THE INFLUENCE OF DIET SUPPLEMENTED WITH PHYTASIC ENZYMES ON UTILIZATION OF PHOSPHORUS IN LAYING HENS

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Summary. The present study was designed to determine the effect of phytasic enzymes on the utilization of phosphorus in laying hens. The experimental diets were formulated with reduced amount of total phosphorus (20%) and calcium (10%).

The research was carried out in the Research Laboratory of Biological Diversity and Technologies at Vilnius Pedagogical University and Joint Stock Company "Girelės paukštynas", Lithuania. The 17-58 weeks-aged Hisex brown cross hens were kept in cages – 8 hens in each cage (72 hens per group). The hens were divided into the control (Group 1) and experimental groups (2). Total amount of hens used in study were 360. The laying hens in all groups were fed with commercial diets which had reduced on 20% amount of total phosphorus and on 10% amount of calcium. The diets in experimental groups were supplemented with phytasic enzyme preparations „Vilzim-F", (Biosintezė, Lithuania) and „Natuphos 5000 G" (BASF, Germany).

The highest influence of phytasic enzymes on phosphorus utilization among the different age hens was found in 45 and 58 weeks-aged laying hens. The activity of alkaline phosphatase in experimental hens blood sera compared to controls increased on 10.7-16.9% ($P<0,05$), amount of phosphorus on 6.3-14.3% ($P<0,05$), utilization of phosphorus on 4.6-6.1%, respectively. In addition, supplementation of enzyme preparations increased the amount of phosphorus in hens femora and egg-shell. It was concluded, that the highest influence on the phosphorus utilization had diets supplemented with 0.1% of „Vilzim-F" and „Natuphos 5000 G".

Keywords: enzyme preparations, phosphorus, laying hens.