

**ANALISIS KUALITAS, ASAM ORGANIK, DAN SENSORIS
SUSU FERMENTASI MULTIPROBIOTIK MENGGUNAKAN
Lactobacillus acidophilus DAN *Bifidobacterium longum*
DARI SUSU SAPI, KAMBING, DAN KUDA**

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INTISARI

Penelitian ini bertujuan untuk mengetahui kualitas, asam organik, dan sensoris susu fermentasi probiotik menggunakan *Lactobacillus acidophilus* dan *Bifidobacterium longum* dari susu sapi, kambing, dan kuda. Kombinasi kultur antara *Lactobacillus acidophilus* dan *Bifidobacterium longum* dengan perbandingan 1:1 sebanyak 10% v/v diinokulasikan dalam susu sapi, kambing, dan kuda dan diinkubasi pada suhu 39°C selama 9 jam. Kualitas dari susu fermentasi diketahui dengan mengamati jumlah bakteri, nilai pH, dan keasaman pada 0, 3, 6, dan 9 jam inkubasi. Asam organik diamati pada 0 dan 9 jam inkubasi dengan HPLC dan pengujian sensoris pada 9 jam inkubasi yang dilakukan oleh 20 panelis. Data jumlah bakteri, nilai pH, dan keasaman dianalisis dengan rancangan acak lengkap (RAL) pola faktorial, sementara sensoris dengan non parametrik k-related sample friedman. Hasil menunjukkan bahwa perbedaan bahan baku susu memberikan pengaruh nyata ($P < 0,05$) terhadap jumlah bakteri dan sensoris, terutama rasa asam dan pahit dan kekentalan, tetapi memberikan pengaruh yang tidak nyata ($P > 0,05$) terhadap nilai pH, keasaman, dan asam organik. Jumlah bakteri, nilai pH, dan keasaman pada akhir inkubasi (9 jam) dari susu sapi, kambing, dan kuda fermentasi berturut turut adalah ($51,3 \times 10^7$; $178,3 \times 10^7$; $157,9 \times 10^7$), (3,36; 4,39; 4,46), dan (0,62%; 0,62%; 0,35%). Kesimpulan dari penelitian ini menunjukkan bahwa susu fermentasi menggunakan kultur kombinasi mempengaruhi kualitas, asam organik, dan karakteristik sensoris.

(Kata Kunci: Susu Fermentasi, Probiotik, Susu Sapi, Susu Kambing, Susu Kuda, Asam Organik, HPLC, Sensoris)

**ANALYSIS OF QUALITY, ORGANIC ACID, AND SENSORY MULTI
PROBIOTICS FERMENTED MILK USING *Lactobacillus
acidophilus* AND *Bifidobacterium longum*
OF COW, GOAT, AND MARE MILK**

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ABSTRACT

The objective of this study was to understand the quality, organic acid, and sensory of probiotic fermented milk using *Lactobacillus acidophilus* and *Bifidobacterium longum* of cow, goat, and mare milk. Combination culture, *Lactobacillus acidophilus* and *Bifidobacterium longum* 1:1 as much as 10% v/v was inoculated to cow, goat, and mare milk and incubated at 39°C for 9 hours. Quality of fermented milk known by observing bacterial count, value of pH, and acidity at 0, 3, 6, and 9 hours incubation. Observing organic acid at 0 and 9 hours incubation by HPLC and the sensory evaluation at 9 hours incubation carried by 20 panelists. Data bacterial count, pH value, and acidity analyzed by completely randomized factorial design and sensory evaluated by k-related sample friedman. The results shows that different type of milk gave significant effect ($P < 0.05$) to bacterial count and sensory evaluation, especially sour and bitter taste and texture, but not significant ($P > 0.05$) to pH value, acidity, and organic acid. Bacterial count, pH value, and acidity at the final incubation (9 hours) of fermented cow, goat, and mare milk respectively (51.3×10^7 ; 178.3×10^7 ; 157.9×10^7), (3.36; 4.39; 4.46), and (0.62%; 0.62%; 0.35%). The conclusion of this study indicate that fermented milk using combination culture had influence on quality, organic acid, and sensory characteristic.

(Keywords: Fermented Milk, Probiotic, Cow Milk, Goat Milk, Mare Milk, Organic Acid, HPLC, Sensory)