



E540

Study of the effect of lipase enzyme preparations on the rheological changes of liquid whole egg during freezing

Hidas, K. I.¹, Sakpan, A.¹, Nyulas-Zeke, I. Cs.¹, Varga-Tóth, A.¹, Visy, A.¹, Elayan, M. ¹,
Németh, Cs.²

1 - Department of Livestock Product and Food Preservation Technology, Institute of Food Science and Technology, Hungarian University of Agriculture and Life Sciences, 1118 Budapest, Hungary
2 - Capriovus Ltd., Szigetcsép, Hungary

Freezing of liquid whole egg under the temperature of -6°C causes irreversible textural changes that affect the emulsifying and foaming properties, as well. The extent of this phenomenon can be decreased by cryoprotective treatments. In this study, the potential cryoprotective effect of different lipase enzyme preparations was tested. A treatment by commercial enzyme preparations with lipase activity was carried out at different concentrations (0.1 and 0.3 w/w%) at 40°C for 2 hours. The samples were analysed before and after freezing at -24°C for 7 days. The objective colour was measured by a colourimeter, the rheological properties were analysed by a rotational rheometer. In addition, sponge cakes were prepared from the samples, that were compared based on the texture (TPA method) and colour. It was found out, that the rheological properties of all the frozen-that samples were greatly differing from the unfrozen samples. After freezing and thawing, the whole egg samples rheological behaviour was similar to Newtonian liquids and the apparent viscosity and shear stress values increased. The texture of the sponge cake samples made from frozen-thawed samples was also significantly different from the control sponge cake sample.

Acknowledgements: The research was supported by the project VÁLLALATI KFI_16-1-2017-0551.

E541

Bovine milk protein-derived peptides and Metabolic syndrome

Abdisa, K.B.¹, A. Csighy¹, E. Szerdahelyi², A. Koris¹, A. Nath¹

1 - Department of Food Process Engineering, Institute of Food Science and Technology, Hungarian University of Agriculture and Life Sciences, Budapest, Hungary

2 - Department of Nutrition, Institute of Food Science and Technology, Hungarian University of Agriculture and Life Sciences, Somlói St 14-16, HU-1118 Budapest, Hungary

Metabolic syndrome has been received a great attention in wide ranges of scientific communities because is now considered one of the world's leading public health problems. Metabolic syndrome is defined by a group of interconnected biochemical and physiological factors has a WHO International Classification of Disease (ICD-9) code (277.7). Insulin resistance, atherogenic dyslipidemia, visceral adiposity, endothelial dysfunction, genetic susceptibility, high blood pressure, hypercoagulable state, and chronic stress are several factors which constitute the syndrome. It has been reported that milk protein-derived peptides play a unique role to reduce the risks of several health hazards, including cardiovascular disease, arterial hypertension, hypercholesterinemia, type 2 diabetes, obesity, cancer, thrombosis, and many more. Peptides are produced from milk proteins by enzymatic and microbial hydrolysis. Depending on the sequence of amino acids, milk protein-derived peptides can exhibit wide ranges of activities by binding to a specific receptor in the gastrointestinal tract or in target organs and tissues after absorption into the bloodstream. Presently targeted peptide sequences have been evaluated and their effects on biochemical pathway as well metabolic syndrome have been evaluated. This review summarizes the current knowledge on bovine milk derived peptides for the management of several health hazards related with metabolic syndrome.