOYA SEBAGAI BAHAN GANTIAN SUSU LEMBU DALAM PENGHASILAN AIS KRIM**

### **ABSTRAK**

Kajian ini dilakukan untuk menentukan kesan terhadap ciri-ciri kimia, fizikal dan sensori ais krim setelah penambahan susu kambing dan susu soya bagi menggantikan susu lembu. Terdapat 6 formulasi ais krim yang dihasilkan di mana satu formulasi adalah kawalan dengan 100% susu lembu dan 5 formulasi daripada gabungan susu kambing dan susu soya pada nisbah yang berbeza. Kajian ini menunjukkan semakin meningkat peratus penambahan susu kambing, semakin tinggi peratus lemak, protein dan kecerahan warna pada ais krim. Seramai 50 panel terlibat dalam penilaian sensori terhadap 6 formulasi ais krim. Daripada penilaian sensori menunjukkan terdapat perbezaan signifikan ( $p < 0.05$ ) terhadap semua atribut sensori kecuali pada atribut warna yang tidak menunjukkan perbezaan signifikan dengan peningkatan nisbah susu kambing dalam ais krim. Daripada kajian ini juga, penambahan susu soya juga boleh diterima pengguna tetapi pada nisbah susu soya yang paling rendah. Didapati juga penggunaan 100% susu kambing dapat membaiki warna, kemanisan, rasa berlemak, tekstur dan penerimaan keseluruhan untuk ais krim. Keputusan menunjukkan ais krim dengan 100% susu kambing adalah formulasi yang paling optimum berdasarkan peratus kandungan lemak dan protein yang tinggi serta darjah penerimaan atribut warna, rasa dan tekstur yang paling diterima pengguna.