

DEVELOPMENT OF YOGURT DRINK BY USING CITRUS FIBER AS A STABILIZER

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This study was conducted to develop a yogurt drink adding a natural stabilizing agent, citrus fiber (*Citrus spp*). Five different levels of citrus fiber, 0.10%, 0.15%, 0.20%, 0.25%, and 0.30% (w/v) were evaluated to select the best incorporation level of citrus fiber for the development of yogurt drink. The selected citrus fiber level was compared with the optimum level of two stabilizers viz 0.3% and 0.035% (w/v) of gelatin and carrageenan, respectively. Authenticated control was conducted without adding any stabilizers. Sensory properties of yogurt drinks were evaluated using thirty (30) untrained panelists. Physico-chemical and microbiological properties were determined over 21 days of shelf life. Parametric and nonparametric data were analyzed using one way Analysis of Variance procedure and Friedman test, respectively. The sample incorporated with 0.2% (w/v) citrus fiber level had the highest overall acceptability ($p < 0.05$). There was a significant difference in pH and titratable acidity among the yogurt drinks prepared with different stabilizers. During the storage period, pH was decreased and titratable acidity was increased ($p < 0.05$). Titratable acidity and pH of 0.2% (w/v) citrus fiber level were 1.05 ± 0.01 and 4.45 ± 0.00 respectively at the end of the storage period. Fat content of 0.2% citrus fiber added yogurt drinks were significantly higher compared to control sample. *Escherichia coli* was not detected in all levels of stabilizers, while yeast and mold counts of yogurt drinks were within the acceptable range (maximum 1×10^3 CFUg⁻¹) during the storage period. The highest overall acceptability was showed by 0.2% (w/v) citrus fiber incorporated yogurt drink compared to the 0.3% (w/v) gelatin and 0.035% (w/v) carrageenan incorporated yogurt drinks. In conclusion, 0.2% (w/v) level of citrus fiber could be used to develop a yogurt drink with desired physico-chemical, microbiological and sensory properties compared with other two stabilizers.

Keywords: Carrageenan, Citrus fiber, Drinking yogurt, Gelatin, Stabilizers