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Preparatory Stage of Immunization-Free Experimental Production in “Lohmann Lsl Classic” Chicks

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Annotation: This study is aimed at evaluating zoohygienic and technological factors during the initial stage of rearing and keeping Lohmann LSL Classic chicks under experimental conditions. On March 28, 2024, 70-day-old chicks were transported from the Ilonsoy Lohmann poultry farm to the vivarium of Samarkand State University of Veterinary Medicine, Livestock and Biotechnology. During the experiment, the birds were not vaccinated against infectious diseases and were kept under natural immunity conditions. The chicks were housed in a room with an area of 15 m², where the ambient air temperature was maintained at 30 °C, while the temperature under infrared lamps ranged from 35 to 36 °C. The initial average live body weight was 36.6 g. Feeding was carried out using the ad libitum method, taking into account the high egg-laying potential of the breed.

Keywords: Chickens, Temperature, Feed, Initial stage, Growth, Poultry meat, Immunoglobulin, Immune serum, Veterinary medicine, Poultry farming, Scientists, Innovation, Lohmann LSL-Classic.

Introduction: Providing the population of the Republic of Uzbekistan with sufficient quantities of safe and high-quality meat products is one of the priority tasks of the livestock sector. In this process, significant responsibility rests on livestock producers, veterinary specialists, and scientists. Achieving high production indicators in animal husbandry is primarily closely linked

to the development and practical implementation of effective preventive and therapeutic measures aimed at maintaining animal health. Therefore, the creation of innovative therapeutic and preventive agents in veterinary science, as well as the evaluation of their effectiveness based on modern scientific research methods, is of particular relevance.

Poultry meat is one of the most widely consumed and highly demanded food products among the population. This is explained by the high biological value, easy digestibility, and favorable nutritional properties of poultry products. Poultry meat and eggs are considered important sources of biologically complete proteins, fats, vitamins, and essential macro- and microelements necessary for the human body. Ensuring stable and efficient production in the poultry industry requires strict veterinary and sanitary control, prevention of diseases, and the implementation of scientifically substantiated rearing and treatment measures.

Materials and Methods. For conducting the planned experiments, on March 28, 2024, 70-day-old Lohmann LSL-Classic chicks were transported from the Ilonsoy Lohmann poultry farm to the vivarium of Samarkand State University of Veterinary Medicine, Livestock and Biotechnology. In accordance with the aims and objectives of the experiment, the birds were not vaccinated against infectious diseases, including infectious bronchitis, Newcastle disease, avian influenza, or other infectious diseases present in the incubator of the above-mentioned poultry farm. The chicks were kept relying solely on natural immunity and were placed in a pre-prepared room measuring 2.5 × 6 m (15 m²). The ambient air temperature in the room was maintained at 30 °C.

The floor surface was covered with soft wood shavings, and the entire area was lined with paper that was replaced daily. During the first days of life, standard feeders and drinkers were used. Two 250 W infrared lamps were suspended approximately 60 cm above the litter. The chicks were positioned directly under the infrared lamps, where the air temperature ranged between 35 and 36 °C. This temperature was maintained for the first 72 hours. At the beginning of the experiment, the average body weight of the chicks was 36.6 g.

To obtain high-quality experimental material, an *ad libitum* feeding regime was applied, as Lohmann chickens are a breed with high egg-laying potential. Due to the efficient conversion of feed into egg production, these chickens have high nutritional requirements.

Some results obtained from the first stage of the experiment are presented in Tables 1 and 2.

Jadval №: 1. Growth of live body weight of five-week-old chicks and feeding performance under standard lighting conditions.

Week	Live Body Weight (g)	Feed Requirement (g)	Daily Gain (g)	Feed Type	Light Duration (h)	Temperature (°C)
1	69 (68–70)	12	84	Start	24	35–36
2	112 (110–114)	25	259	Start	20	28–30
3	190 (188–192)	30	469	Start	20	26–28
4	242 (238–246)	32	693	Start Grow	14	22–24
5	321 (315–327)	38	959	Grow	11	19–20

Jadval №: 2. Performance indicators of chicks fed according to standard norms.

Week	Average Live Weight (g)	Experimental Weight (g)	Weight Gain (g)	Feed Consumed (g, Exp)	Feed Standard (g)
1	75	69	2	84	70
2	125	112	4	259	189

3	175	162	4	469	350
4	257	242	8	693	553
5	337	321	12	959	791

Comparison with Standard Parameters According to the Lohmann LSL-Classic Management Guide

According to the standard parameters in the Lohmann LSL-Classic management guide, the results of our preparatory stage show the following. Over the last five weeks, chicks involved in the experiment had live body weights 6–16 g below the standard. Additionally, feed consumption during this period exceeded the standard by 14 g per bird in the first week and reached 168 g per bird in the fifth week. However, the experimental uniformity index proved to be significantly more efficient than the values indicated in the management guide. In the first week, the standard difference between the smallest and largest chicks was 4 g, whereas the experimental data showed only 2 g. The maximum uniformity index for the chicks, according to the experimental data, was 12 g, while the standard shows this difference was observed in three-week-old chicks. By the fifth week, it reached 20 g. The health of the chicks in the experiment was the same as the control group, with a 100% survival rate.

Conclusion Analysis of Tables 1 and 2 indicates that rearing five-week-old chicks under standard lighting and feeding conditions significantly affects their live body weight and growth rate.

Live Body Weight and Growth Dynamics

The chicks' live body weight increased steadily from week to week.

At the end of week 5, the experimental chicks had an average weight of 321 g, while the standard group reached 337 g.

Although the experimental group's values were slightly below the standard, the growth dynamics were maintained.

Feed Consumption

Feed consumption increased each week.

By week 5, the experimental group consumed a total of 959 g, compared to 791 g for the standard group.

This indicates higher feed intake in the experiment, suggesting slightly lower feed efficiency.

Effects of Lighting and Temperature

Lighting duration was gradually reduced, and temperature was decreased stepwise over the weeks.

This regime corresponded to the physiological development of the chicks and ensured continuous growth in live weight.

Overall Assessment

Chicks reared under standard conditions showed higher live weight and growth, as well as more efficient feed utilization.

In the experimental conditions, growth was slightly slower, and feed consumption was higher.

Strict adherence to standard feeding, lighting, and temperature regimes during rearing ensures optimal live body weight gain and efficient feed utilization in chicks.

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