



STABILITY AND RHEOLOGICAL PROPERTIES OF ICE CREAMS PRODUCED WITH DAIRY BY-PRODUCTS

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ABSTRACT

The majority of dairy industries (cheese, butter, ricotta, etc.) discard their by-products in the environment causing intense pollution due to the high concentration of organic matter in these products. An interesting solution would be the reuse of these by-products in foods, such as ice cream. However, unpleasant changes in this emulsion may occur, such as undesirable phase separation. In this context, the aim of this work was to observe the effects of the application of dairy wheys on ice cream's rheological properties and stability. Ice cream formulations differed by flavor (cream and chocolate), by type (milk, cheese whey, ricotta whey and butter whey), and by proportions of wheys (0, 25, 50, 75 and 100%). A commercial sample was also evaluated as a comparison. The evaluated parameters were zeta potential (ZP), particle size (PS), rheological behavior, desorption, and concentration of Ca+Mg. The results showed that the addition of whey, regardless of flavor and origin, reduced the viscosity and increased PS and desorption, but did not compromise the ZP of most of the samples (78.57%). This behavior was concentration-dependent. The Ca+Mg content of the wheys and the flavorings had no influence on the desorption index. Thus, the analyses revealed that different dairy by-products in ice creams could be used without significantly compromising important quality parameters and, at the same time, help to preserve the environment. However, further experiments should be conducted (e.g. sensory analysis) in order to better understand the technological potential of dairy by-products application in ice creams.
