Production and characteristic quality of probiotic Labneh cheese supplemented with broccoli florets

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Abstract

Purpose: The purpose of this study is to develop functional probiotic Labneh cheeses supplemented with broccoli florets.

Design/methodology/approach: Probiotic Labneh cheese was produced using broccoli florets paste at

four different levels (0, 5, 10 and 15%), with *Lactobacillus casei* NRRL B-1922 as a probiotic strain, to evaluate its physicochemical, phenols, antioxidant activity, minerals, vitamins, textural, microbiological and sensory characteristics during storage for 15 days.

Findings: The results indicated that Labneh cheese with added broccoli paste exhibited significantly

higher level of moisture, acidity, soluble nitrogen, phenols, antioxidant activity, minerals and B vitamins, and lower protein, fat, ash and pH values when compared to control Labneh cheese. Textural analysis of Labneh cheese indicated that Labneh with higher level of broccoli (15%) exhibited harder texture than others. Higher viable counts of *Lactobacillus casei* and *Streptococcus thermophilus* were detected in Labneh with broccoli paste, and the counts (10^7 cfu/g) were higher than the number should be present to achieve their health benefits. The most acceptable Labneh cheeses were those supplemented with 5 and 10% broccoli paste.

Originality/value: This study revealed broccoli florets could enhance the growth of *Lactobacillus casei* and *Streptococcus thermophilus* in the Labneh matrix, which resulted in a wider spectrum of health benefits of Labneh cheese to the consumers.

Keywords: Labneh, Probiotic, Lactobacillus, Broccoli, Antioxidant activity