

DETERMINATION OF OPTIMAL CONCENTRATION OF ORGANIC SELENIUM ON EGG PRODUCTION IN LAYING HENS

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Abstract

Feed supplemented with organic selenium have positive effect from different aspects as: keeping normal spermatogenesis, improved hatchability and better viability of one-day offspring's, the cells oxidative protection, improved immune status and production and quality of eggs and meat. This research aims to highlight the effect and importance of supplementing chicken rations with organic selenium (Sel-Plex[®]) as an indicator of their performance in terms of egg and meat production.

The experiment was conducted for a period of 11 weeks in a poultry farm near Podujeve (Kosovo). A total of 300 Lohman Brown layers were divided into three groups as follows: control group (C), experiment 1 (E1), experiment 2 (E2). For the three groups, the same feed formula was applied, but if the control group was fed with the basic feed, and the feed formulas of the other two consequent ones were supplemented with organic selenium (Se) Sel-Plex[®] (Alltech), with 0.3 and 0.4 ppm respectively. During the experimental period, the following parameters were consistently recorded, monitored and evaluated with the method of comparison and description of results as the live weight of the egg, egg production, egg mass, egg quality and feed conversion ratio (FCR). For the analysis of gained results we used ANOVA test.

At the end of the study, it was shown that the performance indicators of poultry including egg production, egg weight, egg mass, and weight of hens were not affected by the level of supplement selenium in the poultry diet. In the group supplemented with 0.4 ppm selenium, the food was saved in the mass of 1.63% compared to control, and 1.2% compared to E1 (a significant difference of $P \leq 0.05$). A tendency for improving egg quality is seen by increasing the Se dose. Although, the egg weight of E2 was respectively 3.7 and 2% larger than control and E1, so can say that there is only a trend for higher weight, because the differences are statistically unconfirmed. The hens of the best group reached the lower weight compared to the standard hybrid.

Supplementation of poultry feed rations with organic selenium with two different concentrations 0.3 and 0.4 ppm has shown positive effect on poultry performance indicators during egg production. The group, in whose food ration was supplemented that at 0.4 ppm, showed the tendency to improve fertility, egg weight and its components, egg mass, as well as for higher body weight.

Key words: Egg production, Egg quality, Layer, Selenium.