

KARAKTERISTIK FISIKO-KIMIA SABUN SUSU KAMBING DAN SAPI DENGAN PENAMBAHAN *WHEY* PADA LAMA PENYIMPANAN BERBEDA

Raihanah Al Makkiyah

21/478887/PT/08959

INTISARI

Penelitian ini bertujuan untuk mengetahui perbandingan antara karakteristik fisiko-kimia sabun susu kambing dan sapi dengan penambahan *whey* pada lama penyimpanan berbeda (0, 30, dan 60 hari). Pembuatan sabun menggunakan bahan utama berupa minyak goring sawit, minyak kelapa, minyak bunga matahari, dan *whey* serta bahan tambahan berupa susu kambing dan sapi. Pengujian ini dilakukan dari uji bahan baku susu segar menggunakan *lactoscan* dan pengujian pH susu kambing, susu sapi, *whey* kambing, dan *whey* sapi menggunakan pH meter. Pengujian karakteristik fisik sabun (uji pH, kekerasan, dan stabilitas busa) dan karakteristik kimia sabun (uji bilangan penyabunan dan peroksida). Data sabun kemudian dianalisis menggunakan SPSS versi 25 pada analisis Rancangan Faktorial 2x3 (jenis susu x lama penyimpanan). Hasil analisis menunjukkan perbedaan jenis susu dan lama penyimpanan berpengaruh nyata ($P < 0,05$) terhadap karakteristik fisik dan kimia sabun. Hasil analisis menunjukkan bahwa terdapat interaksi yang signifikan ($P < 0,05$) antara jenis susu dengan lama penyimpanan terhadap nilai pH sabun. Hasil pengujian menunjukkan bahwa sabun susu kambing dengan penambahan *whey* memiliki karakteristik yang lebih baik serta semakin lama waktu penyimpanan, karakteristik fisik dan kimia sabun semakin baik, tetapi tidak pada bilangan peroksida karena semakin meningkat.

Kata kunci : Fisiko-kimia, Sabun *whey*, Susu kambing, Susu sapi, Penyimpanan

PHYSICOCHEMICAL CHARACTERISTICS OF GOAT AND COW MILK SOAPS WITH WHEY ADDITION AT DIFFERENT STORAGE DURATIONS

Raihanah Al Makkiyah
21/47887/PT/08959

ABSTRACT

This study aimed to compare the physicochemical characteristics of goat milk and cow milk soap with the addition of whey during different storage durations (0, 30, and 60 days). The soap was formulated using main ingredients such as palm cooking oil, coconut oil, sunflower oil, and whey, with goat milk and cow milk as additional ingredients. The analysis began with raw material testing, including fresh milk analysis using a Lactoscan and pH testing of goat milk, cow milk, goat whey, and cow whey using a pH meter. The soap's physical characteristics (pH, hardness, and foam stability) and chemical characteristics (saponification value and peroxide value) were then evaluated. The soap data were analyzed using SPSS version 25 with a 2x3 factorial design (milk type x storage duration). The analysis results showed that both milk type and storage duration had significant effects ($P < 0.05$) on the physical and chemical characteristics of the soap. Furthermore, there was a significant interaction ($P < 0.05$) between milk type and storage duration on the soap's pH value. The results showed that goat milk soap with added whey exhibited better characteristics, and the longer the storage duration, the better the soap's physical and chemical characteristics, except for the peroxide value, which increased over time.

Keywords: Physico-chemical, Whey soap, Goat Milk, Cow Milk, Storage.