

DEVELOPMENT OF LESS SWEET FIBER-ENRICHED DRINKING YOGURT BY USING SOLUBLE DIETARY FIBER AS A STABILIZER

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With a growing interest in health-promoting functional foods, the demand for natural additives has increased worldwide. The aim of this study was to develop a less sweet fiber-enriched yogurt drink by adding soluble dietary fiber which is a natural stabilizing agent. First study was conducted to select the best sugar level among four different sugar levels (0, 3, 6, and 9% w/v), where 9% (w/v) was found to be the most acceptable by the sensory evaluation. The second study was conducted to evaluate the effect of soluble dietary fiber levels (3, 3.5, and 4% w/v) in terms of physicochemical and sensory properties, together with the selected sugar content for the production of a less sweet fiber-enriched yogurt. Finally, the selected soluble dietary fiber level was compared with a synthetic stabilizer, gelatin (0.45% w/v), and an authenticated control which did not contain any stabilizers. Physicochemical properties and microbiological properties of drinking yogurts were determined for four weeks of duration. Parametric and nonparametric data were analyzed using one-way ANOVA completely randomized design and Friedman test, respectively. The 3% (w/v) soluble dietary fiber level was selected among three different soluble dietary fiber levels due to its superior sensory properties. Titratable acidity, pH and brix value of 3% (w/v) soluble dietary fiber level was 0.9125 ± 0.01 , 0.43 ± 0.01 and 19.25 ± 0.05 respectively. The highest overall acceptability resulted in 3% (w/v) soluble dietary fiber incorporated yogurt drink compared to the gelatin and the control yogurt drink. Ash, protein, syneresis were significantly lower and water holding capacity was significant higher in less sweet fiber-enriched yogurt drink compared to gelatin and control yogurt drinks. *Escherichia coli* was not detected in all levels of stabilizer, while yeast and mold count of yogurt drinks were within the acceptable range (maximum 1×10^3 CFU/g) during the storage period. In conclusion, less sweet soluble dietary fiber could be effectively incorporated to develop a yogurt with desired physicochemical, rheological, microbiological and sensory properties and shelf life.

Keywords: Drinking yogurt, Gelatin, Microbiological properties, Sensory properties, Sugar content