

innovations

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TITLE: IMPROVED STRUCTURE OF PROBIOTIC GOAT'S MILK YOGURT BY ENZYMATIC CROSSLINKING

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DESCRIPTION: Goat's milk products are becoming increasingly popular in the United States. Unfortunately, it is difficult to make probiotic goat's milk yogurt of good consistency due to its low casein content. In this study, the effects of microbial transglutaminase (MTGase) on the viscosity and syneresis of probiotic goat's milk yogurt, containing *Streptococcus thermophilus*, *Lactobacillus delbrueckii* subsp. *bulgaricus* and subsp. *lactis*, *Lactobacillus acidophilus*, *Bifidobacterium*, and *Lactobacillus paracasei* subsp. *casei*, were investigated. The effect of total solids on the viscosity was also studied. A Brookfield viscometer was used to analyze the viscosity of the yogurt (at 22°C). Results showed that the viscosity of the yogurts ranged from 3.2x10³mPa for control yogurt to 2.0x10⁴mPa for the yogurt fortified with milk powder (7% total solids) and 1.2x10⁷mPa for the sample treated with 4.0 units of MTGase per gram protein. The effect of MTGase on syneresis was measured by centrifuging the samples at 640 x g for 10 min. at 4°C. The viscosity of the goat's milk yogurt was significantly increased by the enzymatic crosslinking (p<0.01). The water holding capacity of the yogurt was also significantly increased (p<0.01). The results of the present study show that the enzymatic crosslinking may be an effective way to improve the consistency of probiotic goat's milk yogurt products.

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