# Stimulation of egg production in quails by electromagnetic radiation in molecular spectrum of hormonal drugs

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The hen's ovary contains more than 5 thousand eggs and only 10% of them can be converted into an egg during the period of use of the laying hen. Such a margin of reproductive strength gives reason to think about its practical implementation.

A more early maturing bird with the same intensity has advantages in egg production, and this makes it relevant to work aimed at increasing early maturity (reducing the age of laying the first egg or reaching 50% of egg production). However, breeding progress in terms of sexual maturity can lead to a decrease in the live weight of chickens below the limits of biological necessity. Phenotypic activation, subject to a deep analysis of the current level of knowledge of the biology of egg production, makes it possible to increase the number of eggs laid by a bird during the period of use.

The rhythm of the reproductive system - ovulation and egg-laying - is controlled by an extremely sensitive neuroendocrine system, and estradiol plays an important role in this function. Insulin is indirectly involved in the regulation of reproductive function, through the activation of metabolic processes in the liver and an increase in the synthesis of yolk precursors.

The purpose of these studies is to study the effect of the cybernetic component of estradiol and insulin on sexual maturity of poultry and on egg productivity in general.

The working hypothesis is that from the informational influence of radiation of the electromagnetic field in the spectrum of the hormone estradiol, an increase in the work of the ovary is expected, which should ensure an increase in the synthesis of yolk precursors by the liver.

From the informational influence of the electromagnetic field in the emission spectrum of the hormone insulin, an increase in the vithelogenic function of the liver is expected due to the accelerated supply of nutrients from the bloodstream, which in turn activates the function of the ovary.

Methodology. Experimental work on the study of the bioresonance effect on egg productivity was carried out on quails, as on the most convenient model object. According to the principle of analogues, three groups of Japanese quails were formed at the age of 30 days, 70 heads each. The experiments were carried out in cells at the experimental base of the institute. Temperature and light conditions were standard for quails of this age group. Drinking was carried out from vacuum-type plastic drinkers. Feeding was carried out with a compound feed balanced in terms of basic nutrients.

In the second experimental group, we used the medicine "Estroferm" (manufacturer Novo Nordiks, Denmark). Each estroferm tablet contains 2 mg of estradiol hemihydrate, identical to natural human estradiol.

In the third group, the drug "Monotard MS" (porcine insulin) was used. The transfer of the properties of drugs to drinking water was carried out using the "Transfer" apparatus. The exposure was carried out 5 days a week for 12 hours a day.

Experiments started at the age of 30 days and completed at the age of 72 days (reference period - 42 days).

The table shows the results of the experiment obtained under the influence of the spectrum of electromagnetic frequencies of estradiol (group 2) and insulin (group 3). By the end of the counting period, the best safety of poultry was obtained in the group exposed to the spectrum of electromagnetic frequencies (EFS) of insulin - 97.1%, in the group exposed to estradiol, the safety was 95.7%, and in the control group - 93.3%.

The largest number of eggs was obtained in the second group - 1097 eggs in total, or 15.7 pieces per initial hen; in the third group - 1006 and 14.4 and in the control group - 846 and 12.1, respectively. The difference is highly significant.

A significant difference was obtained in terms of the average egg weight - control - 10 grams, the second group 10.6 g, or 106% to the control and the third group - 10.9 g and 109%, respectively. Obviously, the total egg mass in the experimental groups was significantly higher, the control group - 8460 g, the second group - 11628 g and the third group - 10965 g. These values are 137.3% and 129.6% of the control level.

table

Egg productivity of quails under bioresonance exposure
(accounting period - 42 days)

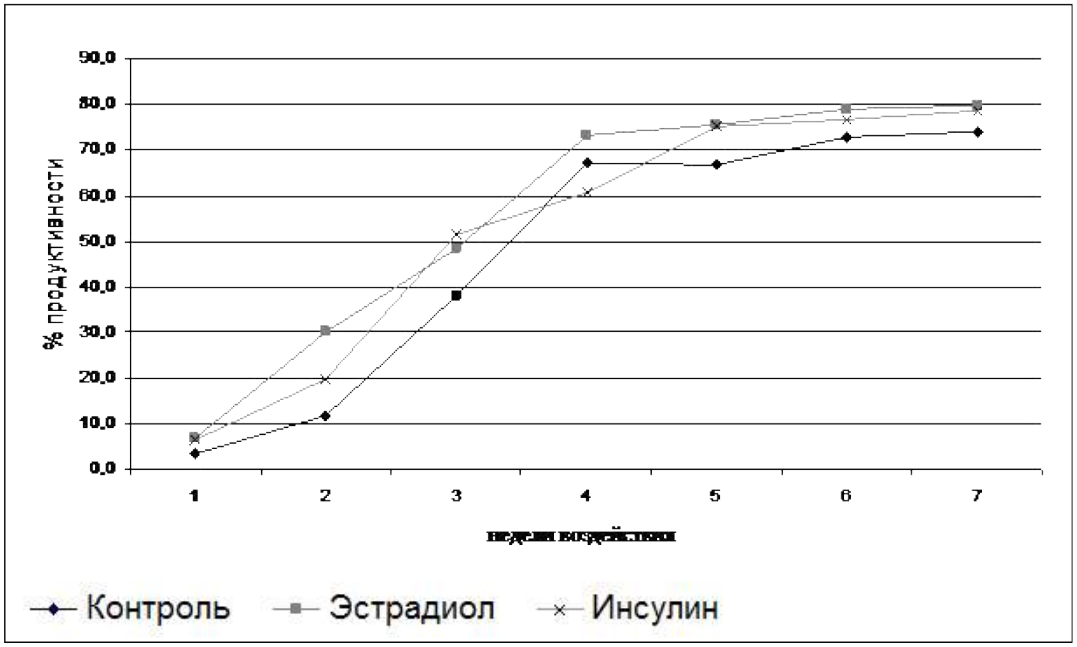
| Indicators | 1 - control | 2 - SES experience estradiol | 3 - experience of SES insulin |
|---|---|---|---|
| At the beginning of the experiment | | | |
| Heads | 70 | 70 | 70 |
| Live weight, g | 114.8 ± 2.6 | 114.1 ± 2.3 | 113.6 ± 2.0 |
| At the end of the experiment | | | |
| Heads | 66 | 67 | 68 |
| Live weight, g<br>% to control | 189.3 ± 13.1<br>100 | 179.3 ± 12.7<br>94.8 | 181.6 ± 12.6<br>96.1 |
| Safety,% | 94.3 | 95.7 | 97.1 |
| Number of eggs:<br>total, pcs.<br>% to control | 846<br>100 | 1097 ***<br>129.7 | 1006 ***<br>118.9 |
| For the initial<br>laying hen, pcs. | 12.1 | 15.7 | 14.4 |
| Average egg weight:<br>PC.<br>% to control | 10.0 ± 0.05<br>100 | 10.6 ± 0.05 **<br>106 | 10.9 ± 0.03 **<br>109 |
| Total egg mass, g<br>% to control | 8460<br>100 | 11628<br>137.4 | 10965<br>129.6 |

* * p ≤ 0.01; *** p ≤ 0.001

By the end of the experiment, the live weight of the bird in the control group was the highest and amounted to 189.3 g, in the most productive group the live weight was the smallest - 179.3 g, or 94.8%, in the group under the influence of SES insulin, the indicator for live weight took an intermediate position and amounted to 181.6 g.

The most striking differences in the percentage of productivity are found when studying the dynamics in the first weeks of the experiment. After the first week after the start of laying, the group of quails exposed to the spectrum of the electromagnetic frequencies of estradiol showed 30% egg production: the group exposed to the spectrum of electromagnetic frequencies of insulin - about 20%, while the percentage of egg production in the control group was only 10%.

By the end of the second week, the productivity of the two experimental groups was approximately the same and approached 50%, the control - 38%. After three weeks of the experiment, quails receiving estradiol SES showed 74%, insulin SES - 60%, the control group took an intermediate position. In the next fourth, fifth and sixth weeks, productivity in the experimental groups is the same and gradually increases from 80 to 85%, the productivity of the control group continues to lag, from 67% rises to 74% (Fig.).




Rice. Dynamics of change in egg production of laying hens

Analysis of the dynamics of the productivity of quail under the influence of the SES hormones shows that at the beginning of the exposure the most striking difference in the intensity of egg-laying is observed. Further, the difference between control and experience decreases and remains within 8-10%. The birds of the experimental groups at an earlier age reach 50% of egg production and reach the peak of productivity faster, which characterizes it as more early maturing.

From the results obtained for the reference period, the following conclusions can be drawn: the effect of both estradiol and insulin on the laying quails of the SES stimulates the egg production of poultry by 129.7% and 118.9%, increases the egg weight by 106 and 109%, increases the safety of the bird by 5.2% and 3.9%, reduces the live weight of quails by 5.2 and 3.9%, respectively.

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