

## ABSTRACT

PT Kalbe Milko Indonesia is a toll manufacturing company which specializes in the production of sterilized liquid products like milk, using retort technology. The QA department is responsible for maintaining the quality of the produced liquids through conducting daily physicochemical analysis and monthly stability analysis to ensure the product parameters are within the determined standard range. Milk composition varies based on various internal and external factors including the heating process during the production. This leads to the necessity of conducting quality control. In PT Kalbe Milko Indonesia, physicochemical analysis is one of the efforts to maintain the milk product quality. Density is one of the physicochemical properties of milk that is measured as a parameter of quality standards. Several instruments (pycnometer, the lactodensimeter with 1.1 g/mL scale and 1.06 g/mL scale) are available at the laboratory to measure the density of sterilized milk. With regards to method standardization and variations in the performance of the instruments, the result of density measurements of sterilized milk using the three instruments were compared using the milk samples from 10 batches of production. Along with that, the density within the production batches were also compared. Significant differences were observed in the result of density measurement using the three instruments as well as the density result within production batches. Factors affecting these differences include temperature condition, instrument calibration, the scale of the lactodensimeter, variations in the composition of ingredients as well as production processes, and the possible human error.

**Keyword:** *Density, lactodensimeter 1.1 g/mL scale, lactodensimeter 1.06 g/mL scale, pycnometer, sterilized milk*