

ABSTRAK

Pengembangan ilmu dan ketertarikan terkait pangan fungsional saat ini sedang menjadi tren di masyarakat. Salah satu produk yang memiliki nilai fungsional dan dapat dikembangkan adalah *concentrat yogurt*. Pengembangan *concentrated yogurt* dapat ditingkatkan dengan penambahan bahan alami seperti beras hitam. Tujuan dari penelitian ini yaitu untuk mengetahui adanya interaksi antara penggunaan bakteri asam laktat yang berbeda dengan penambahan ekstrak beras hitam terhadap kualitas dan sifat fungsional *concentrated yogurt* susu kambing. Materi penelitian yang digunakan yaitu susu kambing, starter *yogurt* komersil (*Yogourmet*) dengan strain bakteri non probiotik dan bakteri probiotik, serta beras hitam. Rancangan penelitian yang digunakan adalah rancangan acak lengkap pola faktorial 2x4 yang terdiri dari, faktor A (bakteri non probiotik dan bakteri probiotik), faktor B (ekstrak beras hitam 0%, 2%, 4% dan 6%) dan diulang sebanyak 5 kali. Data dianalisis menggunakan analisis variansi, dan diuji lanjut menggunakan uji beda nyata jujur (BNJ) jika diperlukan. Proses pembuatan *concentrated yogurt* terdiri dari beberapa tahapan, yaitu pembuatan ekstrak beras hitam, pembuatan *yogurt*, dan proses penyaringan *yogurt*. Peubah yang diukur yaitu rendemen, pH, total asam tertitrasi, warna (L^* , a^* , b^* , *whiteness index*, *hue*, dan *chroma*), total bakteri asam laktat, karakteristik tekstur (*firmness* dan *work of penetration*), aktivitas antioksidan, total fenol), dan komposisi proksimat (kadar air, kadar lemak, kadar protein, dan kadar abu). Hasil penelitian menunjukkan adanya interaksi yang sangat signifikan antara perbedaan bakteri asam laktat dan penambahan ekstrak beras hitam terhadap *lightness* dan *whiteness index*. Perbedaan jenis bakteri asam laktat memberikan pengaruh yang sangat signifikan terhadap total bakteri asam laktat, *lightness*, dan *whiteness index*. Penggunaan ekstrak beras hitam memberikan pengaruh yang sangat signifikan terhadap antioksidan dan total fenol. Rendemen, pH, total asam tertitrasi, tekstur, dan komposisi proksimat tidak ada pengaruh yang signifikan pada *concentrated yogurt* dengan penambahan ekstrak beras hitam dan jenis bakteri asam laktat yang berbeda. Penggunaan ekstrak beras hitam optimal pada level 4%.

Kata kunci: beras hitam, *concentrated yogurt*, fermentasi, susu kambing

ABSTRACT

The development of science and interest in functional foods is currently a trend in society. One product that has functional value and can be developed is yogurt concentrate. The development of concentrated yogurt can be enhanced by the addition of natural ingredients such as black rice. The purpose of this study was to determine the interaction between the use of different lactic acid bacteria and the addition of black rice extract on the quality and functional properties of concentrated goat milk yogurt. The research materials used were goat milk, commercial yogurt starter (Yogourmet) with non-probiotic and probiotic bacterial strains, and black rice. The research design used was a completely randomized design with a 2x4 factorial pattern consisting of factor A (non-probiotic bacteria and probiotic bacteria), factor B (black rice extract 0%, 2%, 4% and 6%) and repeated 5 times. Data were analyzed using analysis of variance, and further tested using the honestly significant difference test (HSD) if necessary. The process of making concentrated yogurt consists of several stages, namely the preparation of black rice extract, yogurt production, and the yogurt filtration process. The variables measured were yield, pH, total titratable acid, color (L^* , a^* , b^* , whiteness index, hue, and chroma), total lactic acid bacteria, texture characteristics (firmness and work of penetration), antioxidant activity, total phenol), and proximate composition (water content, fat content, protein content, and ash content). The results showed a very significant interaction between the differences in lactic acid bacteria and the addition of black rice extract on lightness and whiteness index. The differences in the types of lactic acid bacteria had a very significant effect on total lactic acid bacteria, lightness, and whiteness index. The use of black rice extract had a very significant effect on antioxidants and total phenols. Yield, pH, total titratable acid, texture, and proximate composition had no significant effect on concentrated yogurt with the addition of black rice extract and different types of lactic acid bacteria. The use of black rice extract was optimal at 4%.

Keyword: Blackrice, concentrated yogurt, fermentation, goat milk