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## Studying Therapeutic And Prophylactic Action Of Carolina.

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### ABSTRACT

The article presents the results of the study of the effect of the preparation Carolinum containing beta-carotene as an active substance on the organism of laying hens and broiler chickens as a means for the prevention of hypovitaminosis A, as well as diseases that develop against the background of a lack of vitamin A diets (alimentary dystrophy chickens with subclinical signs of A-vitamin deficiency). The possibility of using beta-carotene preparations to increase the rate of growth and productivity of agricultural birds was studied.

**Keywords:** carolin, beta-carotene, disease prevention, pharmaco stimulation of growth and productivity.

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## INTRODUCTION

The main task facing veterinary science and practice is the protection of animal health from infectious and non-contagious diseases. The experience of intensive exploitation of agricultural animals and birds in conditions of their high concentration in one territory shows that the main damage to farms is caused by diseases of non-infectious etiology, aggravated by metabolic disorders [2, 4, 6].

Frequent violations of vitamin-mineral nutrition lead to a delay in the realization of genetic potential associated with the high energy of growth of animals and birds and the intensity of metabolic processes, and the occurrence of mass diseases [1, 9]. In this regard, it is very important to consider the search for effective and safe means of stimulating growth, resistance and productivity of animals, preventing and treating diseases associated with metabolic disorders [4, 7].

In the general nomenclature of non-communicable diseases, a significant proportion is occupied by hypo- and avitaminosis, including hypovitaminosis A, as well as diseases that develop against their background and cause significant economic damage to livestock [2]. In these cases, vitamin preparations are recommended for the prevention and correction of metabolic disorders [1, 8].

Among drugs considered to be vitamin, considerable attention of researchers recently attracted beta-carotene. Beta-carotene, as it turned out, is inherent not only in retinol-created but also in other, not less important physiological and pharmacological properties (immunostimulating, antioxidant detoxification, antimutagenic, anticarcinogenic), while such drugs are low-toxic and harmless for use by animals [3]. Interest in the comprehensive study of beta-carotene and its therapeutic and prophylactic use in livestock, veterinary medicine and medicine has increased dramatically in recent years [1, 5, 9]. In this regard, the present work is devoted to testing a drug based on beta-carotene, as a therapeutic and prophylactic for hypovitaminosis A and other diseases of agricultural birds.

## MATERIAL AND METHODS

The object of research is the preparation of beta-carotene carolin. Caroline is a clear, oily-free, oily liquid of a dark red color, odorless, with a taste of an impersonal oil with a beta-carotene mass fraction of at least 0.18%, with an acid number of not more than 0.4 mg KOH / g, with a pericetic number not more than 10 mmol / kg.

The effectiveness of the drug was evaluated on the basis of an analysis of the results of systematic integrated studies of experimental and control birds.

For the research, conventional methods of clinical examination were used. Hematological and biochemical studies of blood serum were carried out.

## RESULTS AND DISCUSSION

In the studies on the effect of carolin on the organism of agricultural poultry, several series of experiments were carried out.

Two series of experiments are devoted to the study of the effect of feeding of carolina to hen hens on the physicochemical and biological properties of eggs carried by them. The egg was examined from the physiological, clinical and economic and economic points of view: first, as a complex indicator of the status of the laying hen's organism and, secondly, as a parameter characterizing egg production, mainly its quality, its appearance.

In the first experiment, according to the principle of analogs at the poultry farm, two groups of laying hens were formed, at 1100 each. The experimental group's hens were fed carolin for 40 days at the rate of 2 liters per ton of mixed fodder. The same mixed fodder, but without carolina, consumed the chickens of the control group.

Studies have shown that when feeding carolina to laying hens, the egg mass increases by 1.3%, mainly due to protein and yolk. In the egg yolk of experimental hens, in comparison with the control, more carotenoids (by 10.15%) and vitamin A (by 8.52%) were contained. In the experiment, the hatchability (by 2.47%), the live weight of day-old chicks (by 1.55%) and their safety (by 1.7%) is higher in the test. Carolyn increased pigmentation of the yolk (by 2 points on the scale of VNIITIP), and the presentation of eggs improved.

The second experiment, conducted at a broiler poultry farm, was delivered in 2 groups of meat laying hens at 7,000 each. Experienced hens fed carolin in a dose of 2 liters per ton of mixed fodder for 20 days. Chickens of the control group did not give carolin.

Under the influence of caroline fed to laying hens, the content of carotenoids in egg yolk (by 13.4%) and vitamin A (by 2.1%) increased. Increased hatchability by 5.5%, and the safety of day-old chickens by 2.7%.

In the next series of experiments, the influence of carolin on the growth and development of chickens was studied. According to the principle of analogs, three groups of chickens were chosen for 95 in each (one - control, two-experienced). The chicks of the first experimental group received carolin in a dose of 3.5 l / t, the second - 5 l / t of mixed fodder. Control chickens were given the same feed but without carolin. After 20 days of clinical observation, control poultry slaughter was conducted; in the liver, the content of carotene and vitamin A was determined.

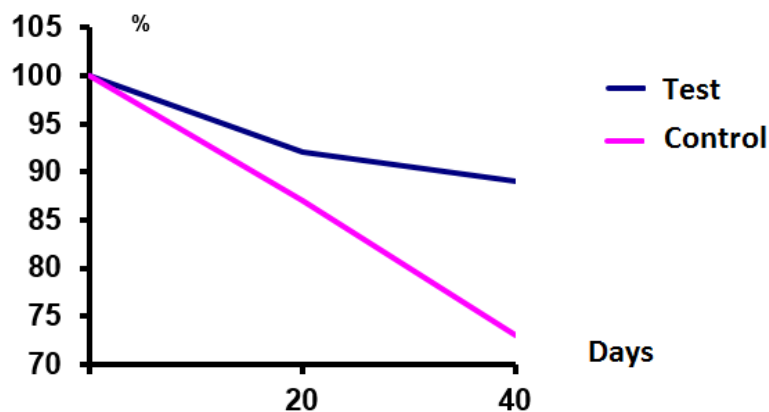


Figure1: Effect of carolin on the safety of A-hypovitaminous laying hens

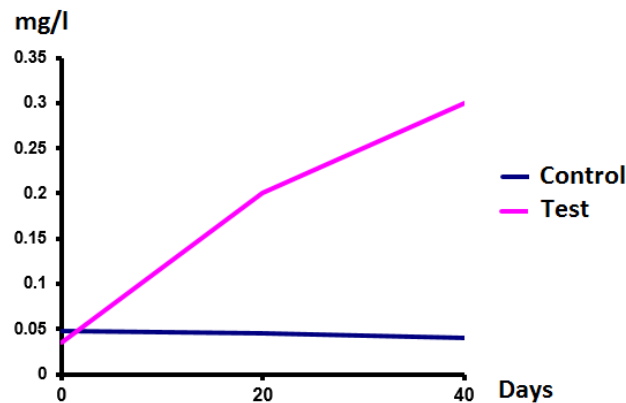
Studies have shown that carolin has an active influence on the growth and development of chickens. The effect depends on the dose of the drug. A larger dose had a more significant effect on the chickens. Compared with the control, the weight of the chickens of the 1st test group was 3.59% more, the 2nd - 5.6%. The increase in carotene in the liver of chickens of the 1st test group was 134.2%, the second - 163.0%, vitamin A - 19.5% and 40.1%, respectively. Caroline warned the emergence of hypovitaminosis A in chickens, increased their safety. The safety was higher than in the control, in the chickens of the 1st test group by 1.8%, in the second group - by 3.3%.

Thus, the results of the conducted studies and clinical observations indicate that caroline has stimulating and prophylactic activity and can be recommended for use in poultry farming.

In the next series of experiments on the test of the therapeutic activity of carolin, laying hens with hypovitaminosis A were used. Lomann-Brown cross chickens noted signs of twilight blindness, xerophthalmia, general weakness, dimness, and ruffling of the tail, decreased egg production, increased mortality, reduced carotene and vitamin A in the blood, liver, egg yolk.

According to the principle of analogs, two groups of hens were chosen for 110 in each. Chickens of one battery were experienced, the other - control. Chickens of the experimental group received caroling daily at the rate of 2 l / t of mixed fodder. Birds were subjected to systematic comprehensive research. From 5 chickens from each group, material was taken for laboratory tests. Serum was determined carotene, total

protein, vitamin A, glucose, total calcium, inorganic phosphorus, in the liver and eggs - carotene, vitamins A, and E.



**Figure 2: Change in the content of vitamin A in the blood serum of A-hypovitaminous hens during their treatment with caroling**

Studies have shown that Caroline has a pronounced therapeutic effect. Under its influence in A-hypovitaminosis chickens weakened and disappeared signs of the disease. Recovering of birds occurred on average in 20 days. In control chickens that did not receive caroling, the signs of A-hypovitaminosis persisted and even worsened. In comparison with the control birds, the safety indicators (Fig. 1), the content of carotene, vitamin A (Fig. 2), total protein, serum glucose, carotene, vitamins A and E in the liver and yolk of eggs were higher than the control birds. Carolina has high therapeutic efficacy in the A-hypovitaminosis of chickens.

### CONCLUSION

The studied preparation of beta-carotene is highly effective when used to treat and prevent hypovitaminosis in birds. Carolyn, when used for preventive purposes, prevents the development of hypovitaminosis A in laying hens and chickens. In birds under the influence of carolinahypovitaminosis A, there is an increase in the concentration of carotene, vitamin A and total protein in the blood, liver, and egg.

Preparations of beta-carotene promote better growth and development of birds, increase their productivity and safety. So Carolina in the composition of mixed fodders activates the growth of live weight by 3.59-5.6% and increases the safety of chickens by 1.8-3.3%;

The use of beta-carotene preparations improves the quality of meat and egg products of laying hens. Feeding of caroling has a beneficial effect on the physicochemical and biological properties of the eggs they carry. Under the influence of the preparation, the egg mass increases by 1.3% due to protein and yolk. There is an increase in carotenoids (by 10.15%) and vitamin A (by 8.52%) in the yolk. The yolk pigmentation on the color scale of VNIITIP is increased by 2 points; the presentation of the egg improves. Increased infertility (by 2.47%) and safety (by 1.7%) daily chickens.

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