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Czech Journal of Animal Science

The effect of carnitine on hatching rate and metabolic profile of blood in breeding layers

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Czech J. Anim. Sci., 49 (2004): 517-523

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We examined the effect of orally administered L-carnitine (at a dose of 30 mg per kg of feeding mixture) on egg hatching and some haematological and biochemical parameters of blood plasma

in Cobb 500 breeding layers of meat type. The experimental results confirmed a positive effect of L-carnitine, which increased the hatching rate significantly ($P \leq 0.05$) by 8.89% as compared to the control. This positive effect resulted from a highly significant ($P \leq 0.01$) decrease in the number of unfertilized eggs in experimental layers (4.44%), as compared to the control (12.2%). Haematological tests such as total counts of erythrocytes and leukocytes showed no differences between control and experimental layers. However, the average levels of haematocrit and haemoglobin in experimental layers were significantly lower ($P \leq 0.01$) (0.31 l/l and 85.67 g/l) in comparison with the control (0.33 l/l and 89.92 g/l). Biochemical examination of the samples of blood plasma collected from experimental layers after the administration of L-carnitine revealed higher levels of glucose and magnesium and lower levels of total protein, cholesterol, AST, calcium and phosphorus, as compared to the control. The differences in the average levels of the monitored biochemical parameters between control and experimental layers were found highly significant ($P \leq 0.01$).

The results provide new knowledge of the effect of L-carnitine on the metabolism of layers. These results are important not only from the scientific aspect, they are also of practical importance and can be used to formulate diets for breeding layers in order to enhance reproduction.

Keywords:

layers; L-carnitine; reproduction; haematological and biochemical parameters

[[fulltext](#)]

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