World Academy of Science, Engineering and Technology
International Journal of Bioengineering and Life Sciences
Vol:9, No:05, 2015

The Effects of Inulin on the Stabilization and Stevioside as Sugar-Replacer of Sourcherry Juice-Milk Mixture

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Abstract : Milk-fruit juice mixture is a type of soft drinks, which can be produced by mixing milk with pieces of fruits, fruit juices, or fruit juices concentrates. The major problem of these products, mainly the acidic ones, is phase separation which occurs during formulation and storage due to the aggregation of caseins at low pH Short-chain inulin (CLR), long-chain inulin (TEX), native inulin (IQ) and Long-chain inulin (TEX) and short-chain inulin (CLR) combined in different proportions (2o:80, 50:50, and 80:20) were added (2-10 %) to sourcherry juice-milk mixture and their stabilization mechanisms were studied with using rheological and microstructural observations. Stevioside as a bio-sweetener and sugar-replacer was added at last step. Finally, sensory analyses were taken place on stabilized samples. According to the findings, TEX stabilized the mixture at concentration of 8%. MIX and IQ reduced phase separation at high concentration but had not complete effect on stabilization. CLR did not effect on stabilization. Rheological changes and inulin aggregates formation were not observed in CLR samples during the one month storage period. However TEX, MIX and IQ samples formed inulin aggregates and became more thixotropic, elastic and increased the viscosity of mixture. The rate of the inulin aggregates formation and viscosity increasing was in the following order TEX > MIX > IQ. Consequently the mixture which stabilized with inulin and sweetened with stevioside had the prebiotic properties which may suggest to diabetic patients and children.

Keywords : prebiotic, inulin, casein, stabilization, stevioside
Conference Title : ICBB 2015 : International Conference on Bioinformatics and Biomedicine
Conference Location : Istanbul, Turkey
Conference Dates : May 21-22, 2015