

ABSTRAK

KARAKTERISTIK FISIKOKIMIA, MIKROBIOLOGI, ORGANOLEPTIK, DAN UJI AKTIVITAS ANTI BAKTERI PADA MINUMAN PROBIOTIK KEFIR BERBAHAN BAKU SUSU SAPI MURNI DAN SUSU KEDELAI

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Kefir dikenal sebagai minuman probiotik andalan karena mengandung berbagai jenis bakteri baik. Kefir dapat dibuat dari berbagai jenis susu, seperti susu sapi dan susu kedelai. Penelitian ini bertujuan untuk menganalisis karakteristik minuman probiotik berupa kefir *curd* dan *whey* asal susu sapi murni dan kedelai yang difermentasi selama 24, 36 dan 72 jam dengan menganalisis sifat fisikokimia, mikrobiologi, organoleptik dan antibakteri sesuai dengan standar Codex Stan 243-2003. Metode yang digunakan dalam penelitian ini meliputi pembuatan susu kedelai, pasteurisasi susu sapi dan kedelai, pembuatan kefir, pengujian nilai pH, viskositas, total asam laktat, analisis kadar protein, total padatan, kadar alkohol, total bakteri asam laktat dan khamir serta uji aktivitas antibakteri. Hasil penelitian dengan kondisi optimum pada kefir asal susu sapi jenis *curd* yaitu CS.3 dengan nilai pH 3,47; viskositas 2,08; total asam laktat 0,83 %; kadar lemak total 2,89%; kadar protein 17,12%; total padatan 3%, kadar alkohol 0,97%; total bakteri asam laktat 305×10^5 cfu/mL; total khamir 148×10^5 cfu/mL; aktivitas antibakteri terhadap *E.coli* 1,50 cm dan terhadap *S.aureus* sebesar 1,23 cm. Sementara itu kondisi optimum pada kefir asal susu sapi jenis *whey* yaitu WS.3 dengan nilai pH 3,71; viskositas 1,57; total asam laktat 1,13 %; kadar lemak total 2,57%; kadar protein 17,30%; total padatan 4,43%, kadar alkohol 0,96%; total bakteri asam laktat 249×10^5 cfu/mL; total khamir 390×10^5 cfu/mL; aktivitas antibakteri terhadap *E.coli* 0,80 cm dan terhadap *S.aureus* sebesar 1,01 cm. Sedangkan kondisi optimum pada kefir asal susu kedelai jenis *curd* yaitu CK.3 dengan nilai pH 3,38; viskositas 1,83; total asam laktat 1,03 %; kadar lemak total 2,57%; kadar protein 16,91%; total padatan 2,66%, kadar alkohol 0,97%; total bakteri asam laktat 289×10^5 cfu/mL; total khamir 167×10^5 cfu/mL; aktivitas antibakteri terhadap *E.coli* 0,90 cm dan terhadap *S.aureus* sebesar 1,21 cm. Kondisi optimum pada kefir asal susu kedelai jenis *whey* yaitu WK.3 dengan nilai pH 3,56; viskositas 1,32; total asam laktat 1,09%; kadar lemak total 2,57%; kadar protein 17,74%; total padatan 3,36%, kadar alkohol 0,97%; total bakteri asam laktat 371×10^5 cfu/mL; total khamir 291×10^5 cfu/mL; aktivitas antibakteri terhadap *E.coli* 0,65 cm dan terhadap *S.aureus* sebesar 1,33 cm.

Kata kunci : kefir, susu sapi, susu kedelai, *whey*, *curd*, antibakteri.

ABSTRACT

PHYSICOCHEMICAL, MICROBIOLOGICAL, ORGANOLEPTICAL CHARACTERISTICS, AND ANTI-BACTERIAL ACTIVITY TESTS OF KEFIR PROBIOTIC DRINK FROM PURE COW'S MILK AND SOY MILK

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Kefir is known as a mainstay probiotic drink because it contains various types of good bacteria. Kefir can be made from various types of milk, such as cow's milk and soy milk. This study aims to analyze the characteristics of probiotic drinks in the form of kefir curd and whey from pure cow's milk and soybeans which were fermented for 24, 36 and 72 hours by analyzing the physicochemical, microbiological, organoleptic and antibacterial properties according to Codex Stan 243-2003 standards. The methods used in this study included making soy milk, pasteurizing cow's milk and soybeans, making kefir, testing the pH value, viscosity, total lactic acid, analysis of protein content, total solids, alcohol content, total lactic acid bacteria and yeast and antibacterial analysis. The results of the study with the optimum conditions on kefir from cow's milk curd type were CS.3 with a pH value of 3.47; viscosity 2.08; total lactic acid 0.83%; total fat content 2.89%; protein content 17.12%; total solids 3%, alcohol content 0.97%; total lactic acid bacteria 305 x 10⁵ cfu/mL; total yeast 148 x 10⁵ cfu/mL; antibacterial activity against *E.coli* 1.50 cm and 1.23 cm against *S.aureus*. Meanwhile, the optimum conditions for kefir from whey were cow's milk, namely WS.3 with a pH value of 3.71; viscosity 1.57; total lactic acid 1.13%; total fat content 2.57%; protein content 17.30%; total solids 4.43%, alcohol content 0.96%; total lactic acid bacteria 249 x 10⁵ cfu/mL; total yeast 390 x 10⁵ cfu/mL; antibacterial activity against *E.coli* 0.80 cm and 1.01 cm against *S.aureus*. While the optimum conditions for kefir from soy milk are curd types, namely CK.3 with a pH value of 3.38; viscosity 1.83; total lactic acid 1.03%; total fat content 2.57%; protein content 16.91%; total solids 2.66%, alcohol content 0.97%; total lactic acid bacteria 289 x 10⁵ cfu/mL; total yeast 167 x 10⁵ cfu/mL; antibacterial activity against *E.coli* 0.90 cm and 1.21 cm against *S.aureus*. The optimum conditions for kefir from whey-type soy milk are WK.3 with a pH value of 3.56; viscosity 1.32; total lactic acid 1.09%; total fat content 2.57%; protein content 17.74%; total solids 3.36%, alcohol content 0.97%; total lactic acid bacteria 371 x 10⁵ cfu/mL; total yeast 291 x 10⁵ cfu/mL; antibacterial activity against *E.coli* 0.65 cm and 1.33 cm against *S.aureus*.

Keywords: kefir, cow's milk, soy milk, whey, curd, antibacterial.