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Research article

EFFECTS ON SOME QUALİTY PROPERTİES OF YOGURT ICE CREAM ADDİNG ENCAPSULATED PROBİOTİC BACTERİA TO YOGURT ICE CREAM PRODUCED FROM COW AND BUFFALO MİLK

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ABSTRACT

In this study, the effects of adding encapsulated and free-form probiotic bacteria (*Lactobacillus acidophilus* ATCC 4356) to yogurt ice cream produced from cow and buffalo milk on physical and chemical properties were investigated. Changes in the storage process of yogurt ice creams were determined and the effect of probiotics was analyzed. The prebiotic effects of inulin on probiotic bacteria were also investigated in the study. When applied together with yogurt bacteria, inulin increased the activity and effect rate of probiotic cultures in the same way. *L. acidophilus*, one of these probiotic bacteria, has an ideal growth temperature in the pH range of 5.5-6.0. This bacteria can also multiply in the pH range of 3.7-4.3. The reason we use inulin in yogurt ice cream is that in addition to the beneficial effects of inulin on health, inulin has a prebiotic effect on probiotic bacteria without affecting the sensory properties of the product to which it is added. The study also aimed to determine whether inulin can increase the quality of the yogurt ice cream we will produce due to its effect of preventing the formation of ice crystals in ice cream. Buffalo yogurt ice cream with probiotic bacteria and inulin contained the highest level(18.09%) of acetic acid. The long-chain saturated fatty acids (palmitic and stearic acids), which are undesirable in terms of health, were lower(35.79% and13.52%,respectively) in control buffalo yogurt ice cream samples than that of control cow milk(37.82% and 17.17%). When probiotic bacteria were encapsulated, the hardness of the ice cream samples increased. When probiotic bacteria encapsulated in cow's milk were added, the hardness was found to be at the highest level of 716.34 g, while the hardness of the ice cream sample made by adding probiotic bacteria encapsulated in buffalo milk and inulin was found to be at the highest level (912.48 g). A more homogeneous structure was detected in samples added with inulin and encapsulated probiotic.