

**PROFIL KIMIA DAN AKTIVITAS ANTIOKSIDAN NAMMONG
BERBASIS FERMENTASI JERUK KALAMANSI (*Citrus microcarpa*)
PADA BERBAGAI KONSENTRASI GARAM**

INTISARI

Oleh:

REZA FATUR ROHMAN

22/494052/TP/13410

Nammong merupakan minuman fermentasi tradisional berbahan dasar jeruk kalamansi yang berpotensi sebagai minuman fungsional karena mengandung senyawa fenolik, flavonoid, dan aktivitas antioksidan. Namun, bukti ilmiah mengenai pengaruh konsentrasi garam terhadap profil kimia dan indikator potensi fungsional nammong masih terbatas. Oleh karena itu, penelitian ini bertujuan untuk mengetahui pengaruh perbedaan konsentrasi garam selama fermentasi jeruk kalamansi terhadap profil kimia dan sifat fungsional minuman nammong.

Pada penelitian ini, digunakan empat variasi konsentrasi garam, yaitu 7%, 14%, 21%, dan 28%. Jeruk kalamansi, diberi garam, dikeringkan dengan dehidrator pada 40°C selama 24 jam, kemudian ditambahkan 650 mL larutan garam dan disimpan selama 28 hari pada suhu 4°C untuk melangsungkan proses fermentasi. Setelah fermentasi selesai, produk mengalami tahap *steam* (pengukusan) selama total 3 jam sebagai bagian dari proses akhir. Sampel kemudian dipisahkan menjadi dua fraksi, yaitu fraksi ekstrak buah jeruk kalamansi dan fraksi air fermentasi. Parameter yang dianalisis meliputi pH, total asam tertitrisasi (TAT), gula total, aktivitas antioksidan metode DPPH dan FRAP, total fenolik, serta total flavonoid.

Hasil penelitian menunjukkan bahwa peningkatan konsentrasi garam menurunkan nilai pH. Total asam tertitrisasi dan gula menunjukkan respons yang fluktuatif. Aktivitas antioksidan DPPH menurun pada ekstrak, tetapi meningkat pada air fermentasi, sementara aktivitas antioksidan FRAP tidak menunjukkan perbedaan nyata antar perlakuan. Total fenolik dan total flavonoid juga menunjukkan pola perubahan yang fluktuatif. Secara keseluruhan, variasi konsentrasi garam berpengaruh terhadap profil kimia dan indikator potensi fungsional nammong, tetapi hasil penelitian ini belum cukup untuk menetapkan satu konsentrasi optimum secara komprehensif. Hasil ini memberikan informasi awal mengenai pengaruh konsentrasi garam pada produk akhir nammong sehingga diharapkan dapat digunakan sebagai data awal untuk penelitian lanjutan mengenai optimasi proses fermentasi nammong.

Kata kunci: Nammong, jeruk kalamansi, fermentasi, garam, potensi fungsional

**CHEMICAL CHARACTERIZATION AND ANTIOXIDANT ACTIVITY
OF NAMMONG PRODUCED FROM FERMENTED CALAMANSI (*Citrus
microcarpa*) UNDER DIFFERENT SALT CONCENTRATIONS**

ABSTRACT

By:

REZA FATUR ROHMAN

22/494052/TP/13410

Nammong is a traditional fermented beverage made from calamondin (*Citrus microcarpa*) that has potential as a functional drink due to its phenolic and flavonoid contents as well as its antioxidant activity. However, scientific evidence regarding the effect of salt concentration on the chemical profile and indicators of the functional potential of nammong remains limited. Therefore, this study aimed to evaluate the effect of different salt concentrations during calamansi fermentation on the chemical profile and functional properties of nammong beverage.

In this study, four salt concentrations were applied, namely 7%, 14%, 21%, and 28%. The calamondin were salted, dehydrated at 40°C for 24 hours, then supplemented with 650 mL of salt solution and stored at 4°C for 28 days to allow fermentation to occur. After fermentation, the product underwent a steaming process for 3 hours as part of the final processing stage. The samples were then separated into two fractions, namely the calamondin extract fraction and the fermentation brine fraction. The parameters analyzed included pH, total titratable acidity (TTA), total sugar, antioxidant activity using the DPPH and FRAP methods, total phenolic content, and total flavonoid content.

The results showed that increasing salt concentration reduced pH values. Total titratable acidity and total sugar exhibited fluctuating responses. DPPH antioxidant activity decreased in the fruit extract fraction but increased in the fermentation brine fraction, whereas FRAP antioxidant activity did not differ significantly among treatments. Total phenolic content and total flavonoid content also showed fluctuating patterns. Overall, variation in salt concentration affected the chemical profile and indicators of the functional potential of nammong. However, the findings of this study are not yet sufficient to establish a single optimal salt concentration in a comprehensive manner. These findings provide preliminary information on the effect of salt concentration on the final characteristics of nammong and may serve as baseline data for further studies on the optimization of nammong fermentation.

Key words: Nammong, calamansi, fermentation, salt, functional potential