

## THE EFFECT OF ENZYME COMPOSITIONS ON THE FEED UTILISATION IN THE ORGANISM OF LAYING HENS

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**Summary.** Trials were carried out to determine the influence of enzyme compositions MEK-CGAP, Vilzim-F, Vilzim-K and Vilzim FK, 0.1% of the diet, (producer “Biosintezė”, Lithuania) on the intensity of protein and lipid utilization in the organism of laying hens. Hens of the test groups were fed the diet, where cereal ingredient was 55 % wheat, 10% rye and 18% soy. The sunflower oil was added (3% of the diet) as a source of no saturated fatty acids. It has been determined that enzyme composition Vilzim –F and Vilzim–FK had the biggest influence on the utilization of the feed proteins in the organism of laying hens. They affected the increase of the total protein in the hens’ blood plasma by 16.79% ( $P < 0.05$ ), the amount of the nucleic acids in the blood - by 16.78% ( $P < 0.05$ ); ensured the best rate of digestibility of the proteins and increased feed conversion to the egg production by 5%, compared with the control group. The enzyme compositions Vilzim-K had the biggest influence on the utilization of the feed lipids in the organism of laying hens. The hens fed this enzyme supplemented diet had more lipids in the blood plasma in average by 14.1% ( $P < 0.05$ ), more triglycerides on average by 17.1% ( $P < 0.05$ ); the amount of the lipids in the yolk by 2.7% ( $P < 0.05$ ), digestibility of the feed lipids – on average by 7.15%, compared with the control group. The enzyme compositions had no significant influence on the amount of lipids in the liver and abdominal fat. The enzyme compositions had more significant influence on the 45–week–old hens feed protein utilization and on the 58–week–old hens feed lipids utilization.

Trials have shown that the weight of digestive organs of laying hens tends to increase with the ageing of hens, but after adding enzymes to the diet this increase was not significant. The inclusion of enzyme composition MEK-CGAP and Vilzim-FK had the most significant effect – the weight of digestive organs of laying hens was less on average by 5.35%, compared with the control group.

**Keywords:** Enzyme compositions, protein, lipid, laying hens.