



6th Food Structure and Functionality Symposium

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Submission ID

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Title (required)

Effect of certified pasture-fed cream on the physical properties of mix emulsion and ice cream

Abstract (required)

Consumer interest in grass-fed dairy products is increasing due to perceived health benefits, higher quality, improved animal welfare and environmental sustainability. This study investigated the physical properties of mix emulsions and ice creams made with 'Metodo Nobile[®]' certified pasture-fed cream, compared to non-certified regular creams. The creams were characterised by their fatty acid profiles and thermal properties. All ice creams were formulated to a composition of 10.5% milk fat, 11% milk solids-not-fat, 13% sucrose, 0.2% stabiliser and 0.2% emulsifier, with no additional ingredients or flavourings. Pasture-fed cream showed a lower content of saturated fatty acids and a higher content of unsaturated and branched-chain fatty acids, resulting in lower solid fat content, endset melting temperature and crystallization enthalpy. The fat solidification kinetics of the mixes during 24-hour ageing at 4 °C indicated that the solidified fat content was lower in the mixes made with pasture-fed cream. The aged pasture-fed mix exhibited lower apparent viscosity at 4°C, as well as lower storage and loss moduli in the frequency range of 0 to 4 Hz. The overrun of ice creams was not significantly different depending on the type of cream, with values of approximately 30%. On average, the pasture-fed ice cream had lower hardness, higher yellowness and melting rate. During the 12-week storage period, the hardness and fat particle size (fat agglomeration) of the ice cream increased. These findings highlighted that cream from pasture-fed cows can affect some physical properties of ice cream, although its use may offer nutritional benefits, e.g. an improved fatty acid profile, and serves as a valuable option for producers aiming to meet consumer expectations for sustainable and ethically produced dairy products. Further research should explore the physical and sensory properties of ice cream made with pasture-fed cream in more complex formulations that include additional ingredients and flavourings.

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Categories (required)

2. Sustainable raw materials and processes

Keywords

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Preferred Presentation (required)

Oral

Author will attend (required)

I confirm that at least one author will register in full to attend and present the paper at the Conference

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