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THE PRODUCTIVITY OF BREEDING HENS AND GUALITY PRODUCTS FOR USE IN FEEDING THREONINE

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Summary. *Introduction of «L-threonine» to the level of 0,60 and 0,63% to the wheat and the corn and soy-bean mixed fodder for breeding chickens in pre-productive (18-23 weeks) and productive (24-51 weeks) periods significantly increased live weight - by 110 g (from 1,93 to 2,04 kg), egg production – by 6,7 things (from 114,4 to 121,1 things), egg fertilization – by 1,1%, output of the young birds - 2,4%, the number of incubative eggs - by 7,6 (from 106,6 to 114,2 things) and reduces the use of feed for 10 incubative eggs - by 140 g (from 2,11 to 1,97 kg).*

Keywords: *mixed fodder, threonine, breeding chickens, reproductive quality, amino acid.*

Statement of the problem. Currently used a number of ways to increase egg production and fertility of breeding chickens, among which the balancing recipes feed with a low level of animal protein at the expense of essential amino acids - lysine, methionine, threonine and tryptophan, is very important.

The biological role of threonine in an organism is complex and diverse. Threonine regulates the metabolism of proteins, fats and carbohydrates; involved in fat deposition in the liver and the abdominal cavity; improves the body's resistance; supports the work of the gastrointestinal tract by protecting mucosa from proteases, are involved in metabolism and digestion; promotes the formation of collagen, which is required for normal growth of young animals. Under the action of the enzyme aldolase threonine is converted into glycine and acetaldehyde. By deamination of threonine cleaved the water molecule and forms an alpha ketomalonate acid and ammonia. Threonine may affect the need birds in

lysine and methionine. The high content of threonine in the diet leads to increased utilization of lysine. Excess methionine in the diet increases the activity of threonine dehydratase in the liver and thereby leads to an increase in demand in the threonine.

The purpose of this study was to increase the use efficiency of wheat-corn-soy feed for breeding hens Poltava clay rocks by introducing different levels of threonine.

Materials and methods. Scientific and economic experience was conducted in 2009 at the experimental farm "Borki" PI NAAN Kharkiv region. According to the principle analogues was formed three groups (200 head) 18 weekly maintenance chickens Poltava clay rocks. The bird was placed in the cell battery OBN-4. The laying period was 7 months. In the experiment determined the appropriate level of threonine (0,53-0.56, 0,56-0,60 and of 0,60-0,63%) in the feed.

From 18 to 51 weeks of age the birds of the first group were fed full-wheat-corn-soybean feed with content from 6,4 to 6,5% of the animal feed (for 8,1-11,0% of protein). Bird of the second and third experimental groups received the same feed, but with the addition of L-threonine in excess of existing standards (98% of the company Ajinomoto) in an amount of 0,03 to 0,04 and 0,07%, respectively (up to a level of 0,56 to 0,60 and of 0,60 to 0,63%).

The results of the research. The introduction of threonine in a wheat-corn-soy feed for breeding hens in the productive period contributed to the increase in live weight - 0,07-0,11 kg Live weight in the third group 17 and 51 weeks of age was highly reliable ($P < 0,01$ and $P < 0,001$) in comparison with other groups. From chickens of the second and third experimental groups was obtained by 0,4 and 6,7 eggs more (114,8 and 121, 1million) than in the control (to 114,4 eggs). In calculating egg production per hen housed was observed a similar trend.

In the second and third experimental groups was the highest safety of the birds, which was higher than in the control group on 1,5-3,5% (95,0-97,0%).

The experience revealed a slight increase in egg mass (59,0 g to 59,6 and 59,7 g) and reduced feed costs by 10 hatching eggs 0,07 and 0.14 kg (2,11 to 2,04-1,97 kg).

The highest feed costs 10 eggs were in the first month of production (5,47-6,84 kg). In subsequent months the cost of feed was reduced to 1,5 kg (at the peak of oviposition) in the third group and gradually increased in the post-peak period to 1,97 kg in the control group.

Higher output of hatching eggs was in laying the second and third groups (of 86.1 and 86.9 per cent) and lower in chickens of group 1 (84,5%). After a 51-week period consumption of feed, which included different levels of threonine, the egg production of the second and third experimental groups was higher than the control – 0,3% and 5,8%, fertilize eggs – 2,9 and 1,1%, the output of youngsters from laid eggs – 1,6 and 2,4%, the number of hatching eggs, 3,7 and 7,6 pieces, fecundity - at 2 and 7 of the head and hatchability of eggs in the third group - by 0,3%.

With the introduction in the diet of breeding hens of the experimental groups in excess of threonine in hatching eggs decreased levels of moisture 74,18 to 73,45 and 73,96 %, increased the number of threonine 6.4 and 12.1% ($P < 0.05$ and $P < 0.001$), serine 10.4 and 8.5 % ($P < 0.001$ and $P < 0.05$). In addition, in the second group, increased levels of glycine by 7,1 % ($P < 0,05$), in the third group - arginine by 5,5 % ($P < 0,01$) and prolina 5,4 % ($P < 0,01$), and increased the ratio of amino acids in relation to the threonine and lysine in comparison with the control group.

The conclusions.

1. The research results proved that the biological efficiency of feed can be significantly increased by introducing into the plant feed is the optimal level of L-threonine.

2. Add in corn-soy feed for breeding hens of 0,03-0,04 and 0,07 per cent in excess of L-threonine increases live weight - 70-110 g (1,93-2.0-2,04 kg), egg – 0,3 and 5,8%, fertilize eggs – 2,9 and 1,1%, the output of youngsters from laid eggs – 1,6 and 2,4%, the number of hatching eggs – 3,4 and 7,1% and the number of Chicks per hen - 2 and 7 of the head, reduces the cost of feed per thousand

hatching eggs - at 7 and 14 kg Consumption of threonine per hen for the experience amounted to 11,2 and 22,3.

3. Increased levels of threonine are up to the specified level does not adversely affect the amino acid composition of chicken eggs.

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