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Morphological integrity of cells of blastoderm as parameter of assessment of grow power of an embryos

Meta. Develop a method for assessing the viability of embryonic cell cells before laying eggs for incubation, establishing a link between the number of viable blastoderm cells and egg vividness. Methods. To evaluate the viability of the embryonic disc, a method for determining the integrity of cell membranes was used. Results A significant decrease in the number of viable blastoderm cells from 95 to 60% has been established, with an increase in the shelf life of eggs for up to 3 weeks, a correlation between the number of viable blastoderm cells and egg output - r = 0,99. Conclusions This technique can be used during the biological control of egg quality before incubation.

Key words: blastoderm cells, embryonic disc, vitality, integrity of membranes, cell suspension, egg withdrawal.

Introduction. The evaluation of the quality of eggs before incubation gives Immediately after the demolition of the chicken egg egg not only predicts its results, the reon is a multi-layer blastoderma, which, in turn, receives information about 60,000 to 80,000 cells in a timely manner. In the course of the changes occurring in the eggs, and to conserve eggs, there is a reduction in insufficient measures to improve their characteristic number of blastodermal cells, rhizomes. Preliminary assessment of the quality of the incubus-induced apoptosis and necrosis [3, 4, 9, 10]. In the course of studies, the amount of apoptotic ovulation time on the ovoscope and the opening of the v-cells of the chestnut embryos blastoderms was a specimen sample. It should be noted that each of them found that immediately after the demolition of the egg external characteristics of the eggs, the small number of associated eggs was 3.1%, and after 2 weeks of their vividness. Only analysis of several signs of storage of eggs at a temperature of 12oC - in the complex allows estimation to be more likely to increase to 13,9%. The authors assumed the biological value of eggs. That mortality of the blastoderm cells is usually. Estimation of the quality of eggs after their opening of storage time may, in general, affect living conditions-limited to the study of the characteristics of the capacity-capacity of the embryo [6, 8, 12]. Consequently, changes in dandruff, protein and yolk. However, there are currently techniques in the blastoderm during storage of eggs, due to which it is possible to evaluate and the condition of the cells can be expected to reduce the output and quality of the rhino. Although these techniques and have their shortcomings, the young. We believe that the total number of them, better than others, allows for the establishment of viable cells of the blastoderm can be the quality of the egg, since it is evaluated as its main indicator of the viability of the embryo. The present-component is a germinal disk. The information on the number of live cells of the germinal disk before laying eggs for incubation will allow you to predict the yield of young animals.

There are several ways to determine the vital cells of the embryonic disc: carrying out the immunohistologic coloring of the blastosterone cells, flow cytometry, coloring the cell nuclei with special markers, etc. [5, 7, 11]. These techniques are complicated in execution, requiring the availability of special equipment and highly skilled specialists. The purpose of the work is to develop an affordable and reliable way to evaluate the viability of the germ cell cultures before laying eggs for incubation, to establish a connection between the number of viable cells of the bladder and the evaporation of eggs. Materials and methods of research. The research was carried out on eggs obtained from the chickens of the red red-haired breed at the age of 44 - 46 weeks. Eggs were stored in a refrigerating chamber at a temperature of 11 ° C and a relative humidity of 75-80%. The criterion for assessment of viability of blastoderm cells was the integrity of cell membranes. To determine the

integrity of the membranes of the blast-dermal cells on the 2nd (control group), 7th, 14th, 21st day of storage, they took 10 eggs and isolated the embryonic disks. The resulting cell suspension was mixed in a ratio of 1: 1 with a solution of ethidium bromide (1-10 M) in phosphate buffer (FSB) and under the microscope of ML-3, 200-300 cells in each sample were evaluated (using excitatory light with wavelength 365 nm, luminescence was observed in the region of 500-700 nm). Cells with colored nuclei were considered damaged, whole cells (undamaged cells) were viable (Fig. 1). To establish the relationship between the number of viable blastoderm cells and the egg output, they were placed on incubation on the 2nd (control group), 7th, 14th and 21st day after storage. In total, about 1100 pieces are cached. Eggs Incubation was performed according to standard regimens [1]. After incubation, incubation waste was detected and causes of death of embryos [2]. Research results. The results of the evaluation of the viability of the blastoderm cells show that in the case of an increase in the duration of egg storage, there is a significant decrease in the number of viable germ cells. Thus, the assessment, carried out 2 days after the demolition of eggs, shows that the number of whole cells of the digestive disk was 95%, after a week of storage it decreased to 86%, in 2 weeks - to 68.3, and after 3 was only 60 % (P 0.001) of the total number of cells. The germinal disk in the egg is located in such a way that on the one hand it directly contacts the yolk, and on the other hand, it touches the cellular membrane surrounded by a choppy protein chamber. Therefore, the quality of these egg components is very important for maintaining the viability of the blastodermal cells. The changes in the characteristics of the internal contents of the eggs during storage negatively affect the viability of the blastoderm cells.

Fig. 1. blastoderm cells: a - before coloring; B - after coloring; 1 - damaged; 2 - goals, viable

Fig. 2. Dependence of evidenability of eggs on the number of viable blastoderm cells and storage time of eggs: 1 - the number of viable blastoderm cells; 2 - evapotranspiration of eggs.

Indicators of young juvenile output and evapotranspiration of eggs in our experiments depended on the number of viable cells of the bladder (a correlation coefficient r = 0.99). Egg withdrawal significantly deteriorated after 14 days of storage, which coincides with a decrease in the level of viable blastodermal cells (Fig. 2). The vividness of the eggs decreased by 21.9%, and the number of viable germ cell counts by 26.7% compared to the egg after 2-day storage (control group). After 3 weeks of storage, the viability of the eggs was 57%, the number of viable cells of the blastoderm - 60, which is 28.1% and 45%, respectively, less than that of the control.

The analysis of incubation waste indicates that the eggs vividness decreased due to increased mortality of the embryos at different stages of embryogenesis. In groups of eggs with a shelf life of 14 and 21 days, waste categories such as "blood ring" and "drooping" prevailed (see to-blitz). Thus, the number of "blood rings" has increased to 11.8 and 17.4%, and "dysfunctions" - 20.5 and 22.2% respectively, in groups with a 2- and 3-week storage period. An increase in the mortality rate of the embryos in the early stages of the incubation (the category of waste "blood ring") can be directly related to the low number of viable cells of the blastoderm, violations in the formation or functioning of organs of the circulatory system at 3 - 5 The day of incubation, when the vascular field of the yolk sac is formed, uniform blood elements appear, the vessels and heart develop in the body of the embryo. Mortality at later stages of embryogenesis (the category of "drowning" waste) can be explained by the cumulative effect of all adverse factors that have an effect on the embryo during storage and incubation of eggs. We believe this method of assessing the viability of embryonic cell cages can be used during an analysis of the biological quality of eggs before they are placed on incubation. On the basis of the data obtained, it is possible to predict the level of the output of the young.

Conclusion

To establish the viability of blas-after storage). Todermalnyh correlation between cell-applied methods the number of viable cells blastoder-ku determine the integrity of cell membranes. We and egg output (r = 0.99). Methodology The applied methodology allowed Stand-determination of the morphological integrity Blas-howl that by increasing the shelf life todermalnyh cells as parameter estimation eggs there is a significant decrease in the viability of the embryonic disk can be the number of viable germ cell use during biological 95% (2 days after the demolition) 60% (21 day quality control eggs to incubation.

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