

RINGKASAN

Nira adalah bahan utama dalam pembuatan gula kelapa. Kualitas nira hasil penyadapan yang baik akan menghasilkan kualitas gula kelapa yang baik. Namun, kandungan nira menyebabkan nira terfermentasi alami oleh mikroba selama proses penyadapan sehingga kualitas nira menjadi buruk. Untuk menjaga kualitas nira, perlu ditambahkannya pengawet pada proses penyadapan. Bahan pengawet alami nira yang digunakan diantaranya sabut kelapa tua dan muda serta kapur. Penelitian ini bertujuan untuk: 1) Mengetahui pengaruh formula pengawet alami nira berbahan sabut kelapa dan kapur terhadap kualitas gula kelapa cetak yang dihasilkan; 2) Mengetahui pengaruh waktu penyadapan nira terhadap kualitas gula kelapa cetak yang dihasilkan; 3) Mengetahui kombinasi waktu penyadapan nira dan formula pengawet alami nira berbahan sabut kelapa dan kapur yang menghasilkan kualitas gula kelapa cetak terbaik.

Rancangan percobaan yang digunakan pada penelitian ini adalah Rancangan Acak Kelompok (RAK). Faktor pertama yang diteliti yaitu formula pengawet alami nira (F) yang terdiri atas serbuk sabut kelapa tua : kapur (b/b) (1:9; 2:8; 3:7; 4:6; 5:5) dan serbuk sabut muda : kapur (b/b) (1:9; 2:8; 3:7; 4:6; 5:5) dengan masing-masing konsentrasi 5%. Faktor kedua yaitu waktu penyadapan nira (W) yang terdiri atas penyadapan sore hari dan penyadapan pagi hari. Variabel yang diamati diantaranya kadar air, kadar abu, kadar gula reduksi, kadar gula sukrosa, kadar gula total, total padatan tak terlarut, dan sensori (warna, tekstur, aroma, tingkat rasa manis, dan kesukaan). Data analisis menggunakan analisis ragam (ANOVA), dan apabila berpengaruh nyata dilanjutkan uji *Duncan Multiple Range Test* (DMRT) pada taraf $\alpha = 5\%$.

Hasil penelitian menunjukkan bahwa formula pengawet berpengaruh terhadap kadar air, kadar abu dan kadar gula reduksi gula kelapa. Sedangkan waktu penyadapan nira berpengaruh terhadap kadar abu gula kelapa cetak. Kombinasi perlakuan terbaik berdasarkan uji indeks efektivitas, kesesuaian terhadap SNI, dan aspek kesukaan panelis adalah pengawet alami nira berbahan sabut kelapa muda : kapur dengan proporsi 2:8 (b/b) dan waktu penyadapan pagi hari. Kombinasi tersebut menghasilkan gula kelapa cetak dengan karakteristik nilai rata-rata kadar air 3,69%; abu 2,72 %; gula reduksi 2,85%; sukrosa 81,82%; gula total 84,67%, total padatan tak terlarut 2,12%; warna 3,35 (cokelat), tekstur 3,20 (cukup keras), aroma 3,28 (cukup khas gula kelapa), tingkat rasa manis 3,50 (manis) dan tingkat kesukaan 3,15 (cukup suka).

SUMMARY

Palm sap is the main raw material in the production of palm sugar. Good quality sap obtained from tapping will produce good quality palm sugar. However, the composition of sap causes it to undergo natural fermentation by microorganisms during the tapping process, which decreases its quality. To maintain the quality of sap, preservatives need to be added during tapping. Natural preservatives for sap include old and young coconut husks as well as lime.

This study aimed to: (1) determine the effect of natural sap preservative formulas made from coconut husk and lime on the quality of molded palm sugar; (2) determine the effect of tapping time on the quality of molded palm sugar; and (3) determine the best combination of tapping time and natural sap preservative formulas made from coconut husk and lime that produces the best quality molded palm sugar.

The experimental design used in this research was a Randomized Block Design (RBD). The first factor was the natural sap preservative formula (F), consisting of old coconut husk powder : lime (w/w) (1:9; 2:8; 3:7; 4:6; 5:5) and young coconut husk powder : lime (w/w) (1:9; 2:8; 3:7; 4:6; 5:5) with each concentration of 5%. The second factor was tapping time (W), consisting of evening tapping and morning tapping. The observed variables included moisture content, ash content, reducing sugar, sucrose, total sugar, total insoluble solids, and sensory attributes (color, texture, aroma, sweetness, and overall preference). Data were analyzed using analysis of variance (ANOVA), and if significant, followed by Duncan's Multiple Range Test (DMRT) at a 5% significance level.

The results showed that the preservative formulas significantly affected the moisture content, ash content, and reducing sugar of palm sugar. Meanwhile, tapping time significantly affected the ash content of molded palm sugar. The best treatment combination based on effectiveness index, conformity to Indonesian National Standard (SNI), and panelist preference was the natural preservative made from young coconut husk : lime with a ratio of 2:8 (w/w) and morning tapping time. This combination produced molded palm sugar with the following characteristics: moisture content 3.69%; ash 2.72%; reducing sugar 2.85%; sucrose 81.82%; total sugar 84.67%; total insoluble solids 2.12%; color 3.35 (brown); hardness 3.20 (moderately hard); aroma 3.28 (distinctive enough of palm sugar); sweetness 3.50 (sweet); and preference 3.15 (moderately liked).