

Abstrak

FORMULASI ES KRIM YOGHURT SINBIOTIK *Sumburonda* (SUSU KAMBING UBI JALAR UNGU DENGAN PURE TERONG BELANDA) SEBAGAI MAKANAN SELINGAN DIABETES MELITUS: FISIK, NILAI GIZI, DAN SENSORI

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Latar Belakang: Diabetes Melitus tipe 2 pemicunya stress oksidatif. Produk pangan antioksidan menjadi alternatif penanganan diabetes. Tujuan penelitian mengetahui pengaruh proporsi susu kambing:ekstrak ubi ungu, pure terong belanda, dan interaksinya terhadap *melting rate*, vitamin C, protein total, sensori es krim *Sumburonda*. Formula terbaik diuji pH, gula reduksi, total BAL.

Metodologi: Penelitian menggunakan RAK dengan perlakuan proporsi susu kambing:ekstrak ubi ungu (90:10, 80:20, 70:30) dan pure terong belanda (10%, 20%, 30%). *Melting rate* diukur menggunakan *stopwatch*, vitamin C titrasi iodium, protein total metode Kjehdal, pH menggunakan pH meter, gula reduksi metode *Nelson-somogyi*, total BAL metode TPC, sensori menggunakan skoring. Data dianalisis Anova, dilanjutkan DMRT jika terdapat signifikansi. Formula terbaik menggunakan indeks efektivitas.

Hasil Penelitian: Proporsi susu kambing:ekstrak ubi ungu meningkatkan protein total dan beberapa parameter sensori ($p < 0,05$). Pure terong belanda meningkatkan vitamin C, protein total, beberapa parameter sensori ($p < 0,05$). Interaksinya meningkatkan vitamin C, protein total, seluruh parameter sensori ($p < 0,05$). Formula terbaik adalah A3B3 mengandung vitamin C 98,27 mg, protein total 14,93 g, pH 3,9, gula reduksi 5,3 g, total BAL $1,1 \times 10^9$ CFU/mL, warna 4,09; aroma 3,49; tekstur 2,95; rasa 1,84; keseluruhan 3,33.

Kesimpulan: Es krim *Sumburonda* berpotensi menjadi selingan fungsional bagi penderita diabetes.

Kata Kunci: diabetes melitus, susu kambing, ubi jalar ungu, terong belanda, yoghurt, dan es krim yoghurt sinbiotik

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Abstract
SYNBIOTIC *Sumburonda* YOGHURT ICE CREAM FORMULATION
(PURPLE SWEET POTATO GOAT'S MILK WITH TAMARILLO PUREE)
AS AN INTERMEDIATE FOOD FOR DIABETES MELLITUS:
PHYSICAL, NUTRITIONAL VALUE, AND SENSORY

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Background: Type 2 diabetes mellitus triggered by oxidative stress. Antioxidant food products are alternative for treating diabetes. The aim of research was to determine the effect of the proportion of goat's milk: purple sweet potato extract, tamarillo puree, and their interaction on melting rate, vitamin C, total protein, sensory properties of *Sumburonda* ice cream. The best formula is tested for pH, reducing sugar, total LAB.

Methods: The research used RAK with proportion of goat's milk: purple sweet potato extract (90:10, 80:20, 70:30), tamarillo puree (10%, 20%, 30%). Melting rate was measured using stopwatch, vitamin C iodine titration, total protein the Kjehdal, pH using pH meter, reducing sugar Nelson-somogyi, total LAB TPC, sensory using scoring. Data were analyzed by Anova, followed by DMRT if there was significance. The best formula uses effectiveness index.

Result: The proportion of goat's milk: purple sweet potato extract increased total protein as well as several sensory parameters ($p < 0.05$). The percentage of tamarillo puree increased vitamin C, total protein, and several sensory parameters ($p < 0.05$). The interaction increased vitamin C, total protein, and all sensory parameters ($p < 0.05$). The best formula is made from A3B3 which contains vitamin C 98.27 mg, total protein 14.93 g, pH 3.9, reducing sugar 5.3 g, total BAL 1.1×10^9 CFU/mL, color 4.09; aroma 3.49; texture 2.95; taste 1.84; 3.33 overall.

Conclusion: *Sumburonda* synbiotic yoghurt ice cream has potential to be a functional snack for diabetes sufferers.

Keyword: diabetes mellitus, goat's milk, purple sweet potato, tamarillo, yoghurt, and synbiotic yoghurt ice cream

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