QUANTITATIVE ANALYSIS OF WHEY PROTEINS IN RELATION TO HEALTH STATUS OF THE UDDER QUARTERS AND SEASON

Kristina Musayeva[1], Antanas Sederevičius[1], Rasa Želvytė[1], Ingrida Monkevičienė[1], Danuta Beliavska-Aleksiejūnė[1], Sigita Kerzienė[2], Saulius Bliznikas[3]

[1]The Reasearch Center of Digestive Physiology and Pathology Veterinary Academy
Lithuanian University of Health Sciences, Tilžės str.18, LT-47181 Kaunas, Lithuania
[2]Department of Physics, Mathematics and Biophysics, Medical Academy
Lithuanian University of Health Sciences, Eivenių str. 4, LT-50161 Kaunas, Lithuania
[3]Institute of Animal Science, Veterinary Academy Lithuanian University of Health Sciences
R. Žebenkos str. 12, LT-82317 Baisogala, Radviliškis distr., Lithuania

Corresponding author: Kristina Musayeva
phone +370 606 29236, e-mail: kristina.musayeva@lsmuni.lt

Abstract. The aim of the study was to evaluate the amount of chosen whey proteins, i.e. lactoferrin (LF), immunoglobulin G (IgG), alpha-lactalbumin (alpha-LA), beta-lactoglobulin (beta-LG) and bovine serum albumin (BSA) in cow milk in relation with somatic cell count (SCC) and pathogenic bacteria presence in quarter milk at different seasons. The quarters health status was set on the base of SCC and microbiological analysis. The diseased quarters (DQ) showed increased concentration of all proteins analysed, except alfa-LA, in compare to healthy quarters (HQ) ($p<0.001$). Significant differences of LF, IgG and beta-LG were observed between quarters with presence of bacterial growth (BG), nonspecific mastitis (NM), subclinical mastitis (SM) and healthy quarters (HQ) ($p<0.05$). In our research data, significant effect of season was estimated on LF ($p<0.001$), IgG ($p<0.001$), alfa-LA ($p<0.01$), beta-LG ($p<0.001$) and BSA ($p<0.05$) contents.

Keywords: whey proteins, udder, milk, mastitis