Abstract

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Characterization of functional low-fat yogurt enriched with whey protein concentrate, Ca-caseinate and spirulina

Fresh buffalo milk was standardized to 1.2 g fat 100 g\(^{-1}\) milk. Low-fat yogurts were fortified with whey protein concentrates (WPCs) 1 g 100 g\(^{-1}\), Ca-caseinates (Ca-Cns) 1 g 100 g\(^{-1}\), and spirulina (Spirulina platensis) 1 g 100 g\(^{-1}\) powders and their potential effect on the different quality characteristics were studied. Total solids, ash, and fat contents were high in low-fat yogurt added with spirulina powder, while protein content was high in low-fat yogurt enriched with WPCs. The highest level of antioxidant activity (P < 0.05) corresponded to low-fat yogurt containing spirulina powder, which had high total phenolic compound content. In WPCs-fortified low-fat yogurts, the gel exhibited a various structure with a fine network and it contained very small pores in size. The highest scores of sensory properties (P < 0.05) were observed in low-fat yogurt enriched with WPCs.