

## PENGARUH SUSU KAMBING DIBANDING SUSU SAPI DAN LAMA PEMATANGAN BERBEDA TERHADAP KARAKTERISTIK FISIKO-KIMIA SABUN PADAT SUSU MADU

Muhammad Raihan  
21/483202/PT/09118

### INTISARI

Penelitian ini bertujuan untuk mengetahui perbedaan karakteristik fisiko-kimia sabun susu padat penambahan madu dengan susu kambing dibanding susu sapi pada lama pematangan 0, 30, dan 60 hari. Sabun dibuat dengan metode dingin menggunakan bahan baku minyak kelapa, minyak sawit, minyak bunga matahari, madu, serta susu kambing *Saanen* dan susu sapi *Friesian Holstein*, dan dilakukan pematangan pada suhu ruang. Susu segar diuji dengan *lactoscan* serta pH susu dan madu diukur dengan pH meter. Uji karakteristik fisik meliputi pH, kekerasan, dan stabilitas busa, sedangkan kimia meliputi bilangan penyabunan dan peroksida. Data dianalisis SPSS versi 27 pada Rancangan Faktorial 2x3 (Jenis susu x Lama pematangan). Hasil analisis menunjukkan perbedaan bahan baku susu dan lama pematangan berpengaruh nyata ( $P < 0,05$ ) terhadap karakteristik fisiko-kimia sabun. Hasil penelitian menunjukkan bahwa pada sabun susu kambing dan sabun susu sapi yang dihasilkan selama penelitian memiliki nilai pH berbeda nyata ( $P < 0,05$ ) sebesar  $10,18 \pm 0,03$  dan  $10,27 \pm 0,02$ ; nilai kekerasan berbeda nyata ( $P < 0,05$ ) sebesar  $9,77 \pm 0,08 \text{ kg/cm}^3$  dan  $9,62 \pm 0,02 \text{ kg/cm}^3$ ; nilai stabilitas busa berbeda nyata ( $P < 0,05$ ) sebesar  $61,23 \pm 3,74\%$  dan  $63,16 \pm 2,77\%$ ; nilai bilangan penyabunan berbeda nyata ( $P < 0,05$ ) sebesar  $10,80 \pm 0,32 \text{ mg KOH/gr}$  dan  $10,30 \pm 0,70 \text{ mg KOH/gr}$ ; nilai bilangan peroksida berbeda nyata ( $P < 0,05$ ) sebesar  $10,26 \pm 0,87 \text{ meq/kg}$  dan  $9,93 \pm 0,39 \text{ meq/kg}$ . Hasil analisis menunjukkan bahwa interaksi antara jenis susu dengan lama pematangan berpengaruh nyata ( $P < 0,05$ ) terhadap nilai pH dan kekerasan.

**Kata kunci** : Sabun, Fisiko-kimia, Susu Kambing, Susu Sapi, Madu, Pematangan

## THE EFFECT OF GOAT MILK COMPARED TO COW MILK AND DIFFERENT CURING TIME ON THE PHYSICO-CHEMICAL CHARACTERISTICS OF SOLID MILK HONEY SOAP

Muhammad Raihan  
21/483202/PT/09118

### ABSTRACT

This study aims to determine the differences in the physical and chemical characteristics of solid milk soap with honey made from goat's milk compared to cow's milk at different curing times (0, 30, and 60 days). The soap was produced using the cold process method with raw materials including coconut oil, palm oil, sunflower oil, honey, NaOH, and Saanen goat milk or Friesian Holstein cow milk, then cured at room temperature. Fresh milk was tested using a lactoscan, and the pH of the milk and honey was measured by pH meter. Physical characteristics included pH, hardness, and foam stability, while chemical characteristics were saponification value and peroxide value. Data were analysed using SPSS version 27 in a 2x3 factorial design (milk type x curing time). The research results showed that the goat milk soap and cow milk soap produced during the study have significantly different pH values ( $P < 0.05$ ) by  $10.18 \pm 0.03$  and  $10.27 \pm 0.02$ ; significantly different of hardness values ( $P < 0.05$ ) by  $9.77 \pm 0.08 \text{ kg/cm}^3$  and  $9.62 \pm 0.02 \text{ kg/cm}^3$ ; significantly different on foam stability values ( $P < 0.05$ ) by  $61.23 \pm 3.74\%$  and  $63.16 \pm 2.77\%$ ; significantly different on saponification values ( $P < 0.05$ ) by  $10.80 \pm 0.32 \text{ mg KOH/g}$  and  $10.30 \pm 0.70 \text{ mg KOH/g}$ ; significantly different on peroxide value ( $P < 0.05$ ) by  $10.26 \pm 0.87 \text{ meq/kg}$  and  $9.93 \pm 0.39 \text{ meq/kg}$ . The analysis results showed that differences in milk as raw materials and curing time significantly affect ( $P < 0.05$ ) the physico-chemical characteristics of the soap. The analysis results showed that the interaction between milk type and curing time had a significant effect ( $P < 0.05$ ) on pH and hardness values.

**Keywords:** Soap, Physico-chemical, Goat milk, Cow milk, Honey, Curing times