

Development of a Symbiotic Milk Chocolate Using Inulin and Bifidobacterium Lactis

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Abstract : Probiotic dairy products are those that contain biologically active components that may affect beneficially one or more target functions in the body, beyond their adequate nutritional effects. As far as chocolate milk is a popular dairy product in the country especially among children and youth, production of a symbiotic (probiotic + peribiotic) new product using chocolate milk, Bifidobacterium lactis (DSM, Netherland) and inulin (Bene, Belgium) would help to promote the nutritional and functional properties of this product. Bifidobacterium Lactis is used as a probiotic in a variety of foods, particularly dairy products like yogurt and as a probiotic bacterium has benefit effects on the human health. Inulin as a peribiotic agent is considered as functional food ingredient. Experimental studies have shown its use as bifidogenic agent. Chocolate milk with different percent of fat (1 and 2 percent), 6 % of sugar and 0.9 % cacao was made, sterilized (UHT) and supplemented with Bifidobacterium lactis and inulin (0.5 %) after cooling . A sample was made without inulin as a control. Bifidobacterium lactis population was enumerated at days 0, 4, 8 and 12 together with measurement of pH, acidity and viscosity of the samples. Also sensory property of the product was evaluated by a 15 panel testers. The number of live bacterial cells was maintained at the functional level of 10⁶-10⁸ cfu/ml after keeping for 12 days in refrigerated temperature (4°C). Coliforms were found to be absent in the products during the storage. Chocolate milk containing 1% fat and inulin has the best effect on the survival and number of B. lactis at day 8 and after that. Moreover, the addition of inulin did not affect the sensorial quality of the product. In this work, chocolate has been evaluated as a potential protective carrier for oral delivery of B. lactis and inulin.

Keywords : chocolate milk, synbiotic, bifidobacterium lactis, inulin

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