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### Czech Journal of Animal Science

The long-term administration of a clinoptilolite-supplemented feed to layers and its effect on performance, haematological parameters and metabolic profile

Straková E., Suchý P., Herzig I., Šerman V., Mas N.:

Czech J. Anim. Sci., 53 (2008): 212-218

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120 selected layers (Bovans Goldline hybrid) aged 19 weeks with an average weight of 1 735 g were divided into two balanced groups: control group (Group C) and experimental (Group E). Layers were

reared in three-tier cages with automatic watering, manual feeding, and at controlled light and temperature regimens. One cage accommodated two layers, the floor surface area was 0.1125 m<sup>2</sup> per layer. The experiment started after a 20-day adaptation period with layers aged 22 weeks (Week 22) and ended when layers were 68 weeks old (Week 68). In a period of initiation (i.e. Weeks 19–38), layers were fed the complete feeding mixture N1. Then they received the feeding mixture N2 until the end of the experiment. Feeding mixtures in both groups (C and E) had the same composition; the only difference between mixtures was that the feeding mixture in the experimental group was enriched with 1% clinoptilolite (i.e. the commercially available additive ZeoFeed). Layers received feeding mixtures and drinking water *ad libitum*. In the course of the experimental period, control layers laid 16 289 eggs while experimental layers laid 16 474 eggs. It follows from the results that the laying intensity in experimental layers was 1.7% higher as compared to control layers, i.e. the number of laid eggs in experimental layers increased by 5.6

eggs per layer. The mean weight of all laid eggs was  $66.3 \pm 6.25$  g in the control group and  $65.6 \pm 5.44$  g in the experimental group ( $P \leq 0.01$ ). Such performance was achieved at the consumption of feeding mixture being 141.7 g per laid egg in the control group and 137.6 g per laid egg in the experimental group. The consumption of feeding mixture in the experimental group was 4.1 g lower than that in the control group. The mean values of parameters monitored in blood plasma such as uric acid, cholesterol, glucose, lactose, calcium, phosphorus, ALP, and LDH in both groups of layers ranged within reference intervals, with no significant differences being detected between both groups. However, statistically significant differences between both groups were found in total plasma protein ( $P \leq 0.01$ ), triacylglycerol levels ( $P \leq 0.05$ ), and magnesium ( $P \leq 0.01$ ), which were elevated in the control group, and in AST ( $P \leq 0.05$ ) whose level in the control group was significantly lower than that in the experimental group. The results of haematological tests performed with layers' blood revealed statistically significant changes in parameters such

as the erythrocyte count ( $P \leq 0.01$ ), haemoglobin level ( $P \leq 0.01$ ), and MCHC ( $P \leq 0.05$ ), which were elevated in the experimental group, and in the leukocyte count ( $P \leq 0.05$ ), which was lower in the experimental group, as compared with the control. However, the values found varied within physiological ranges.

**Keywords:**

ZeoFeed; layers; performance; blood tests

[ [fulltext](#) ]

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