

TOTAL BAKTERI PROBIOTIK DAN AKTIVITAS ANTIOKSIDAN YOGHURT JAGUNG DENGAN VARIASI PENAMBAHAN MADU

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INTISARI

Yoghurt berbahan dasar susu hewani tidak bisa diterima oleh penderita intoleran atau alergi laktosa maupun masyarakat bergaya hidup vegetarian. Produk yoghurt nabati seperti yoghurt jagung manis (*Zea mays* convar. *saccharata*) dapat menjadi alternatif, karena selain aman dikonsumsi juga memiliki gizi tinggi, mudah didapat bahan bakunya, dan harga produk lebih murah. Penambahan madu sebagai substitusi gula menjadikan yoghurt jagung aman dikonsumsi penderita diabetes serta dapat meningkatkan cita rasa dan kandungan gizi. Penelitian ini bertujuan untuk mengetahui konsentrasi penambahan madu yang tepat dalam produk yoghurt jagung manis, total bakteri probiotik, aktivitas antioksidan, dan kualitas yoghurt jagung manis. Pada penelitian ini digunakan 3 perlakuan yoghurt jagung yang dibagi menjadi penambahan madu 0% (kontrol), penambahan madu 5%, dan penambahan madu 10%. Penelitian ini dilakukan dengan pengamatan total bakteri probiotik, derajat keasaman (pH), serta pengukuran kadar asam laktat tiap interval 4 jam selama waktu inkubasi 16 jam dan pengukuran aktivitas antioksidan, total padatan, kadar lemak, kadar protein, uji organoleptik (rasa, aroma, warna, kekentalan, dan tekstur), dan karakteristik mutu yoghurt sesuai standar SNI 2981:2009. Penghitungan total bakteri probiotik dengan metode *Total Plate Count*, aktivitas antioksidan dengan metode DPPH, kadar lemak dengan menggunakan metode ekstraksi soxhlet, dan kadar protein dengan menggunakan metode kjeldahl. Hasil analisis penelitian dianalisis dengan uji *one way ANOVA* menggunakan *software* SPSS versi 16. Berdasarkan hasil penelitian dapat disimpulkan bahwa penambahan madu terbaik pada yoghurt jagung adalah dengan konsentrasi madu 10% secara nyata dapat meningkatkan total bakteri probiotik sebanyak $2,147 \times 10^7$ CFU/ml, aktivitas antioksidan sebanyak 6,565%, pH dengan nilai 3,97, kadar asam laktat sebesar 1,13%, total padatan sebesar 35,5%, kadar lemak sebanyak 0,55%, kadar protein sebanyak 3,48% dan kualitas yoghurt jagung manis yang dihasilkan bertekstur kental, memiliki aroma khas yoghurt dan berasa asam.

Kata kunci : yoghurt nabati, jagung, madu, bakteri probiotik, aktivitas antioksidan

THE TOTAL PROBIOTIC BACTERIA AND THE ANTIOXIDANT LEVEL OF CORN YOGHURT WITH THE ADDITION OF HONEY VARIATIONS

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ABSTRACT

Lactic acid bacteria has a role in fermented yoghurt. People with lactose intolerant and vegan can not consume dairy-based yoghurt. Vegetable based yoghurt products such as sweet corn yoghurt (*Zea mays* convar. *saccharata*), can be an alternative because it is safe for lactose intolerant intake, rich in nutrition, raw materials are easy to obtain, and product prices are cheaper. The honey addition as a substitute of sugar makes corn yoghurt safe for diabetics, and improve the taste and nutritional content. This study aims to determine the appropriate concentration of honey and its effect on the total probiotic bacteria, the antioxidant activity, and the quality of corn yoghurt. Three different honey concentrations were used in this study which were 0% honey additions (control), 5% honey additions, and 10% honey additions. This study observed the total probiotic bacteria, pH, and the measured lactic acid content which incubated every 4 hours in 16 hours and the measurement of antioxidant activity, the total solids, the fat content, the protein content, the organoleptic test (flavor, aroma, color, viscosity, and texture), and the quality characteristics of yoghurt according to Indonesian National Standard 2981:2009. The total count of probiotic bacteria used Total Plate Count method, the antioxidant activity was observed with DPPH method, the fat content used soxhlet extraction method, and the protein content used kjeldahl method. The results were analyzed by one way ANOVA test used SPSS version 16. Based on the results of the study it can be concluded that the addition of honey at concentration 10% showed the best result. It would increase the total of probiotic bacteria as much as 2.147×10^7 CFU/ml, the antioxidant activity as much as 6.565%, pH at 3.97, the lactic acid content as many as 1.13%, the total solids as much as 35.5%, the fat content as many as 0.55%, the protein content as many as 3.48% and the quality of corn yoghurt consisted of viscosity texture, specific acid of yoghurt aroma and sour flavor.

Keywords : vegetable yoghurt, corn, honey, probiotic bacteria, antioxidant activity