ABSTRACT

Laura (03420080029)

EFFECT OF BEAN:WATER RATIO, EMULSIFIER, AND STABILIZER ON PHYSICOCHEMICAL CHARACTERISTICS AND STABILITY OF RETORTED SOYMILK

Soymilk is often subjected to heat sterilization, such as retort treatment, in order to improve its shelf life. However, this treatment might cause disruption to soy protein, leading to phase separation. As a result, emulsifier and stabilizer are often added to improve its stability. Bean:water ratio is another factor which can affect the quality soymilk. In this research, the effect of emulsifier, stabilizer, and bean:water ratio on soymilk stability was observed. Three types of emulsifier (lecithin, monoglyceride, and CITREM) and four types of stabilizer (xanthan gum, carrageenan, guar gum, and MCC) were used independently in the preliminary research. Lecithin, monoglyceride, CITREM, and MCC were added at 0.25, 0.5, and 1%, while xanthan, carrageenan, and guar were added at 0.025, 0.05, and 0.1%. Monoglyceride and guar gum were then selected to be utilized in combination with different bean:water ratio. Monoglyceride was added at 0.25, 0.5, and 0.75%, while guar gum was utilized at 0, 0.05, 0.1, and 0.15%. There were three different bean:water ratio used: 1:8, 1:10, and 1:12. Three treatment combinations with the optimum stability were then chosen for sensory tests, proximate analysis, and FFA analysis. The selected three treatments were 1:8 bean:water ratio with no emulsifier and stabilizer, combination of 1:10 bean:water ratio and 0.25% monoglyceride with no stabilizer, and combination of 1:10 bean:water ratio, 0.05% guar gum, and 0.75% monoglyceride.

Keywords: soymilk, retort sterilization, bean:water ratio, emulsifier, stabilizer

References: 45 (1978–2012)