

Effect of Sodium Caseinate and Whey Protein Isolate Fortification on the Physical Properties and Microstructure of Corn Milk Yogurt

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ABSTRACT

*The aim of this research was to investigate the impact of sodium caseinate and whey protein isolate (WPI) fortification on the physical properties and microstructure of corn milk yogurt. The addition of sodium caseinate and/or WPI enhanced lactic acid production and counts of *Streptococcus thermophilus* and *Lactobacillus bulgaricus*. The hardness, adhesiveness, gumminess, lightness, water holding capacity, consistency and whey drainage increased whereas syneresis and yellow color decreased at higher concentrations of milk proteins. The optimal milk protein addition for improving the physical properties and texture of corn milk yogurt was 4% (w/v) of sodium caseinate.*

Key words: Corn milk yogurt, Sodium caseinate, Whey protein isolate, Milk protein

INTRODUCTION

Yogurt is the most-studied cultured dairy product. It is typically made from cow milk by the proto-cooperative action of two homofermentative bacterial cultures, *Streptococcus thermophilus* and *Lactobacillus delbrueckii* subsp. *bulgaricus* (De Brabandere and De Baerdemaeker, 1999; Tamime and Robinson, 1999; Lourens-Hattingh and Viljoen, 2001). However, efforts to produce a diversity of cultured products have been made by researchers in recent years to formulate yogurt from a variety of food sources, including soymilk (Granata and Morr, 1996), coconut milk (Siripanporn et al., 2000), grape juice (Öztürk and Öner, 1999), a combination of mango pulp-soymilk and buffalo milk (Kumar and Mishra, 2004), also a combination of skim milk and soymilk containing saccharified-rice solution (Park et al., 2005).

Corn milk is extracted from sweet corn (*Zea mays saccharata*) and pasteurized or heat-treated in the range of UHT. Due to its pleasant taste and nutritive