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ABSTRAK

Pengembangan *flavoring agent* alami dari tempe fermentasi lanjut (semangit) dengan penambahan bakteri halotoleran dari tauco untuk mempercepat fermentasi dan meningkatkan proteolitik sehingga terbentuk asam amino seperti glutamat sebagai sumber rasa umami pengganti MSG. Penelitian ini bertujuan mengetahui pengaruh penambahan bakteri halotoleran tauco terhadap karakteristik kimia, mikrobiologi, sensorik, dan profil asam amino tempe fermentasi lanjut sebagai *flavoring agent* alami. Penelitian menggunakan Rancangan Acak Lengkap (RAL) dua faktor, yaitu konsentrasi inokulum bakteri (5 % dan 10%) dan waktu fermentasi (0–3 pekan) dengan 3 ulangan. Hasil menunjukkan semakin lama fermentasi menurunkan kadar air secara signifikan (26,96% menjadi 14,06%), serta meningkatkan pH, keasaman tertitrasi, dan intensitas aroma. Nilai TPC meningkat selama fermentasi berkisar 5,675–7,997 log CFU/mL. Formulasi terbaik berdasarkan metode Zeleny diperoleh pada perlakuan 2 pekan fermentasi dengan 5% konsentrasi bakteri. Nilai asam amino glutamat memiliki nilai tertinggi pada kedua perlakuan, meskipun mengalami penurunan setelah penambahan bakteri dan fermentasi lanjut. Profil asam amino menunjukkan penurunan total asam amino setelah fermentasi lanjut karena dimanfaatkan kembali oleh mikroorganisme sebagai sumber energi.

Kata Kunci: *Asam Amino, Bakteri Halotoleran, Flavoring agent, Tauco*

Irma Novita Faqiotur Rosidah. NPM 220331100005. *Utilization of Halophilic Bacteria from Tauco in the Production of Natural flavoring agent from Tempeh.* Supervised by **Prof. Ir. Umi Purwandari, M.App.Sc., Ph.D.** and **Dr. Darimiyya Hidayati, S.TP., M.P.**

ABSTRACT

Development of a natural flavoring agent from extended-fermentation tempeh (semangit) with the addition of halotolerant bacteria from tauco to accelerate fermentation and enhance proteolysis so that amino acids such as glutamate are produced as an umami flavor source to replace MSG. This study aimed to determine the effect of adding tauco halotolerant bacteria on the chemical, microbiological, sensory characteristics, and amino acid profile of extended-fermentation tempeh as a natural flavoring agent. The experiment used a two-factor completely randomized design (CRD), namely bacterial inoculum concentration (5% and 10%) and fermentation time (0–3 weeks) with three replications. Results showed that longer fermentation significantly decreased moisture content (26.96% to 14.06%) and increased pH, titratable acidity, and aroma intensity. TPC values increased during fermentation, ranging from 5.675 to 7.997 log CFU/mL. The best formulation by the Zeleny method was obtained for the treatment of 2 weeks fermentation with 5% bacterial concentration. Glutamic acid had the highest values among amino acids in both treatments, although it decreased after bacterial addition and extended fermentation. The amino acid profile showed a decrease in total amino acids after extended fermentation due to reutilization by microorganisms as an energy source.

Keywords: Amino Acids, Halophilic Bacteria, Flavoring agent, Tauco, Further-Fermented Tempeh.