

PHYSICO-CHEMICAL AND MICROBIOLOGY PROPERTIES OF MAYONNAISE WITH DIFFERENCE OF VEGETABLE OIL AND ADDITION OF GREEK YOGHURT

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ABSTRACT

This study aimed to determine the effect of vegetable oil types of mayonnaise and addition of greek yoghurt of physico-chemical, and microbiological properties. Mayonnaise were made of soybean oil (PA) and corn oil (PB) with same ingredient for each treatment (oil 70%, yolk 17,5%, sugar 2%, salt 1,5%, pepper 0,5%, mustard 1,5%, water 5%, and lemon 2%). Greek yoghurt were made by inoculating 5% starter culture of *Streptococcus thermophilus* and *Lactobacillus bulgaricus* (1:1), and then incubated at 42°C for 7 hours, and drained with a filter for 24 hours. The treatment included mayonnaise by combining mayonnaise (M) with Greek yoghurt (G) with the proportion of M (100%) + G (0%), M (85%) + G (15%), and M (70%) + G (30%). Mayonnaise assessment in terms of physic (emulsion stability, fat droplets, viscosity), chemical (pH, moisture content, fat), and microbiological (total lactic acid bacteria (LAB)). Data were analyzed using factorial analysis of variance (ANOVA) followed by Duncan's New Multiple Range Test (DMRT) to separate among means with significance level at $P < 0.05$. Additional proportion 0, 15, 30% of greek yoghurt had an effect on physico quality of emulsion stability ($96.71\% \pm 0.62$, $99.19\% \pm 0.66$, $98.97\% \pm 0.06$), viscosity of mayonnaise (34909.34 ± 3205.08 , 3473.17 ± 102.53 , 2302.84 ± 159.57 cP), fat droplets (7.16 ± 0.19 , 6.16 ± 0.44 , 5.99 ± 0.71 μm), chemical quality of pH (4.02 ± 0.00 , 4.19 ± 0.04 , 4.26 ± 0.03), moisture content ($20.12\% \pm 0.16$, $30.09\% \pm 0.58$, $38.48\% \pm 1.12$), fat content ($66.40\% \pm 2.47$, $57.88\% \pm 0.21$, $50.98\% \pm 1.72$), total lactic acid bacteria (3.43 ± 0.17 , 6.57 ± 0.28 , 6.84 ± 0.53 log CFU/ml). The result showed that the addition of greek yoghurt had a significant effect ($P < 0.05$) on physico-chemical and microbiological quality, while the type of oil and interaction of addition of greek yoghurt was no significant different ($P > 0.05$) on physico-chemical and microbiological of mayonnaise.

Keywords: Mayonnaise, Soybean oil, Corn oil, Greek yoghurt, Physico-chemical and Microbiology properties.