

Stirred yoghurts fortified with colostrum-influence of colostrum addition on its acidification process and rheological properties

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Colostrum, appreciated for its antimicrobial and immuno stimulatory properties, was investigated as an additive for production of functional yoghurts. Firstly, acidification process and microbial quality were tested in order to check if the colostrum interferes with acidification process during yoghurt manufacturing or if it inhibits growth of *S. thermophilus* and *L. bulgaricus* after production and during yoghurts storage. Technological variants of the produced yoghurts accounted for 0.5% and 1.0% of the colostrum addition before (A, B) and after (C, D) incubation respectively. Secondly, chemical composition (dry mass, protein content, fat content and profile of fatty acids), rheological properties (texture analysis, oscillatory and rotational measurements), structure (microscopic evaluation of fat globules, measurement of particles' size distribution) and technological features (syneresis and water binding capacity) of the produced yoghurts were tested. Neither acidification rate, nor the final pH was affected by the colostrum addition. What is more, it did not inhibit growth of investigated strains. Fortification of the yoghurts with the colostrum caused increase in dry mass, protein and fat content. Yoghurts with colostrum had higher amounts

of myristic, palmitic, stearic and oleic acid. Moreover, the colostrum addition resulted in evolution of smaller gel particles. Microscopic preparations revealed non uniform globules distribution. Within the all investigated samples fat globules appeared as clusters of small droplets, as well as parallel chains of individual globules. It was found out that 1% of colostrum addition assured better water biding capacity of the yoghurt. All yoghurts were weak gels exhibiting shear thinning behaviour. Thickness and apparent viscosity was the same for all of the examined technological variants.

Biography

Adriana Bomba is a PhD student of Food Technology and Human Nutrition at the University of Warmia and Mazury. She works as a Younger Specialist at Dairy Innovation Institute, Poland. She actively participated in a 3rd Food Structure and Functionality Forum Symposium and 3rd IDF Symposium on Microstructure of Dairy Products at Montreal, Canada), as well as in VI International Session of Young Scientific Staff in Lublin, Poland.

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