

RINGKASAN

Coconut aminos merupakan kecap asin berbahan dasar nira kelapa yang difermentasi dengan metode fermentasi moromi. *Coconut aminos* merupakan solusi permasalahan kandungan alergen pada kecap kedelai sekaligus sebagai wujud pemanfaatan sumber daya dan representasi dari kearifan lokal yang ada di wilayah Banyumas dan sekitarnya. Proses fermentasi moromi umumnya dilakukan secara spontan dan membutuhkan waktu yang lama. Penambahan starter pada proses ini dapat mempercepat waktu fermentasi. Adanya pengadukan selama proses fermentasi akan melancarkan proses fermentasi dengan meratakan substrat dan sel. Penelitian ini bertujuan untuk 1) Mengetahui pengaruh konsentrasi starter terhadap karakteristik fisikokimia dan sensoris *Coconut aminos*, 2) Mengetahui pengaruh frekuensi pengadukan terhadap karakteristik fisikokimia dan sensoris *Coconut aminos*, 3) Mengetahui kombinasi dengan hasil terbaik antara perlakuan konsentrasi inokulum dan frekuensi pengadukan didasarkan pada aspek fisikokimia dan sensoris *Coconut aminos*.

Penelitian ini menggunakan Rancangan Acak Kelompok (RAK) dengan 12 kombinasi perlakuan (4 konsentrasi starter: 0%, 5%, 10%, 15%; dan 3 frekuensi pengadukan: tanpa pengadukan, setiap hari, setiap 3 hari). Fermentasi moromi dilakukan dengan penambahan kadar garam sebanyak 20%. Fermentasi dilakukan pada wadah berupa kendi tanah liat dengan durasi fermentasi selama 30 hari. Proses dilanjutkan dengan pemasakan hingga mencapai TPT $\pm 50^\circ$ brix. Analisis kimia yang dilakukan meliputi pH, TPT, kadar gula reduksi, kadar gula total, protein terlarut, jumlah mikroba, kadar air produk, serta uji sensoris dengan metode uji mutu hedonik dan uji hedonik. Analisis data dilakukan dengan *software SPSS Statistics version 27* dengan uji *Two-Way ANOVA*, Uji *Friedman*, Uji lanjut *Duncan's Multiple Range Test* (DMRT), dan Uji lanjut *Wilcoxon Signed Rank*.

Berdasarkan penelitian yang telah dilaksanakan, konsentrasi starter berpengaruh nyata terhadap pH, Total Padatan Terlarut (TPT), gula reduksi, protein terlarut, dan jumlah mikroba selama fermentasi. Selama fermentasi, konsentrasi starter berpengaruh pada penurunan nilai pH, TPT, gula reduksi, dan protein terlarut, diakibatkan adanya aktivitas mikroba seperti pembentukan asam organik, pemecahan kadar gula, aktivitas enzim invertase dan enzim protease. Semakin tinggi konsentrasi starter, semakin intensif aktivitas mikroba yang terjadi. Konsentrasi starter berpengaruh pada jumlah mikroba yang berkaitan dengan fase kehidupan mikroba selama fase fermentasi. Semakin tinggi konsentrasi starter yang digunakan, semakin memperpendek fase lag mikroba dan langsung masuk ke fase pertumbuhan. Frekuensi pengadukan berpengaruh nyata terhadap gula reduksi dan protein terlarut selama fermentasi, serta kadar gula reduksi dan kadar gula total produk *Coconut aminos*. Perlakuan tanpa pengadukan menghasilkan kadar gula reduksi dan protein terlarut yang paling tinggi selama fermentasi dibandingkan frekuensi pengadukan lainnya. Pada produk *Coconut aminos*, kadar gula reduksi dan kadar gula total paling tinggi juga didapatkan oleh perlakuan tanpa pengadukan. Kombinasi perlakuan berpengaruh pada atribut sensoris seperti warna, aroma, rasa asin, rasa manis, dan kekentalan. Sampel yang mendapatkan

penilaian kesukaan keseluruhan paling tinggi oleh panelis adalah sampel dengan konsentrasi 5% dan tanpa pengadukan. Perlakuan terbaik diperoleh pada konsentrasi starter 5% tanpa pengadukan, dengan kadar garam 22,52% dan kadar protein total 0,8%.



SUMMARY

Coconut aminos is a soy sauce made from coconut sap fermented using the moromi fermentation method. Coconut aminos is a solution to the problem of allergen content in soy sauce as well as a form of resource utilization and a representation of local wisdom in the Banyumas area and its surroundings. The moromi fermentation process is generally carried out spontaneously and requires a long time. The addition of a starter in this process can accelerate the fermentation time. Stirring during the fermentation process will facilitate fermentation by evenly distributing the substrate and cells. This research aims to: 1) Determine the effect of starter concentration on the physicochemical and sensory characteristics of Coconut aminos, 2) Determine the effect of stirring frequency on the physicochemical and sensory characteristics of Coconut aminos, 3) Determine the best combination between starter concentration and stirring frequency treatments based on the physicochemical and sensory aspects of Coconut aminos.

This research used a Randomized Complete Block Design (RCBD) with 12 treatment combinations (4 starter concentrations: 0%, 5%, 10%, 15%; and 3 stirring frequencies: without stirring, daily, every 3 days). Moromi fermentation was carried out with the addition of 20% salt concentration. Fermentation was conducted in clay jar containers with a fermentation duration of 30 days. The process was continued with heating until reaching TSS (Total Soluble Solids) $\pm 50^\circ\text{Brix}$. Chemical analyses conducted included pH, TSS, reducing sugar content, total sugar content, soluble protein, microbial count, moisture content of the product, as well as sensory tests using hedonic quality test and hedonic test methods. Data analysis was conducted using SPSS Statistics version 27 with Two-Way ANOVA test, Friedman test, Duncan's Multiple Range Test (DMRT), and Wilcoxon Signed Rank test.

Based on the research conducted, starter concentration significantly affected pH, Total Soluble Solids (TSS), reducing sugar, soluble protein, and microbial count during fermentation. During fermentation, starter concentration affected the decrease in pH, TSS, reducing sugar, and soluble protein, caused by microbial activity such as organic acid formation, sugar breakdown, and the activity of invertase and protease enzymes. The higher the starter concentration, the more intensive the microbial activity that occurred. Starter concentration affected microbial count related to the microbial life phases during fermentation. The higher the starter concentration used, the shorter the microbial lag phase, and directly entering the growth phase. Stirring frequency significantly affected reducing sugar and soluble protein during fermentation, as well as the reducing sugar and total sugar content of the Coconut aminos product. Treatments without stirring produced the highest reducing sugar and soluble protein content during fermentation compared to other stirring frequencies. In the Coconut aminos product, the highest reducing sugar and total sugar content was also obtained from the treatment without stirring. The combination treatment affected sensory attributes such as color, aroma, salty taste, sweet taste, and viscosity. The sample that received the

highest overall liking score by panelists was the sample with 5% starter concentration and without stirring. The best treatment was obtained at 5% starter concentration without stirring, with a salt content of 22.52% and total protein content of 0.8%.

