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Introduction

Over the past decades, we have witnessed significant achievements in enhancing the genetic potential of new breeds, crosses, and lines of poultry. However, the realization of this potential is impossible without relevant complete feed. In this respect, research of digestion physiology; study and analysis of the impact of nutritional factors on the digestive system, which also functions as a local body of the immune system, offers an opportunity for assessment of its morphofunctional status to create optimal conditions for raising and rational use of poultry and implementation of any adjustments if required

Material & Methods

The study was conducted on Japanese quails aged seven days divided into three groups made of 60 birds each. The quails were kept in a battery cage and fed complete feed per the requirements for their breed. Control group birds were fed standard combined feed with a balanced content of nutrients and biologically active substances; the first test group was fed the same combined feed + Humilid feed additive in the amount of 2 mg/kg of body weight; the second test group birds were fed complete feed with Bilaxan complex synbiotic in the amount of 0.01 g/bird/day. A biochemical panel was run on samples of duodenal mucosa and chemus of 29, 41, and 71 days-old birds.

Results

The dynamics of amylolytic activity in tissues studied increased in birds aged 71 days compared to birds aged 29 days ($P<0.05$). Lipolytic activity decreased in the mucosa and increased in duodenal chemus ($P<0.05–0.01$). A stimulating effect of a biologically active substance and synbiotic on the enzymes studied has been identified (($P<0.05–0.01$). The efficiency of introducing Humilid into the diet was higher than that of Bilaxan.

Conclusions

It has been established that proteolytic activity of enzymes in duodenal mucosa increased with age, while in chemus, the process was the opposite.