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Comparison of different thawing methods effect on the calorimetric and rheological properties of frozen liquid egg yolk

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Eggs are used in the food industry because of high nutrient value, coagulating, foaming, emulsifying, colouring and flavouring properties. Processed egg products, such as liquid egg products are popular products in manufacturing. They have a shelf life of a few weeks, but it can increase up to 1 year by freezing, which reduces the number of microorganisms. Sometimes, we can observe different unwanted phenomena, such as gelation of the yolk. These processes are highly dependent on the conditions of freezing and thawing. In our research, raw liquid egg yolk was frozen by slow freezing and stored at -18°C for 14 days. We examined raw egg yolk and frozen egg yolk on days 1, 7 and 14 with the slow and fast thawing methods. The calorimetric properties were investigated by differential scanning calorimetry. In addition, rheological properties were examined, Herschel-Bulkley model was fitted to shear rate-shear stress data. The dry matter content was also recorded during the experiment. ANOVA was used to analyze data. The results of the study showed that thawing had no significant effect on calorimetric and rheological properties and dry matter content. In contrast, freezing and frozen storage had a significant effect on denaturation enthalpy and rheological properties.

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Characterization of phenolic compounds of stinging nettle (*Urtica dioica* L.) extracts by HPLC analysis and determination of their antimicrobial activity

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The leaves of stinging nettle (*Urtica dioica* L.) are used since centuries for curing different types of diseases, while the roots were discovered as a drug only in the last decades. Aqueous and ethanolic extracts of dried aerial and underground parts of nettle were analysed by HPLC and phenolic components were monitored in the extracts. Rutin and vanillic acid were detected in the highest quantity of both the aqueous and ethanolic extracts of the leaves, while the roots contained much less of these compounds. Epicatechin, chlorogenic acid, quercetin, quercitrin, cinnamic acid and catechin were present in ca. ten-times less in the leaves but we could detect only traces in the roots. Aqueous and/or the ethanolic extracts of the leaves had antibacterial effect against *Enterococcus faecalis*, *Listeria monocytogenes*, *L. innocua*, *Escherichia coli*, *Pseudomonas aeruginosa* and *Staphylococcus aureus*, while antifungal effect was detected only in case of *Candida glabrata*.

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