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Sunflower oil-based organogels for the production of healthier ice creams

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Abstract:

Consumers are increasingly aware of the importance of a healthy diet for their well-being and the risk reduction for certain diseases. Therefore, food products are often reformulated in order to guarantee a healthier composition. For instance, animal fat substitution with vegetable oils helps to increase the intake of unsaturated fatty acids, which have been associated with lower levels of blood cholesterol and lower risks for coronary heart disease. However, many foods (such as ice cream, cheese, bakery and confectionery products) need the presence of structured fats in order to achieve the proper texture. In these fields, the use of organogels can be particularly interesting. They are solid-like systems based on the gelation of a liquid oil by means of oil soluble polymers able to build a three-dimensional network which entraps the liquid fraction.

Thus, the aim of this work was to study the possibility to develop a healthier ice cream with a good structure, by using a sunflower oil-based organogel, obtained with phytosterols and γ -oryzanol as gelators.

Six ice cream formulations differing for the amount (4 or 8%) and the type (cream, sunflower oil and sunflower oil-based organogel) of fat used were produced in duplicate using a plant for artisanal ice cream. Soluble solid content, viscosity and density were measured on ice cream mixes before freezing, while on the finished products overrun, instrumental firmness, colour, melting behaviour, and shape retention were evaluated.

The work demonstrated that the use of the organogel in ice cream formulations improved the quality characteristics of the final product with respect to sunflower oil. Even if the best features were obtained with cream, it has to be pointed out that the sunflower oil-based organogel produced a healthier ice cream, with high levels of polyunsaturated fatty acids and natural antioxidants.

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