

RINGKASAN

Nira kelapa mengandung gula reduksi dan asam amino yang merupakan substrat reaksi *Maillard* selama proses pemasakan nira kelapa. Reaksi *Maillard* menghasilkan melanoidin yang merupakan senyawa berwarna coklat. Selain itu, reaksi *Maillard* menghasilkan *Maillard Reaction Product* (MRP) yang mempunyai sifat antioksidan. Saat ini informasi mengenai perkembangan reaksi *Maillard* selama pemasakan nira kelapa masih terbatas. Reaksi *Maillard* dapat ditingkatkan dengan cara memilih tipe dan jumlah inisial reaktan. Oleh karena itu, jenis asam amino dan konsentrasi asam amino menjadi faktor dalam penelitian ini. Penelitian ini bertujuan untuk 1) mengetahui perubahan intensitas *browning* nira yang ditambahkan asam amino selama pemasakan serta gula kelapa kristal yang dihasilkan; 2) mengetahui perubahan karakteristik kimia nira kelapa yang ditambahkan asam amino selama pemasakan serta gula kelapa kristal yang dihasilkan.

Rancangan percobaan yang digunakan dalam penelitian ini adalah Rancangan Acak Kelompok. Faktor yang diteliti adalah jenis asam amino (A), terdiri atas A1 = Arginin dan A2 = Histidin serta konsentrasi asam amino (K) yang terdiri atas, K1 = 0,4 mM, K2 = 0,8 mM, K3 = 1,2 mM. Perlakuan disusun secara faktorial dengan 6 kombinasi perlakuan dan 4 kali ulangan sehingga diperoleh 24 unit percobaan. Setiap unit percobaan disampling pada suhu 26°C, 80°C, 100°C dan 118°C.

Hasil penelitian menunjukkan bahwa perubahan intensitas *browning* tercepat selama pemasakan nira adalah pada penambahan asam amino sebanyak 1,2 mM. Perubahan intensitas *browning* selama pemasakan nira dengan penambahan histidin lebih cepat dibandingkan dengan penambahan arginin. Penambahan asam amino sebanyak 1,2 mM menghasilkan gula kelapa kristal dengan intensitas *browning* yang paling tinggi. Konsentrasi asam amino sebanyak 1,2 mM menyebabkan penurunan kadar gula reduksi paling cepat selama pemasakan. Gula kelapa kristal dengan penambahan 1,2 mM asam amino memiliki kadar gula reduksi yang paling rendah serta kadar gula total dan sukrosa yang paling tinggi. Jenis asam amino tidak memberikan pengaruh terhadap kadar gula reduksi, kadar sukrosa dan kadar air selama pemasakan maupun terhadap gula kelapa kristal yang dihasilkan.

SUMMARY

Coconut neera contains reducing sugars and amino acids which are substrates of Maillard reaction during cooking of coconut neera. Maillard reaction produce melanoidin which is a compound that has brown color. Beside produces it, Maillard Reaction Products (MRP) have antioxidant activity. Currently information about the development of Maillard reaction during cooking of coconut neera is still limited. The Maillard reaction can be improved by selecting the type and amount of the reactant initials. Therefore, type of amino acid and initial concentration of amino acid become factors that examined in this study. This study aims to 1) to know changes in the intensity of sugared browning added amino acid during cooking and the resulting coconut sugar sugar; 2) to know the change of chemical characteristics of coconut sugar added amino acids during cooking and coconut sugar produced.

The research used experimental design with Randomized Block Design. The factors studied were the type of amino acid (A), consisting of A1 = Arginin and A2 = Histidine and amino acid concentration (K) consisting of, K1 = 0.4 mM, K2 = 0.8 mM, K3 = 1.2 mM. The treatments were arranged by factorial with 6 treatment combinations and 4 replications so that 24 units of experiments were obtained. Each experimental unit was sampled at 26°C, 80°C, 100°C and 118°C.

The results showed that the fastest change of browning intensity during cooking of coconut neera was in addition of 1.2 mM amino acid. Changes in browning intensity during cooking of coconut neera with the addition of histidine faster than the addition of arginine. The addition of 1.2 mM amino acids produces the most coconut sugar with the highest browning intensity. Amino acid concentrations of 1.2 mM cause the fastest reduction of sugar content during cooking. Coconut sugar with 1.2 mM addition of amino acids have the lowest reducing sugar content and the highest total sugar and sucrose. The type of amino acid has no effect on reducing sugar content, total sugar, sucrose content and moisture content during cooking or even coconut sugar produced.