

ABSTRACT

PT Kalbe Milko Indonesia combines pasteurization and retort sterilization on producing their sterilized milk product. The pasteurization process takes place at $85 \pm 3^\circ\text{C}$ for 30 seconds and after packing, the product is sterilized in retort machines at a temperature between 121 and 121.9°C . Nevertheless, milk's quality is not just influenced by production processes but is also affected by other factors, for instance, post-production storage conditions. Hence, post-production assessment of the physicochemical properties of milk is crucial as it helps the company to identify any problems in the product quickly, preventing significant losses, enabling future system improvement, and act as a reflection on their standardized system. In order to do that, sterilized milk with vanilla variant were subjected under refrigerated (7°C), ambient (25°C), and incubated (35°C) temperatures for six weeks of storage. The observed physicochemical properties were moisture content, pH, and viscosity. It was observed that storage temperature and time together affect the physicochemical properties of vanilla flavored sterilized milk. But when observed individually, storage temperature and time only significantly influenced the pH and viscosity. While the moisture content was only affected by the incubation temperature treatment and was not affected by storage time. Changes in the moisture content, pH, and viscosity of vanilla flavored sterilized milk were possibly due to the changes occurring in milk components such as the crystallization phenomenon on lactose, fat, casein, breakdown of lactose, and dissociation of casein micelles. Despite those findings, the changes in those three parameters were not apparent and remained within the standards established by PT Kalbe Milko Indonesia.

Keywords: *physicochemical properties; sterilized milk; storage temperature and time*