

PERBEDAAN AKTIVITAS ANTIBAKTERI KEFIR SUSU SAPI DAN KEFIR SUSU KAMBING PADA *Salmonella typhi*

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ABSTRAK

Kefir merupakan minuman susu yang difermentasi dengan menambahkan *grain* kefir sebagai starter yang mengandung bakteri asam laktat dan khamir. Kefir diketahui memiliki banyak manfaat bagi kesehatan salah satunya sebagai antibakteri. Tujuan dari penelitian ini adalah mengetahui pengaruh kefir susu sapi dan kefir susu kambing sebagai antibakteri *Salmonella typhi*. Metode yang digunakan adalah Rancangan Acak Lengkap (RAL) yang terdiri dari 4 perlakuan dan 3 kali ulangan, yaitu K- (Kontrol negatif), K+ (Kontrol Positif), S1 (Kefir Susu Sapi) dan S2 (Kefir Susu Kambing). Pembuatan kefir susu dilakukan dengan menambahkan *grain* kefir sebanyak 20% dari susu yang digunakan, lalu difermentasi selama 72 jam pada suhu 10°C. Kefir yang terbentuk diuji karakteristiknya berupa pH, total asam, alkohol, dan jumlah bakteri asam laktat. Data karakteristik kefir dianalisis secara deskriptif sedangkan data uji antibakteri dianalisis menggunakan uji *Kruskal-Wallis* yang dilanjutkan dengan uji *Mann Whitney*. Hasil uji karakteristik kefir yang didapatkan dengan nilai pH 3,75-3,96, nilai total asam 0,70-0,74%, alkohol 3,56-3,80% dan jumlah bakteri asam laktat $2,6-4,4 \times 10^7$ CFU/ml. Hasil uji antibakteri menunjukkan bahwa perlakuan S1 menghasilkan diameter zona hambat sebesar 1,53 mm, S2 sebesar 0,28 mm dengan K+ sebesar 10,3 mm dan K- sebesar 0 mm. Hasil uji *Kruskal-Wallis* menunjukkan bahwa setiap perlakuan memiliki perbedaan yang signifikan ($p < 0,05$). Berdasarkan penelitian dapat disimpulkan bahwa kefir susu sapi lebih berpengaruh terhadap *Salmonella typhi* dibandingkan kefir susu kambing.

Kata kunci: Bakteri asam laktat, *grain* kefir, *Salmonella typhi*, penghambatan

DIFFERENCE BETWEEN ANTIBACTERIAL ACTIVITY OF COW MILK KEFIR AND GOAT MILK KEFIR ON *Salmonella* *typhi*

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ABSTRACT

Kefir is a fermented milk drink by adding kefir seeds as a starter containing lactic acid bacteria and yeast. Kefir is known to have many health benefits, one of which is antibacterial. The purpose of this study was to determine the effect of cow's milk kefir and goat's milk kefir as *Salmonella typhi* antibacterial. The method used was a completely randomized design (CRD) consisting of 4 treatments and 3 replicates, namely K- (negative control), K+ (positive control), S1 (cow's milk kefir) and S2 (goat's milk kefir). Milk kefir was made by adding kefir grain as much as 20% of the milk used, then fermented for 72 hours at 10°C. Kefir formed was tested for characteristics such as pH, total acid, alcohol, and lactic acid bacteria. Kefir characteristics data were analyzed descriptively while antibacterial test data were analyzed using Kruskal-Wallis test followed by Mann Whitney test. The results of kefir characteristics test obtained pH value 3.75-3.96, total acid 0.70-0.74%, alcohol 3.56-3.80%, and lactic acid bacteria $2.6-4.4 \times 10^7$ CFU/ml. The antibacterial test results showed that treatment S1 produced an inhibition zone diameter of 1.53 mm, S2 of 0.28 mm with K+ of 10.3 mm and K- of 0 mm. Kruskal-Wallis test results showed that each treatment had a significant difference ($p < 0.05$). Based on the results of the study it can be concluded that cow's milk kefir has more effect on *Salmonella typhi* than goat's milk kefir.

Keywords: grain kefir, inhibition, Lactic acid bacteria, *Salmonella typhi*