

ANGGIT WORO KINASIH. NPM 220331100027. Pemanfaatan Bakteri Halotoleran Terasi dalam Pembuatan *Flavoring Agent* Alami dari Tempe. Di bawah Bimbingan **Prof. Ir. Umi Purwandari, M.App.Sc., Ph.D.** dan **Cahyo Indarto, S.TP., M.P., Ph.D.**

ABSTRAK

Tempe berpotensi dikembangkan menjadi *flavoring agent* alami melalui fermentasi lanjut dengan penambahan bakteri halotoleran dari terasi. Penelitian ini menggunakan Rancangan Acak Lengkap (RAL) dua faktor, yaitu konsentrasi inokulum bakteri halofilik (5 mL dan 10 mL) dan lama fermentasi (0–3 pekan), dengan tiga ulangan. Parameter yang diamati meliputi kadar air, pH, keasaman total, nilai formol, Total Plate Count (TPC), uji sensoris, dan kandungan asam amino. Lama fermentasi berpengaruh nyata ($p < 0,05$) terhadap seluruh parameter kimia dan mikrobiologi. Kadar air menurun dari 28,04% menjadi 14,64%, keasaman total meningkat dari 0,05% menjadi 0,22%, dan nilai formol meningkat dari 0,37% menjadi 2,28%. Penambahan bakteri halofilik meningkatkan intensitas aroma produk meskipun tidak memberikan perbedaan nyata pada rasa umami dan pahit. Kandungan asam amino pada perlakuan terbaik (10 mL inokulum, 2 pekan fermentasi) lebih rendah dibanding kontrol, mengindikasikan pemanfaatan asam amino oleh mikroorganisme selama fermentasi. Hasil ini menunjukkan bahwa bakteri halotoleran terasi berpotensi digunakan dalam pengembangan *flavoring agent* alami berbasis tempe.

Kata Kunci: *Bakteri halotoleran, Fermentasi, Flavoring agent, Tempe.*

ANGGIT WORO KINASIH. NPM 220331100027. *Halotolerant Bacteria from Terasi in the Production of Natural Flavoring Agent from Tempeh.* Under supervised by **Prof. Ir. Umi Purwandari, M.App.Sc., Ph.D. and Cahyo Indarto, S.TP., M.P., Ph.D.**

ABSTRACT

Tempeh has the potential to be developed into a natural flavoring agent through further fermentation with the addition of halotolerant bacteria isolated from shrimp paste (terasi). This study employed a Completely Randomized Design (CRD) with two factors: halophilic bacterial inoculum concentration (5 mL and 10 mL) and fermentation duration (0–3 weeks), with three replications. Parameters observed included moisture content, pH, total acidity, formol value, Total Plate Count (TPC), sensory evaluation, and amino acid content. Fermentation duration significantly affected ($p < 0.05$) all chemical and microbiological parameters. Moisture content decreased from 28.04% to 14.64%, total acidity increased from 0.05% to 0.22%, and formol value increased from 0.37% to 2.28%. The addition of halophilic bacteria enhanced the aroma intensity of the product, although no significant differences were observed in umami and bitter taste intensities. Amino acid content in the best treatment (10 mL inoculum, 2 weeks fermentation) was lower than the control, indicating microbial utilization of amino acids during fermentation. These findings suggest that halotolerant bacteria from terasi have potential for use in the development of tempeh-based natural flavoring agents.

Keywords: *Halotolerant bacteria, Fermentation, Flavoring agent, Tempeh.*