Investigating the texture and antioxidant capacity of papain enzyme-treated yogurt with different substrate – glucose and sucrose

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Abstract

Jogurt is considered as a functional food which is a complex heterogeneous system containing different biological components. Yogurt consisting, proteins, lipids, carbohydrates, vitamins and minerals. The various constituents need to be well balanced. Therfore the consumption of dairy products is highly recommended. In this study, the application of membrane filtration (5 nm UF), enzymatic- hydrolysis (Papain) and fermentation (Thermophilic YoFlex® culture) based yogurt production is detailed. The enzyme and the culture was added to yogurt after the membrane concentration. The aim of this investigation is to study the papain enzyme-treated yogurt and the control sample texture and antioxidant capacity using different carbohydrates – glucose and sucrose. The membrane concentration experiments were carried out using laboratory ultrafiltration unit and for fermentation hot water was applied. By analysing the influence of the different enzyme concentrations and carbohydrates, the texture, apparent viscosity and the antioxidant capacity was investigated. From the results of the experiment it can be concluded that the hardest texture was observed by the enzyme-treated samples (N1, N2,N3) with glucose or sucrose. Addition of enzyme and carbohydrates to the yogurt had significant effect on texture and the viscosity.