

ABSTRACT

An accurate and effective determination of shelf life is crucial to ensure product safety and quality. Accelerated Shelf Life Test (ASLT) is commonly used to predict shelf life faster. However, research regarding ALST for heat-sensitive food including mayonnaise is still limited. This study aims to determine physicochemical and sensorial properties as well as storage temperature which are suitable for ASLT of low-fat mayonnaise by Arrhenius model. 2 commercial and 1 laboratory-made mayonnaise were stored at 16°C, 30°C, 37°C, and 44°C for 10 weeks. Physicochemical parameters of sample, including pH, viscosity, emulsion stability, and acid value, were measured every 2 weeks. Lightness (ΔL) value and sensory parameters (color, texture, and odor) of sample were measured at week 0, 4, 7, and 11 by using reverse sampling design. Afterwards, kinetic study was conducted for significant parameters only by constructing the Arrhenius plots. Acid value and odor were found to have the highest coefficient of determination in Arrhenius plot of commercial mayonnaise and lab-made mayonnaise respectively. The most ideal storage temperature was 44°C for conducting ASLT of low-fat mayonnaise because the accelerating factor at 44°C was the highest. Further study is suggested to validate the parameters and to correlate those parameters with sensorial or microbial properties.