

ROSSA RENINTAN AQSAHDYAH GARINI. NPM 20033110032. Tahu Fermentasi Mikroorganisme Halofilik *Indigenous* untuk Meningkatkan Kandungan Asam Amino *Neurotransmitter*. Di bawah Bimbingan **Prof. Ir. Umi Purwandari, M.App.Sc., Ph.D.** dan **Hamzah Fansuri, S.ST., M.T.**

ABSTRAK

Tahu fermentasi merupakan produk fermentasi dengan bakteri halofilik *indigenous* terasi Madura. Penelitian ini bertujuan untuk meningkatkan profil asam amino tahu melalui fermentasi jamur tempe dan terasi Madura. Mula-mula tahu difermentasi dengan jamur tempe selama 48 jam. Kemudian pada tahu yang berjamur tersebut (10 g) dilakukan penggaraman (5 g) selama 15 menit, lalu tahu difermentasi dengan suspensi terasi (perbandingan terasi:air, 5:1 dan 10:1 g/mL) hingga 8 hari. Setelah selesai, dilakukan pengeringan dengan suhu 40°C kemudian dilakukan pengupasan suspensi terasi. Hasil tahu tersebut dianalisis warna, tekstur, keasaman tertitrasi, total mikroorganisme dengan metode *turbidity*, organoleptik hedonik dan *scoring*, jenis serta konsentrasi asam aminonya. Hasil menunjukkan bahwa lama fermentasi memberikan pengaruh nyata terhadap parameter warna (L, a*, b*), keasaman total, tekstur dan total mikroorganisme. Lama fermentasi meningkatkan nilai L, a*, b* bagian dalam dan luar tahu fermentasi. Nilai total asam tertitrasi tertinggi sebesar 0,027%, parameter tekstur meningkat pada beberapa parameter di antaranya *resilience* (0,467 – 0,554), *hardness* (693,906–1773,182 g), *adhesiveness* (-3,583 –(-19,024)), *cohesiveness* (0,802–0,731), *gumminess* (506,173–1301,203). Total mikroorganisme meningkat selama fermentasi (0,167–0,369). Konsentrasi terasi berpengaruh terhadap tingkat *lightness* (L) permukaan tahu (16,433 – 24,091), *adhesiveness* (6,806 – (-12,658)), total mikroorganisme (0,259 – 0,300), kesukaan terhadap warna (2,900 – 3,400). Aroma terasi pada tahu fermentasi berbeda dinilai 'lemah hingga ada aroma terasi' (skor 3,467 – 4,133) dan aroma busuk dinilai 'lemah' (skor 2,200 – 2,833). Dari hasil uji hedonik dan *scoring*, tahu yang dibuat dari proporsi terasi:air 5:1 dengan lama fermentasi 4 hari, dianggap merupakan tahu terbaik. Kadar asam amino triptofan tahu fermentasi meningkat (1997,04 mg/kg) dibandingkan tahu tanpa fermentasi (529,55 mg/kg) dalam lingkungan bergaram.

Kata kunci: Asam amino, Fermentasi, Tahu, Tekstur, Sensoris

ROSSA RENINTAN AQSAHDYAH GARINI. NPM 20033110032. *Fermentation of Tofu with Indigenous Halophilic Microorganisms to Enhance Neurotransmitter Amino Acid Content.* Under supervised by **Prof. Ir. Umi Purwandari, M.App.Sc., Ph.D. and Hamzah Fansuri, S.ST., M.T.**

ABSTRACT

Fermented tofu is a product of fermentation with indigenous halophilic bacteria from Madura shrimp paste. This study aims to improve the amino acid profile of tofu through fermentation with tempeh fungus and Madura shrimp paste. At first, tofu was fermented with tempeh fungus for 48 hours. Then, the moldy tofu (10 g) was salted (5 g) for 15 minutes, then the tofu was fermented with a shrimp paste suspension (shrimp paste:water ratio, 5:1 and 10:1 g/mL) for up to 8 days. After fermentation was complete, the tofu was dried at 40°C and then the shrimp paste suspension was removed. The tofu is then analyzed for color, texture, titratable acidity, total microorganisms using the turbidity method, hedonic organoleptic and scoring, type and concentration of amino acids. The results showed that the length of fermentation had a significant effect on the parameters of color (L, a, b*), total acidity, texture, and total microorganisms. The length of fermentation increased the L, a*, b* values of the inside and outside of the fermented tofu. The highest titratable acidity value was 0.027%, texture parameters improved in several parameters, including resilience (0.47 – 0.55), hardness (693,906 – 1773,182 g), adhesiveness (-3,583–(-19,024), cohesiveness (0,802–0,731), and gumminess (506,173–1301,203). Total microorganisms increased during fermentation (0,167 – 0,369). While the concentration of shrimp paste affected the lightness (L) of the tofu surface (16,433 – 24,091), adhesiveness (6,806 – (-12,658)), total microorganisms (0.259 – 0.300), and color liking (2,900 – 3,400). The shrimp paste aroma in fermented tofu was rated as 'weak to no aroma of shrimp paste' (score 3,467 – 4,133) and the aroma of rotten was rated as 'weak' (score 2,200 – 2,833). Based on the hedonic and scoring tests, the tofu made from a shrimp paste:water ratio of 5:1 with a fermentation time of 4 days was considered to be the best tofu. The tryptophan amino acid content of fermented tofu increased (1997,04 mg/kg) compared to unfermented tofu (529,55 mg/kg) in a saline environment.*

Keywords: Amino acids, Fermentation, Tofu, Texture, Sensory