

**PENGARUH PERBEDAAN KONSENTRASI BIJI KEFIR
TERHADAP KARAKTERISTIK KEFIR AIR KELAPA
MUDA (*Cocos nucifera* L.) DAN AKTIVITAS
ANTIBAKTERI *Shigella dysenteriae***

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Abstrak

Shigella dysenteriae merupakan bakteri patogen penyebab disentri. Tindakan preventif dengan menggunakan minuman probiotik kefir air kelapa muda untuk mengurangi kejadian resistensi akibat penggunaan antibiotik tanpa resep dokter. Kandungan nutrisi seperti BAL dan bakteriosin yang terkandung dalam kefir dapat berpotensi sebagai aktivitas antibakteri. Penelitian ini bertujuan untuk mengetahui pengaruh variasi konsentrasi biji kefir terhadap karakteristik kefir dan aktivitas antibakteri *Shigella dysenteriae*. Formula kefir konsentrasi 4%, 6%, dan 8% dilakukan uji organoleptik, nilai pH, kadar total asam dengan titrasi, uji kadar gula dengan spektrofotometer uv-vis, uji alkohol dengan kromatografi gas, total BAL dengan *plate count* agar, dan aktivitas antibakteri yang diukur dengan metode difusi cakram. Berdasarkan hasil uji ANOVA menunjukkan bahwa konsentrasi biji kefir memiliki perbedaan signifikan dengan ($\text{Sig} < 0,05$) terhadap total asam, total alkohol. Total Gula pada rentang 0,4173% - 0,4632%. Total BAL pada rentang $19 - 55 \times 10^6$ cfu/mL dan aktivitas antibakteri terbesar terdapat pada kefir konsentrasi 6% sebesar 5,99 mm.

Kata Kunci: Aktivitas antibakteri, karakteristi kefir, kefir air kelapa muda, *Shigella dysenteriae*.

THE EFFECT OF DIFFERENT KEFIR GRAIN CONCENTRATIONS ON THE CHARACTERISTICS OF YOUNG COCONUT WATER KEFIR (*Cocos nucifera* L.) AND ITS ANTIBACTERIAL ACTIVITY AGAINST *Shigella dysenteriae*

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Abstrak

Shigella dysenteriae is a pathogenic bacterium that causes dysentery. Preventive measures using probiotic beverages such as young coconut water kefir can help reduce the incidence of antibiotic resistance due to the misuse of antibiotics without a doctor's prescription. The nutritional content of kefir, including lactic acid bacteria (LAB) and bacteriocins, has the potential to exhibit antibacterial activity. This study aims to determine the effect of varying kefir grain concentrations on the characteristics of kefir and its antibacterial activity against *Shigella dysenteriae*. Kefir was formulated using kefir grain concentrations of 4%, 6%, and 8%, and was evaluated through organoleptic testing, pH measurement, total titratable acidity, sugar content using UV-Vis spectrophotometry, alcohol content using gas chromatography, total LAB using the plate count agar method, and antibacterial activity using the disc diffusion method. Based on ANOVA results, the variation in kefir grain concentration showed a statistically significant difference (P-value < 0.05) in total acidity, alcohol content. Sugar content ranged from 0,4173% to 0,4632%. Total LAB ranged from 19 to 55 × 10⁶ CFU/mL, and the highest antibacterial activity was observed in kefir with a 6% grain concentration, producing an inhibition zone of 5.99 mm.

Keywords: Antibacterial activity, kefir characteristics, *Shigella dysenteriae*, young coconut water kefir