

# **Seasonal Variations in Fatty Acid Composition and Isothermal Crystallization of Milk Fat**

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Milk fat triacylglycerols are synthesized from more than 400 different fatty acids, which make milk fat the most complex of all natural fats. Fatty acid composition of milk fat is important because of several reasons such as processing, quality of dairy product and human health. The degree of saturation in milk fat is an indicator of texture and taste of manufactured dairy products. The content of saturated and unsaturated fatty acids of milk fat is affected by seasonal changes. Also, crystallization of milk fat affects several properties that are important for product quality, such as texture, mouthfeel and rheology. Seasonal variability in milk fat composition causes differences in crystallization behavior of milk fat.

The aim of this study was to measure influence of seasonal changes on fatty acid composition and isothermal crystallization of milk fat. Samples of the fatty acid methyl esters were analyzed by gas chromatography. It was found that the saturated fatty acids concentrations were highest in winter and autumn while the unsaturated fatty acids concentrations were highest during spring and summer months. A rheometer was used to study the isothermal crystallization behavior of milk fat. Heating and cooling curves of milk fat were also recorded by differential scanning calorimeter (DSC).