

PENGARUH *Lactobacillus acidophilus* DAN TEPUNG KULIT PISANG KEPOK (*Musa paradisiacal* forma typical) TERHADAP KUALITAS KEFIR SUSU KAMBING

Dwitiya Martharini
10/305264/PT/05960

INTISARI

Penelitian ini bertujuan untuk mengetahui pengaruh penambahan tepung kulit pisang dan *Lactobacillus acidophilus* terhadap kualitas kefir susu kambing. Kefir dibuat dari susu kambing dengan kefir *grain* 3% (w/v) dan *Lactobacillus acidophilus* (0; 1 dan 3 % (v/v)) serta tepung kulit pisang (0; 1 dan 2 % (w/v)). Semua perlakuan diinkubasi pada suhu ruang ($\pm 28,5^{\circ}\text{C}$) selama 10 jam, hingga pH turun menjadi 4,2 sampai 4,6. Uji kualitas kefir yang diamati yaitu total bakteri asam laktat, viabilitas probiotik, total yeast, keasaman, pH, kadar laktosa, kadar lemak, profil asam lemak, serat pangan, kadar alkohol, dan uji organoleptik. Data dianalisis dengan analisis variansi pola faktorial 3x3, dan dilanjutkan dengan Duncan's New Multiple Range Test (DMRT). Data hasil organoleptik dianalisis dengan analisis non parametrik Kruskal Wallis. Hasil penelitian menunjukkan bahwa *Lactobacillus acidophilus* berpengaruh ($P \leq 0,05$) terhadap penurunan pH, kadar alkohol, asam lemak kaproat, asam lemak kaprilat dan peningkatan keasaman, asam lemak kaprat, asam lemak oleat, asam lemak linoleat, bakteri asam laktat serta viabilitas probiotik. Tepung kulit pisang berpengaruh ($P \leq 0,05$) terhadap peningkatan asam lemak kaprilat, asam lemak linoleat, kadar alkohol dan bakteri asam laktat. Kefir memiliki rerata total bakteri asam laktat yakni $9,51 \log \text{cfu ml}^{-1}$; viabilitas probiotik $8,65 \log \text{cfu ml}^{-1}$; total yeast $6,13 \log \text{cfu ml}^{-1}$; keasaman 0,96%; pH 4,85; laktosa 3,14%; kadar lemak 5,33%; total serat pangan 10,49%; dan kadar alkohol 0,096%. Penambahan *Lactobacillus acidophilus* dan tepung kulit pisang berpengaruh ($P \leq 0,05$) terhadap aroma, rasa asam, alkoholis dan daya terima, tetapi tidak berpengaruh ($P \leq 0,05$) terhadap tekstur. Hasil penelitian dapat disimpulkan bahwa kualitas kefir semua perlakuan memenuhi standar komposisi kefir menurut Standar Codex 234-2003 dan kefir dengan penambahan *Lactobacillus acidophilus* 3% dan tepung kulit pisang 1% dapat diterima panelis.

Kata kunci: Susu kambing, Kefir, *Lactobacillus acidophilus*, Tepung kulit pisang, Kualitas kefir.

THE EFFECTS OF *Lactobacillus acidophilus* AND PLANTAIN PEEL FLOUR (*Musa paradisiacal forma typical*) ADDITION ON THE QUALITY GOAT MILK KEFIR

Dwitiya Martharini
10/305264/PT/05960

ABSTRACT

This experiment was carried out to investigate the effect of plantain peel flour and *Lactobacillus acidophilus* on the quality of goat milk kefir. Kefir was made from goat's milk with 3% of kefir grain (w/v) and *Lactobacillus acidophilus* (0; 1 and 3% (v/v)) and plantain peel flour (0; 1 and 2% (w/v)). All treatments were incubated at room temperature (± 28.5 ° C) for 10 hours, till the pH dropped to 4.2 and 4.6. Evaluation performed included total of lactic acid bacteria, probiotics viability, total yeast, acidity, pH, lactose content, fat content, fatty acid profiles, dietary fiber, alcohol content, and organoleptic tests. Data were analyzed using 3x3 factorial analysis of variance, followed by Duncan's New Multiple Range Test (DMRT). Organoleptic data were analyzed by Kruskal Wallis nonparametric analysis. The research result showed that *Lactobacillus acidophilus* had a significant different ($P \leq 0.05$) on a decrease of pH, alcohol content, caproic fatty acids, caprylic fatty acids and an increasing of acidity, capric fatty acids, oleic fatty acids, linoleic fatty acids, lactic acid bacteria and probiotic viability. Plantain peel flour had a significant different ($P \leq 0.05$) to increase caprylic fatty acids, linoleic fatty acids, alcohol content, and total lactic acid bacteria. Kefir had 9.51 log cfu ml⁻¹ of lactic acid bacteria total; 8.65 log cfu ml⁻¹ of probiotic viability; 6.13 log cfu ml⁻¹ of total yeast; 0.96% of acidity; 4.85 of pH; 3.14% of lactose content; 5.33% of fat content; 10.49% of dietary fiber; and 0.096% of alcohol content. The addition *Lactobacillus acidophilus* and plantain peel flour showed significant different ($P \leq 0.05$) on aroma, sourness, effervescence and acceptability but there was not significant different ($P \geq 0.05$) on texture. Research could be concluded that kefir quality for all treatments kefir according to Codex Standar 234-2003 and kefir with 3% addition of *Lactobacillus acidophilus* 3% and 1% of plantain peel flour were accepted by all panelists.

Keywords: Goat milk, Kefir, *Lactobacillus achidophilus*, Plantain peel flour, Kefir quality.