

ABSTRAK

Penelitian ini dilakukan untuk menganalisis perubahan karakteristik fisikokimia, profil asam lemak susu segar, dan produk fermentasi dari susu kambing yang pada pakannya disuplementasi dengan tepung lemna. Karakteristik yang diamati meliputi kadar air, total padatan, pH, total asam tertitrasi, *water holding capacity*, sineresis, viskositas, profil warna, dan profil asam lemak. Materi yang digunakan antara lain susu kambing, kultur starter yogurt dan kefir, indikator *phenolphthalein*, NaOH, dan aquades. Rancangan percobaan yang digunakan yaitu rancangan acak lengkap dengan 4 perlakuan 5 kali ulangan. Data yang diperoleh dianalisis menggunakan analisis variansi, uji lanjut *Duncan*. Hasil penelitian menunjukkan bahwa produk fermentasi asal susu kambing lemna mempengaruhi karakteristik fisikokimia antar perlakuan namun tidak ada perbedaan dalam setiap perlakuan individu yang meliputi kadar air, total padatan, pH, total asam tertitrasi, dan WHC. Nilai sineresis produk fermentasi menunjukkan adanya perbedaan yang signifikan pada kelompok perlakuan. Setiap perlakuan individu pada produk kefir terdapat pengaruh yang sangat nyata. Nilai viskositas ada pengaruh nyata antara produk yogurt kefir serta antara perlakuan individu. Yogurt lemna terjadi peningkatan viskositas namun menurunkan viskositas pada produk kefir. Perubahan *lightness*, *redness*, *whiteness index*, dan *hue* tidak berpengaruh nyata ($P>0,05$). Hasil penelitian terdapat 36 asam lemak berbeda yang ada pada susu dan produk fermentasi yogurt kefir. Hasil rata-rata asam lemak pada susu segar 31,51%, susu kambing lemna 68,49%. Yogurt asam lemak jenuh 30,97%, asam lemak tidak jenuh 69,04%, sedangkan kefir 31,15% dan asam lemak tidak jenuh 68,85%. Komposisi USFA susu kambing lemna 67,46%, yogurt susu lemna 67,95%, dan kefir susu lemna 66,20%, sedangkan SFA 24,52%, 24,50%, dan 25,48%. Komponen PUFA susu kambing lemna 42,04%, produk fermentasi yogurt kefir sebesar 42,99% dan 42,11%.

Kata kunci : susu kambing lemna, produk fermentasi, fisikokimia, profil asam lemak

ABSTRACT

This study aimed to analyze changes in physicochemical characteristics, fatty acid profile of fresh milk, and fermented products from goat's milk supplemented with lemna meal. The observed characteristics include moisture content, total solids, pH, total titratable acid, *water holding capacity*, syneresis, viscosity, color profile, and fatty acid profile. The materials used included goat milk, yogurt and kefir starter cultures, *phenolphthalein* indicator, NaOH, and distilled water. The experimental design used was a complete randomized design with 4 treatments and 5 replications. The data obtained were analyzed using analysis of variance, *Duncan's* further test. The results showed that fermented products from lemna goat milk affected the physicochemical characteristics between treatments but there was no difference in each individual treatment which included moisture content, total solids, pH, total titratable acid, and WHC. The sineresis value of fermented products showed significant differences in the treatment groups. Each individual treatment on kefir products has a very significant effect. There was a significant effect of viscosity value between kefir yogurt products as well as between individual treatments. Lemna yogurt increased viscosity but decreased viscosity in kefir products. *Lightness, redness, whiteness index*, and *hue* variables had no significant effect ($P>0.05$). The results showed 36 different fatty acids present in milk and kefir yogurt fermentation products. The average results of fatty acids in fresh milk 31.51%, lemna goat milk 68.49%. Yogurt saturated fatty acid 30.97%, unsaturated fatty acid 69.04%, while kefir 31.15% and unsaturated fatty acid 68.85%. USFA composition of lemna goat milk was 67.46%, lemna milk yogurt was 67.95%, and lemna milk kefir was 66.20%, while SFA was 24.52%, 24.50%, and 25.48%. PUFA component of lemna goat milk was 42.04%, yogurt kefir fermented products were 42.99% and 42.11%.

Keywords: lemna goat milk, fermented product, phisicocemical, fatty acid profile

