62.81 compared to *GG* homozygous, respectively. In both cases (AFC and MY) cows with the *AA* genotype achieved the lowest mean values.

Conclusions. The obtained results of statistical analysis show what effect the different genotypes have on the desired values of reproductive parameters of Simmental cattle. All the above mentioned information is very important and economically useful, as it allows to improve the quality characteristics of fresh meat or its subsequent technological suitability. Also important is how different polymorphisms in the *PRKAG3* gene can translate into the quality of the milk obtained. However, it is equally important to pay attention to the aspect related to the reproductive parameters of beef cattle, since disturbances in the functioning of the reproductive system are associated with subsequent economic consequences, such as a decrease in the number of calves born and the number of calf or beef livestock sold, a decrease in the number of in-calf heifers sold from the farm, increased expenses for infertility treatment and the cost of semen and insemination runs. Therefore, to improve the economic performance of farms focused on calf and beef livestock production, it is extremely important for breeders to strive to improve cow reproduction rates.

MIXTURE OF SHORT-CHAIN FATTY ACIDS AND MONOGLYCERIDES MODULATES E-CADHERIN CONTENT INTO BROILER INTESTINE

Tamchuk L.[1], PhD student,
Masiuk D.[1], D.Vet.Sc., Head of the Department of Animal Physiology, Biochemistry, and Laboratory Diagnostics,
Nezdvetsky V.[1], D.Sc., Professor,
Kokariev A.[1], PhD in veterinary sciences, associate professor,
Johan van der Elsen[2], CEO and business development manager
dimasiuk@gmail.com
[1] *Department of Animal Physiology, Biochemistry, and Laboratory Diagnostics*
Dniprovsk State Agrarian Economic University, Dnipro, Ukraine
[2]*NeTaG BV, Zwolle, Overijssel, Netherlands*

Relevance. Recently, the application of molecular markers has become increasingly prevalent in assessing the intestinal barrier function. These markers provide intercellular adhesion of enterocytes, cytokine production, and reflect programmed cell death initiation. The comprehensive evaluation of these molecular markers in the intestine allows characterize not only pathogenesis processes, but also the potential of the intestine system to provide a reliable barrier. To achieve targeted feeding efficiency and ensure poultry productivity, the optimal state of intestinal health is critically important. The digestive function of the intestinal system is of crucial significance as it provides a protective barrier between the body's cells and pathogens that enter the intestine along with food. This barrier plays a key role in the interaction of the organism with its surrounding environment. Even minor damage to the intestinal cells can result in a decreased barrier function, leading to the development of various diseases. Therefore, preserving the barrier function is an important component in the formation of modern poultry farming strategies. Short-chain fatty acids (SCFAs) and monoglycerides are essential energy metabolites in all cell types. At the same time, these compounds can influence cellular processes through the activation of signaling pathways that regulate genetic expression and cell function. It is known that a mixture of short-chain fatty acids and monoglycerides (SCFA-M) can contribute to increased production of E-cadherin, which, in turn, supports the integrity of cell junctions and the stability of the epithelium in the small intestine.

The aim of this study was to investigate the effect of the SCFA-M mixture on the intestinal barrier function in broiler chickens by determining the content of E-cadherin in the small intestine.

Materials and Methods. The study was conducted under production conditions involving two separated poultry flocks. Broiler chickens of the control group were applied with a standard diet. In the experimental group, the chicken feed was supplemented with the SCFA-M mixture. This mixture was used from day 1 to day 7, and from day 16 to day 22 of the chickens' life, at a dose of 0.5 liters of the preparation per ton of the drinking water.

To assess the SCFA-M mixture effect on the intestine health, the level of the molecular marker E-cadherin was measured using the immunoblotting technique (WB). The fragments of the intestine were collected from 5 chickens in both the experimental and control groups for the analysis of molecular markers. The analysis of molecular markers was conducted in the small intestine section of the chickens from day 16 to day 35 of their life using WB analysis.

Results. The obtained results have shown statistically significant changes in the content of E-cadherin in the intestinal tissues under the influence of SCFA-M. It was found that administration of SCFA-M for 6 days led to a 21% increase in the level of E-cadherin in the intestinal tissues of broiler chickens. On day 29, the level of E-cadherin in the intestinal tissues of the experimental group was significantly higher by 37% compared to the values in the control group, indicating a gradual enhancement of E-cadherin production by enterocytes and strengthening of the intestinal barrier in the experimental group chickens.

By determining the quantity of molecular markers of intercellular adhesion, the effectiveness of feed additives used in modern poultry farming technologies can be assessed at the molecular level. This allows for the evaluation of the barrier function of the intestine and the extent to which such additives effectively contribute to the strengthening and improvement of intestinal barrier function. Therefore, the use of short-chain fatty acids and monoglycerides mixture may have additional beneficial effects on intestinal epithelial cells as well as other cell types in the intestinal system. These effects may be attributed to various mechanisms, including protection of intestinal cells from toxins, impact on the metabolic activity of intestinal epithelium, and stimulation of proliferation and restoration of the intestinal barrier function after damage.

Conclusions. Taking into the account obtained results in our study we can conclude that the application SCFA-M as an additional feeding source has a positive impact on the barrier function of the intestine and supports a healthy balance of digestive and barrier functions in the intestinal system.

QUAIL BREEDING IN UKRAINE: A DISCOVERY IN THE WORLD OF POULTRY

Vakulenko A., Student of higher education,
Haluzina L., Candidate of Agricultural Sciences, Docent, Doctor of Philosophy (PhD),
Harashchuk M., Candidate of Veterinary Sciences, Docent,
GalyzinaL.I@i.ua
Dnipro State Agrarian and Economic University, Dnipro, Ukraine

Ukraine, with its unique climate and natural conditions, has become one of the leading countries in quail breeding. This poultry industry has gained particular popularity due to the wealth of prospects it offers, as well as the high quality of the products obtained.

One of the main features of quail breeding in Ukraine is the variety of varieties of these birds. Ukrainian breeders have developed numerous hybrids and varieties that differ not only in