

KUALITAS KEFIR SUSU KAMBING DENGAN PENAMBAHAN *Lactobacillus plantarum* DAN TEPUNG KULIT PISANG KEPOK (*Musa paradisiaca formatypica*)

Galuh Pinasthika
10/301742/PT/05894

INTISARI

Penelitian ini bertujuan untuk mengetahui kualitas kimia dan mikrobiologi kefir susu kambing dengan penambahan *Lactobacillus plantarum* dan tepung kulit pisang. Kefir dibuat dari susu kambing pasteurisasi dengan starter kefir grains 3% (w/v), penambahan *Lactobacillus plantarum* 2% (v/v) dan tepung kulit pisang dengan persentase yang berbeda yaitu 1% dan 2% (w/v). Sebagai kontrol adalah kefir tanpa penambahan *Lactobacillus plantarum* dan tepung kulit pisang. Kefir diinkubasi pada suhu ruang 28°C hingga mencapai pH 4,2 sampai 4,6. Parameter pengujian meliputi uji kimia yaitu pH, keasaman, kadar asam lemak bebas, kadar laktosa dan kadar alkohol, uji mikrobiologi yaitu total bakteri asam laktat, total viabilitas probiotik dan total yeast dan uji organoleptik. Data dianalisis dengan analisis variansi pola faktorial 2x3 dan uji organoleptik dianalisis menggunakan analisis non parametrik, uji hedonik *Kruskal-Wallis* dan dilanjutkan dengan uji *Duncan's New Multiple Range Test* (DMRT). Rerata total nilai pH $4,73 \pm 0,70$, nilai keasaman $1,03 \pm 0,28\%$, kadar asam lemak bebas $4,81 \pm 1,01\%$, kadar laktosa $18,14 \pm 8,13\%$, kadar alkohol $0,12 \pm 0,06\%$, total bakteri asam laktat $9,64 \pm 0,54$ log cfu/ml, total viabilitas probiotik $8,60 \pm 0,53$ log cfu/ml, total yeast $6,02 \pm 0,62$ log cfu/ml, aroma $2,86 \pm 1,18$, rasa $3,17 \pm 1,16$, tekstur $3,22 \pm 1,04$, *effervescence* $2,74 \pm 1,09$ dan daya terima $2,67 \pm 1,18$. Hasil penelitian menunjukkan bahwa penambahan *Lactobacillus plantarum* dalam kefir susu kambing dapat menurunkan ($P < 0,01$) nilai pH dan meningkatkan ($P < 0,01$) nilai keasaman, kadar asam lemak bebas dan total viabilitas probiotik ($P < 0,05$). Penambahan tepung kulit pisang dalam kefir susu kambing meningkatkan ($P < 0,05$) kadar alkohol. Hasil uji organoleptik kefir berpengaruh ($P < 0,01$) terhadap aroma, rasa, *effervescence* dan daya terima. Kesimpulan penelitian ini adalah kefir susu kambing dengan penambahan *Lactobacillus plantarum* 2% menghasilkan kefir dengan kualitas yang terbaik dan penambahan tepung kulit pisang kepok sampai 2% dapat diterima oleh panelis.

(Kata Kunci: Susu kambing, Kefir, *Lactobacillus plantarum*, Tepung kulit pisang)

**QUALITY OF GOAT MILK KEFIR WITH THE ADDITION OF
Lactobacillus plantarum AND PLANTAIN PEEL FLOUR
(*Musa paradisiaca formatypica*)**

**Galuh Pinasthika
10/301742/PT/05894**

ABSTRACT

The aim of the experiment was to determine the chemical and microbiological quality of goat milk kefir with the addition of *Lactobacillus plantarum* and plantain peel flour. Kefir was made of pasteurized goat milk, added 3% (w/v) of kefir grains, 2% (v/v) of *Lactobacillus plantarum* and plantain peel flour with different percentage 1% and 2% (w/v). Control was goat milk kefir without addition of *Lactobacillus plantarum* and plantain peel flour. Kefir was incubated at temperature 28°C, until pH 4.2-4.6. The parameters were chemical test (pH, acidity, free fatty acid content, lactose content, and alcohol content), microbiological quality (total lactic acid bacteria, total viability of probiotic, and total yeast) and organoleptic test. Data was analyzed by analysis of variance with factorial 2x3 pattern and organoleptic test were analyzed by non parametric analysis with hedonic *Kruskal-Wallis* test and then the mean differences were tested by *Duncan's New Multiple Range Test* (DMRT). Average of the research was 4.73±0.70 of pH value, 1.03±0.28% of acidity value, 4.81±1.01% of free fatty acid content, 18.14±8.13% of lactose content, and 0.12±0.06% of alcohol content, 9.64±0.54 log cfu/ml of total lactic acid bacteria, 8.60±0.53 log cfu/ml of total viability of probiotic, and 6.02±0.62 log cfu/ml of total yeast, 2.86±1.18 of aroma, 3.17±1.16 of sourness, 3.22±1.04 of texture, 2.74±1.09 of effervescence and 2.67±1.18 of acceptability. The result of the research showed that *Lactobacillus plantarum* addition decreased (P<0.01) pH value and increased (P<0.01) acidity value, free fatty acid content and total viability of probiotic (P<0.05). Plantain peel flour addition increase (P<0.05) alcohol content, but not significant different on other test. Organoleptic quality of kefir influenced (P<0.01) on aroma, sourness, effervescence and acceptability. The conclusion of experiment was goat milk kefir added *Lactobacillus plantarum* 2% gave the best quality kefir and the addition of plantain peel flour up to 2% accepted by panelists.

(Key Words: Goat milk, Kefir, *Lactobacillus plantarum* and Plantain peel flour)