

KUALITAS FISIKOKIMIA DAN VIABILITAS BAKTERI PADA PRODUK SUSU TELUR MADU JAHE TERFERMENTASI *Lacticaseibacillus* *paracasei* STRAIN LVE

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INTISARI

Penelitian ini bertujuan untuk mengetahui kualitas fisikokimia dan viabilitas *Lb. paracasei* LVE pada produk susu fermentasi dan susu telur madu jahe (STMJ) fermentasi. Penelitian dilakukan dengan membandingkan dua perlakuan menggunakan *Independent T-test*. Perlakuan pertama adalah susu fermentasi (P1) dan perlakuan kedua adalah STMJ fermentasi (P2). Masing-masing perlakuan dilakukan pengulangan sebanyak tiga kali. Kultur starter *Lb. paracasei* LVE diinokulasikan sebanyak 5% (v/v) dan difermentasi pada suhu 37°C selama 14–18 jam. Parameter yang diamati meliputi kualitas fisik (viskositas dan sineresis), kualitas kimia (kadar air, total solid, pH, keasaman, kadar laktosa, kadar protein, kadar lemak, dan aktivitas antioksidan), serta viabilitas bakteri asam laktat. Hasil penelitian menunjukkan bahwa STMJ fermentasi memiliki kualitas fisikokimia yang lebih baik dibandingkan susu fermentasi. STMJ fermentasi memiliki viskositas lebih tinggi (1430,33 cP), sineresis lebih rendah (2,84%), kadar air lebih rendah (81,63%), total solid lebih tinggi (18,36%), keasaman lebih tinggi (1,39%), kadar laktosa lebih rendah, serta kadar protein, kadar lemak, dan aktivitas antioksidan yang lebih tinggi dibandingkan susu fermentasi. Nilai pH kedua produk tidak menunjukkan perbedaan yang nyata. Selain itu, jumlah bakteri asam laktat pada STMJ fermentasi (9,37 log CFU/mL) lebih tinggi dibandingkan susu fermentasi (9,20 log CFU/mL), yang menunjukkan bahwa formulasi campuran bahan susu, telur, madu, dan jahe mampu mendukung pertumbuhan *Lb. paracasei* strain LVE selama proses fermentasi. Hasil penelitian menunjukkan bahwa penambahan telur, madu, dan jahe pada susu fermentasi mampu meningkatkan sebagian besar karakteristik fisikokimia serta viabilitas *Lb. paracasei* strain LVE.

Kata kunci: Susu telur madu jahe (STMJ), fermentasi, *Lb. paracasei* LVE, viabilitas bakteri, kualitas fisikokimia, aktivitas antioksidan, *Independent T-test*.

PHYSICOCHEMICAL QUALITY AND BACTERIAL VIABILITY OF MILK- EGG-HONEY-GINGER FERMENTED USING *Lacticaseibacillus* *paracasei* STRAIN LVE

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ABSTRACT

This study aimed to evaluate the physicochemical quality and bacterial viability in fermented milk and milk-egg-honey-ginger (STMJ) fermented using *Lacticaseibacillus paracasei* LVE. The study compared two treatments using an *Independent T*-test. The first treatment was fermented milk (P1), where as the second treatment was fermented STMJ (P2). Each treatment was conducted in triplicate. A 5% (v/v) *Lb. paracasei* LVE starter culture was inoculated into the substrates and fermented at 37°C for 14–18 hours. The observed parameters included physical quality (viscosity and syneresis), chemical quality (moisture content, total solids, pH, titratable acidity, lactose content, protein content, fat content, and antioxidant activity), and the viability of lactic acid bacteria. The results demonstrated that fermented STMJ exhibited better physicochemical characteristics than fermented milk. Fermented STMJ showed higher viscosity (1430,33 cP), lower syneresis (2,84%), lower moisture content (81,63%), higher total solids (18,36%), higher titratable acidity (1,39%), lower lactose content, and higher protein, fat, and antioxidant activity than fermented milk. No significant difference was observed in pH values of the two products. Furthermore, the lactic acid bacteria count in fermented STMJ (9,37 log CFU/mL) was higher than that in fermented milk (9,20 log CFU/mL), indicating that the addition of egg, honey, and ginger supported the growth of *Lb. paracasei* LVE during the fermentation process. Overall, the incorporation of egg, honey, and ginger into fermented milk improved most physicochemical characteristics and enhanced the viability of *Lb. paracasei* LVE.

Keywords: milk-egg-honey-ginger, fermentation, *Lacticaseibacillus paracasei* LVE, bacterial viability, physicochemical quality, antioxidant activity, *Independent T*-test.