

## **Kualitas Fisiko-Kimia Mentega Susu Kambing pada Lama Penyimpanan yang Berbeda**

Yuanita Nuhainoor  
18/428128/PT/07782

### **INTISARI**

Penelitian ini bertujuan untuk mengetahui pengaruh lama penyimpanan terhadap kualitas fisiko-kimia mentega susu kambing. Susu segar diambil dari Peternakan dengan jenis kambing Peranakan Etawah. Mentega dibuat dengan cara pengadukan lemak susu menggunakan *mixer* dalam suhu dingin sampai terbentuk butiran mentega dan mengeluarkan *buttermilk*, kemudian dilakukan pencucian air dingin dan dikemas dengan cup plastik *Polypropylen* (PP) dan disimpan suhu 5°C selama 40 hari. Pengujian dilakukan hari ke-0, 20, dan 40. Uji kualitas fisik meliputi kekerasan, daya oles, waktu dan titik leleh. Uji kualitas kimia mentega meliputi pH, kadar air, lemak, protein, angka asam, bilangan peroksida, dan asam organik. Data dianalisis secara *one way Anova* dan dilanjutkan uji DMRT. Hasil penelitian menunjukkan bahwa mentega memiliki kadar lemak  $85,37 \pm 1,55$ , air  $12,88 \pm 0,71$  dan protein  $0,9 \pm 0,14\%$ . Kekerasan mentega hari ke-40 ( $1,55 \pm 0,35 \text{ kg/cm}^2$ ) lebih tinggi daripada hari ke-20 ( $1,21 \pm 0,2 \text{ kg/cm}^2$ ) dan hari ke-0 ( $0,18 \pm 0,04 \text{ kg/cm}^2$ ) ( $P < 0,05$ ). Daya oles mentega hari ke-20 ( $0,43 \pm 0,16 \text{ cm}$ ) dan 40 ( $0,43 \pm 0,13 \text{ cm}$ ) tidak berbeda dan keduanya lebih rendah dari hari ke-0 ( $0,73 \pm 0,24 \text{ cm}$ ). Suhu leleh mentega hari ke-20 ( $31,16 \pm 5,23^\circ\text{C}$ ) lebih rendah daripada hari ke-0 ( $35,5 \pm 2,5^\circ\text{C}$ ) dan hari ke-40 ( $41,5 \pm 0,83^\circ\text{C}$ ). Tidak terdapat perbedaan waktu leleh pada mentega hari ke-0, 20, dan 40 ( $8,09 \pm 1,58$ - $10,36 \pm 2,82$  menit) ( $P > 0,05$ ). Angka asam mentega hari ke-0 ( $0,25 \pm 0,33 \text{ mgKOH/gram}$ ) dan hari ke-20 ( $0,29 \pm 0,46 \text{ mgKOH/gram}$ ) tidak berbeda dan lebih rendah daripada hari ke-40 ( $0,57 \pm 0,14 \text{ mgKOH/gram}$ ). Nilai pH hari ke-40 ( $5,22 \pm 0,09$ ) lebih rendah dari hari ke-20 ( $5,52 \pm 0,19$ ). Asam asetat mentega hari ke-40 ( $370,18 \pm 1,2 \text{ ppm}$ ) lebih rendah dari hari ke-0 ( $480,2 \pm 74,41 \text{ ppm}$ ). Tidak terdapat perbedaan bilangan peroksida ( $1,94 \pm 0,94$ - $2,59 \pm 0,49 \text{ meq/kg}$ ), asam laktat ( $721,27 \pm 52,58$ - $692,03 \pm 6,8 \text{ ppm}$ ), dan asam butirat ( $406,33 \pm 643,22$ - $39,79 \pm 42,38 \text{ ppm}$ ) pada semua penyimpanan mentega ( $P > 0,05$ ). Kesimpulan menunjukkan bahwa batas waktu penyimpanan dengan kualitas mentega terbaik adalah kurang dari 40 hari.

**Kata kunci:** Kambing Peranakan Etawah, Komposisi susu kambing, Mentega susu kambing, Lama penyimpanan, Kualitas fisika kimia.

## Quality Physico-Chemical of Goat's Milk Butter on Different Storage Time

Yuanita Nuhainoor  
18/428128/PT/07782

### ABSTRACT

This study aimed to determine the effect of storage time on the physico-chemical quality of goat's milk butter. Fresh milk was taken from the farm with the Peranakan Etawah goat breed. Butter was made by churning with a mixer at cold temperatures until butter granules formed and buttermilk detached, then washed in cold water and packaged in Polypropylene (PP) plastic cups and stored at 5°C for 40 days. Tests were carried out on days 0, 20, and 40. Physical quality tests included hardness, spreadability, time and melting point. The chemical quality test of butter includes water, fat, and protein content, pH, acid, peroxide, and organic acid number. The data were analyzed by one way Anova and continued with the DMRT test. The results showed that butter had  $85.37 \pm 1.55$  fat,  $12.88 \pm 0.71$  water and  $0.9 \pm 0.14\%$  protein content. The hardness of butter on the 40<sup>th</sup> day ( $1.55 \pm 0.35 \text{ kg/cm}^2$ ) was higher than the 20<sup>th</sup> day ( $1.21 \pm 0.2 \text{ kg/cm}^2$ ) and the 0 day ( $0.18 \pm 0.04 \text{ kg/cm}^2$ ) ( $P < 0.05$ ). The spreadability of day 20 ( $0.43 \pm 0.16 \text{ cm}$ ) and 40 ( $0.43 \pm 0.13 \text{ cm}$ ) was not different and both were smaller than day 0 ( $0.73 \pm 0.24 \text{ cm}$ ). Melting temperature of butter on day 20 ( $31.16 \pm 5.23^\circ \text{C}$ ) was lower than day 0 ( $35.5 \pm 2.5^\circ \text{C}$ ) and day 40 ( $41.5 \pm 0.83^\circ \text{C}$ ). There was no significantly difference in melting time of butter on days 0, 20, and 40 ( $485 \pm 94.94$ - $621.83 \pm 169.4 \text{ s}$ ) ( $P > 0.05$ ). Butter acid values on day 0 ( $0.25 \pm 0.33 \text{ mg KOH/gram}$ ) and day 20 ( $0.29 \pm 0.46 \text{ mg KOH/gram}$ ) were not different and lower than day 40 ( $0.57 \pm 0.14 \text{ mg KOH/gram}$ ). The pH value on the 40<sup>th</sup> day ( $5.22 \pm 0.09$ ) was lower than the 20<sup>th</sup> day ( $5.52 \pm 0.19$ ). Butter acetic acid on day 40 ( $370.18 \pm 1.2 \text{ ppm}$ ) was smaller than day 0 ( $480.2 \pm 74.41 \text{ ppm}$ ). There was no significantly difference in peroxide value ( $1.94 \pm 0.94$ - $2.59 \pm 0.49 \text{ meq/kg}$ ), lactic acid ( $721.27 \pm 52.58$ - $692.03 \pm 6.8 \text{ ppm}$ ), and butyric acid ( $406.33 \pm 643.22$ - $39.79 \pm 42.38 \text{ ppm}$ ) on the butter of all storage times ( $P > 0.05$ ). The conclusion showed that the storage time for the best quality butter was less than 40 days.

**Keywords:** Peranakan Etawah goat, Goat's milk composition, Goat's milk butter, Storage time, Physico-chemical quality.