Experience in using bioresonance technology in the production of edible eggs enriched with microelements

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The use of bioresonance technology makes it possible to intensify the metabolism in the body, aimed at enhanced absorption of bioelements from feed, their accumulation in eggs, to increase the egg productivity of laying hens by 2.4%, to reduce feed costs by 40 g per dozen eggs and to improve the indicator of production profitability. by 5%.

The problem of electromagnetic stimulation of poultry productivity is of great scientific and practical interest, since this is one of the ways to reveal the still unknown aspects of the physiology of growth, the formation of products and the control of these processes.

The complex of frequency-resonant effects on poultry, called bioresonance technology, allows you to emit the effect of natural compounds or enhance the assimilation of individual feed elements and their transfer into products. For example, exposure to the electromagnetic frequency spectrum (EFS) of insulin enhances the transport of nutrients (glucose, amino acids, vitamins, minerals) from the bloodstream to tissue cells, while it is expected that the bird will receive an additional resource that can be used both to maintain vital functions, as well as and to increase productivity. SES of estradiol activates the ovary and promotes the transport of additional nutrients (yolk precursors) through the liver to the growing follicles.

Under the influence of vitamins, macro- and microelements in an evolutionarily adapted form (natural compounds) on the poultry SES, their assimilation from feed is activated.

The objective of this work is to demonstrate on a production scale the capabilities of bioresonance technology in improving economically significant indicators of the productivity of poultry and in increasing the biological quality of products.

The experience of implementation in the production of commercial eggs was obtained at LLC Krasnodarskaya poultry farm, Krasnodar.

At the age of 1–17 weeks, from chick to pullets, the bird goes through a period of growth and development, at 17 weeks of age it is transferred to the industrial workshop of laying hens. Oviposition begins at 17-18 weeks and continues throughout the year.

In two identical buildings (experimental and control) with an average livestock of 30 thousand kurnesushki cross "Hisex brown" in each. The age of the bird, the conditions of keeping and feeding were the same. The differences consisted in the fact that the bird in the experimental building was exposed to the spectrum of electromagnetic frequencies (EFS) of the medicines Protophan and Estroferm and the vitamin-mineral complex (Table 1).

Protophan is a medical preparation, synthetic human insulin, consisting of amorphous and crystalline insulin in a ratio of 3: 7 (Lente-type insulin). Manufacturer - Novo Nordiks Denmark.

Estroferm is a medicinal product containing 2 mg of estradiol in the form of a hemihydrate, which is identical to natural human estradiol. Manufacturer - Novo Nordiks, Denmark.

The composition of the vitamin-mineral complex "Lifepac senior" (manufacturer Nutripharma, France) is shown in table. 2. (according to the book: Guidelines for the use of biologically active food additives "Vision international people group" to optimize the diet and maintain human health / Edited by M. Gaparov - Moscow: Moscow, 2006. - 193 p.)

Table 1

Algorithm for bioresonance exposure

Bird age, weeks	The control	SES drugs experience
40-60	no impact	Protophan + Estroferm + vitamin and mineral complex

In the experiment, the exposure began at the age of laying hens at 17 weeks and ended at 67 weeks, the registration was carried out within 50 weeks (for 350 days of productivity).

The impact was carried out using the apparatus "Transfer-A", which was connected to the system water supply of the experimental building. "Transfer-A" is a device for energy-information transfer of the properties of drugs and biologically active substances onto a secondary carrier. Manufacturer LLC Center for Intelligent Medical Systems "IMEDIS", Russia.

table 2

The composition of the vitamin and mineral complex

Components	Quantity, mg
β-carotene	nine
Vitamin E	10
Vitamin C	60
Vitamin Bone	0.6
Vitamin B2	0.8
Vitamin Bfive	2,3
Vitamin B6	0.8
Vitamin Bnine	0.2
Vitamin B12	1.5
Vitamin PP	nine
Vitamin H	0.05
Calcium hydrogen phosphate, incl. calcium, Phosphorus	45 10.5; eight
Magnesium carbonate, incl. magnesium	73.85 19
Ferrous gluconate, incl. iron Copper	0.246 0.03
sulfate, including copper Manganese	4 1
carbonate, incl. manganese Zinc oxide,	4 1.7
incl. zinc	6.25 5
Sodium selenite, including selenium	0.11 0.05
Chromium orotate, incl. chrome	0.3 0.025

The first selection of eggs for biochemical studies was carried out 10 weeks later, i.e. at the age of 28 weeks of laying hens, the next control was made at the age of 52 weeks.

Throughout the entire experiment, the live weight of the bird, the rate (intensity) of laying, the weight of eggs and feed costs were taken into account, and biochemical analyzes of the composition of compound feed and eggs were carried out. The blood of laying hens was examined. Biometric processing of the obtained data was carried out by the correlation method (A.I. Ovsyanikov, 1976).

The main results of the experiment are presented in table. 3.

Table 3

Laying hens productivity indicators

Indicators	The control	An experience	2 +/- 3
Layer weight, kg	1, 81	1.83 kg	+ 0.02
Laying rate,%	79.6	81.5 ***	+ 1.9
Egg mass, g	63.2	62.2 **	- 1.0
Total eggs per medium hen	290.5	297.5	+ 7
Feed conversion:			
kg / 10 pcs.	1.44	1.40 **	- 0.04
kg / kg egg mass	2.28	2.26	- 0.02
Amount of feed per bird / day, g	116.5	115.3	- 1.2

* * P ≤ 0.01; *** P ≤ 0.001

The average egg-laying rate in the experiment was 81.5% or 297.5 eggs per average laying hen per year. In the control, respectively, 79.6% and 290.5 eggs, which is 7 eggs or 2.4% less.

Feed consumption per 10 eggs in the experiment was 1.40, while in the control - 1.44%; which is 0.04 lower, that is, for each egg produced using bioresonance technology, 4 g less feed is spent. Feed costs for the production of 1 kg of egg mass were 1.26 in the experiment; in control - 2.28. On average, for the period, 115.3 g of feed were consumed per 1 head per day in the experiment, and in the control - 116.5 g, which is 1.2 g more.

To increase productivity indices, it is necessary to have a higher level of hens blood homeostasis. The biochemical composition of the blood of laying hens from the control and experimental buildings corresponds to the indicators of the norm, but there are certain differences. Since in

Since the insulin spectrum was used in the algorithm of exposure, the decrease in glucose and cholesterol levels in the birds of the experimental housing is quite understandable. At the same time, the total volume of energy material in a bird does not decrease, but more intensively passes from the bloodstream to the tissues and cells of the bird's body, providing an additional resource for the implementation of productivity, table. 4.

Table 4

Biochemical composition of the blood of laying hens

Indicators	Traditional	Bioresonance
Hemoglobin, g / l	139 ± 9.0	131 ± 6.6
Total protein, g / l	56.4 ± 2.3	60 ± 2.0
Albumin, g / l	15 ± 0.8	21 ± 1.4
Globulins, g / l	41.4 ± 2.5	39 ± 2.6
A / G	0.3	0.5
Cholesterol, mol / l	1.6 ± 0.2	1.2 ± 0.2
Glucose, mol / l	10.8 ± 7.8	10.1 ± 3.9
Calcium, mol / l	2.1 ± 0.07	2.8 ± 0.1 ***
Phosphorus, mol / l	4.8 ± 0.6	6.1 ± 0.4 ***

P ≤ 0.01

Bioresonance technology determines a more physiological ratio of albumin and globulin fractions of blood serum, in the experimental group it is 0.5; while in the control - 0.3. The level of phosphorus and calcium in the blood of the experimental laying hens increased.

The content of all investigated microelements in eggs obtained with the use of bioresonance technology is, to varying degrees, higher than without it. It should be noted that with an egg, all trace elements are 100% available. The highest difference in the level of manganese content - 24 μg per 100 g of egg mass, which is eight times higher than the level in the control. The recommended manganese intake for humans is 2.5–5 mg. The iron content exceeded the control level by 2.5 times, the content of copper and zinc increased by 26–39%. It is known that metals, when absorbed, compete with each other, and it is not possible to obtain their joint accumulation in an egg using traditional technologies; using bioresonance effects, this problem is solved.

It should be noted that the results of studies of macro- and microelements in the experimental and control groups, at the age of 28 and 52 weeks of birds, are comparable. Table 5 presented the results of the two studies and their mean values.

Table 5

Macro and mic content Roelements in eggs, mg /%

Indicators	Bioresonance technology			Traditional technology			Bioresonance in% k traditional
	28 weeks	52 weeks	Average	28 weeks	52 weeks	Average	
Calcium	57.6	58	57.8	55.1	55.0	55.0	102
Phosphorus	223	225	224	197	200	198	112
Magnesium	fifteen	fifteen	fifteen	15	15	15	100
Potassium	191	196	194	147	149	148	113
Sodium	93	103	98	85	89	87	112
Iron	3.74	3.76	3.75	1.48	1.49	1.49	250
Manganese	0.024	0.024	0.024	0.003	0.003	0.003	800
Copper	0.078	0.077	0.078	0.060	0.061	0.060	129
Zinc	1.23	1.22	1.22	0.87	0.88	0.87	136

Complex of trace elements - Mn, Fe, Cu and Zn - is necessary to ensure normal metabolic processes during intensive growth and regeneration of bone tissue, to maintain normal blood homeostasis.

The coherence of biochemical transformations stands out clearly when we evaluate the metabolism in its fuller manifestation. Analyzing the intensity of the transition of macro- and microelements from feed to eggs, we, taking into account the cost of feed for the production of ten eggs (1.44 control and 1.4 experience) and the content of these elements in them, as well as taking into account the average weight of eggs in the experiment and control (60.3 and 60.9 g, respectively), calculated the efficiency of the transition of the studied elements from the feed to the eggs of Table. 6.

From table. 6 shows that all studied elements are transferred from feed to products with varying degrees of efficiency. However, there are significant differences between experiment and control: so the transition of iron by 8 times, manganese by 10 times, zinc by 40%, copper by 26%, potassium by 31% more effective. Potassium, phosphorus and sodium pass into eggs 11-14% more efficiently than in the control.

Table 6

Efficiency transition and macro- and microelements from feed into eggs

Bye-initiators	Bioresonance technology			Traditional technology			An experience/ the control, %
	Asked with feed for semi-chenia 10 eggs, mg	Sode-lives in 10 eggs, mg	% used education	Asked with feed for obtaining eggs, mg	Contains-Xia at 10 eggs, mg	% used	
Calcium	4730	359	7.6	4860	332	6.8	111.8
Phosphorus	10000	1351	13.5	10300	1206	11.7	111.5
Sodium	1770	591	33.4	1820	530	29.1	114.8
Potassium	12110	1170	1.05	12440	901	0.80	131.0
Iron	760	22.6	9,7	790	9.1	1,2	808.3
Manganese	150	0.15	0.1	160	0.018	0.01	1000
Copper	twenty	0.47	2.4	twenty	0.37	1.9	126.3
Zinc	100	7.42	7.4	100	5.30	5.3	139.6

The creation of new technologies is always a creative process, and their implementation requires obtaining and demonstrating results that are convincing for the poultry manufacturer. Summing up the results of productivity and feed costs in the experimental and control buildings, but without taking into account the quality of the eggs, we calculated the economic efficiency of the bioresonance technology. Additional net income from 1 building per year amounted to 650 thousand rubles. The operating profitability has increased by 5%, the investment is paid off in 1.4 months. Thus, in the production of commercial eggs, bioresonance technology has a pronounced investment attractiveness - it quickly pays back the costs and gives a guaranteed profit.

A.G. Avakova, Yu.A. Kovalev, K.G. Bobyr, V.S. Podolskaya Experience of using bioresonance technology in the production of edible eggs enriched with trace elements //