

ANALYSIS OF FACTORS INFLUENCING IMMUNOGLOBULIN G CONCENTRATION IN MILK OF DAIRY COWS

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Abstract. In this study, the purpose was to estimate immunoglobulins G (IgG) concentration in milk depending on cows' breed, number of lactations and somatic cell count (SCC). Twenty cows of different breeds (Lithuanian Black-and-White, Dutch Black-and-White, and German Black-and-White) and lactations (from 1st to 6th) were used in the study. The research material was split into four groups according to SCC detected in the milk samples: 1st group – SCC up to 100 x10³/ml; 2nd group – 101– 400 x10³/ml; 3rd group – 401 – 1,000 x10³/ml and 4th group – 1,001 x10³/ml. Samples of fresh milk were analysed for SCC performed by the heavy-duty counter-measurer *Somascope*. The contents of IgG were determined by the enzymatic method ELISA based on the competition between marked antigen-antibodies. The mean value for IgG concentration obtained from all the samples was 0.29±0.14 mg/ml. Milk IgG content increased with the increment of SCC. The relation between SCC and IgG content correlated significantly $r_p=0.931$, $r_s=0.854$ ($P<0.0001$). It was determined that IgG concentration varied from 0.26±0.15 mg/ml (1st-2nd lactations) to 0.41±0.11 mg/ml (5th-6th lactations). IgG concentration in milk was not significantly different among numbers of lactations and breeds of cows ($P>0.05$).

Keywords: immunoglobulin G, somatic cell count, cow, milk