

KARAKTERISTIK KEFIR SUSU KAMBING DENGAN PENAMBAHAN EKSTRAK ANGKAK SELAMA PENYIMPANAN

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INTISARI

Kefir merupakan salah satu jenis produk susu fermentasi menggunakan starter kefir *grain* yang mengandung bakteri dan *yeast*. Penelitian ini bertujuan mendapatkan karakteristik mikrobiologis, aktivitas antibakteri, fisiko-kimia, aktivitas antioksidan serta organoleptik kefir susu kambing dengan penambahan ekstrak angkak selama penyimpanan. Metode pelaksanaan diawali dengan proses pembuatan tepung angkak, kemudian diekstraksi, dilanjutkan dengan proses pembuatan kefir susu kambing dengan ditambahkan kefir *grain* 3% selama 18 jam pada suhu ruang. Perlakuan konsentrasi ekstrak angkak terdiri dari 0 ; 2 ; 4, dan 6% dengan lama penyimpanan 0, 7, dan 14 hari. Parameter yang diukur yaitu kualitas mikrobiologis meliputi total bakteri asam laktat, uji TPC, total *yeast*, dan aktivitas antibakteri. Uji kimiawi meliputi nilai keasaman, nilai pH, kadar alkohol dan kadar air. Uji fisik meliputi viskositas, uji kualitas warna (kecerahan, kemerahan, dan kekuningan), serta dilanjutkan dengan uji aktivitas antioksidan menggunakan metode DPPH dan uji organoleptik. Data dianalisis dengan *one way* ANOVA untuk jumlah total bakteri asam laktat, TPC, aktivitas antibakteri, nilai keasaman, nilai pH, kadar alkohol, kadar air, viskositas, nilai kecerahan, nilai kemerahan, nilai kekuningan, aktivitas antioksidan dan nilai sensoris (rasa alkoholis dan daya terima), dilanjutkan *two way* ANOVA untuk jumlah total bakteri asam laktat, TPC, aktivitas antibakteri pada *E. coli* dan *S. aureus*, kadar alkohol, viskositas, kecerahan, kemerahan, kekuningan dan aktivitas antioksidan, sedangkan hasil pengujian organoleptik menggunakan analisis non parametrik Kruskal Wallis, maka dilanjutkan dengan Duncan's multiple range test (DMRT). Hasil penelitian kualitas kefir susu kambing dengan penambahan ekstrak angkak selama penyimpanan 0, 7 dan 14 hari menunjukkan pengaruh nyata ($P < 0,05$) terhadap jumlah total bakteri asam laktat, jumlah TPC, aktivitas antibakteri, nilai keasaman, nilai pH, kadar alkohol, kadar air, viskositas, nilai kecerahan, nilai kemerahan, nilai kekuningan, aktivitas antioksidan dan nilai sensoris (rasa alkoholis dan daya terima). Terdapat interaksi antara penambahan ekstrak angkak dan lama penyimpanan pada jumlah total bakteri asam laktat, TPC, aktivitas antibakteri pada *E. coli* dan *S. aureus*, kadar alkohol, viskositas, kualitas warna dan aktivitas antioksidan. Kesimpulan penelitian yaitu kefir dengan penambahan ekstrak angkak sebanyak 6% dengan lama penyimpanan 14 hari dapat meningkatkan kualitas BAL, viskositas, kadar alkohol, aktivitas antioksidan, serta dapat diterima dengan rasa alkoholis dan dapat menghambat pertumbuhan bakteri patogen (*E. coli* dan *S. aureus*). Produk kefir dengan penambahan ekstrak angkak telah sesuai standar Codex nomor 243 tahun 2003 yaitu tentang susu fermentasi (kefir) dengan nilai keasaman minimal 10%, nilai alkohol 0,5-1,0% total mikrobial 10^7 CFU/g dan total *yeast* 10^4 .

Kata kunci: angkak, susu kambing, kefir, kualitas kefir.

CHARACTERISTICS OF GOAT MILK KEFIR WITH ADDITION OF RED YEAST RICE EXTRACT DURING STORAGE

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ABSTRACT

Kefir is a one of fermented milk products produced with the addition of kefir *grains* containing bacteria and yeast. Kefir *grains* were given at concentration of 3% and which incubated for 18 hours at room temperature for fermentation process. Kefir with the addition of angkak is one of the dairy products that are useful as the source of nutrients for the body with a distinctive taste. Angkak contains antimicrobial activity against pathogenic bacteria in the digestive tract. The addition of angkak in goat milk kefir used to maintain and enhance the antioxidant activity will provide the health benefits of the drink kefir. This experiment was conducted to find characteristics of microbiologicals, chemical, physical, antibacterial activity and antioxidant activity in goat milk kefir with the addition of red yeast rice (angkak). Data were analyzed by one way and two way ANOVA. While the organoleptic test results using a non-parametric analysis Kruskal Wallis test and difference continued with Duncan's multiple range test (Duncan Multiple). Data were analyzed using the Statistical Software Product and Service Solutions (SPSS) version 18 for Windows. The results of research on goat milk kefir quality with the addition of Angkak extract during storage 0, 7 and 14 days showed the effect ($P < 0.05$) to the number of lactic acid bacteria, the amount of Total Plate Count (TPC), antibacterial activity, the value of acidity, the level of pH, alcohol content, water content, viscosity, the value of brightness, the value of reddish, yellowish value, antioxidant activity and the value sensory (alcoholic taste and acceptance). There was interaction between the angkak extracts concentration and period time of storage in the total amount of lactic acid bacteria, TPC, the antibacterial activity on *E. coli* and *S. aureus*, the alcohol content, viscosity, brightness, reddish, yellowish and antioxidant. The result of this study showed that kefir with the addition of Angkak extract during 14 days at a concentration of 6% increase microbiologicals quality, viscosity, alcohol content, antioxidant activity. It could be received with a sense of alcoholics and reduce the activity of pathogenic bacteria *E. coli* and *S. aureus*. Kefir products with the addition of red yeast rice extract complied Codex standard number 243 of 2003 a value of at least 10% acidity, alcohol value 0.5-1.0% total microbial 10^7 CFU/g and total yeast 10^4 CFU/g.

Keywords: Goat milk, Kefir, Red yeast rice, Quality kefir.