

## **DIRECTING THE GROWTH OF CARP LARVAE THROUGH THE APPLICATION OF THERMAL FACTOR**

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The study aims to highlight the correlation between environmental parameters (temperature of the aquatic environment) and the consumption of nutrients, in particular, of the yolk sac, as well as the determination of the resistance and growth rate of fish larvae. At the same time, the study was carried out in order to determine the parameters that could be used as a method of increasing the adaptive capacities of animals to the unfavorable action of the environment. The biological material was represented by fish of the species *Cyprinus carpio* subjected to the application of low temperatures in different periods of postnatal ontogenesis. The experiment was performed on two batches of carp larvae aged 1 and 3 days. Each batch of larvae was divided into 3 experimental sublots, in which temperatures of 10 °C, 14 °C and 20 °C were applied. The experiment was carried out in glass vessels with a capacity of 3 liters of water and a density of 500 larvae per liter. The adaptation period to the tested temperatures was 1 hour. The period of application of low temperatures was 1, 3, 5, 7, and 10 days. After the end of the low temperature application period, the carp larvae were transferred to vessels with a water temperature of 20 °C and received abundant food. The studied parameters were monitored at the end of the application periods of low temperatures and additionally at the end after 10 days of feeding the larvae.

The analysis of the obtained data proves that the number of carp larvae aged 1 day, survived after the application of low temperatures is higher than the number of carp larvae aged 3 days and, correspondingly, constitutes 92,83% compared to 80,14%. At a temperature of 20 °C the number of larvae in experimental groups I and II constituted 87,82% and 66,33%, respectively. After 10 days of feeding the larvae, their number in experimental group I is - 83,6%, and in experimental group II - 73,1%.

Further research has focused on determining the influence of environmental factors on the resorption of the yolk sac of carp larvae. Therefore, in the experimental group I the presence of the yolk sac was registered throughout the experimental period (10 days) at application of the low temperature of 10 °C and 14 °C. At the same time, at the temperature of 10 °C the size of the yolk sac at the age of 5 days did not differ significantly from its initial dimensions. In experimental group II, the presence of the yolk sac was registered only at the temperature of 10 °C until the age of 7 days of ontogenesis. At a temperature of 14 °C the yolk sac was practically no longer present at the age of 5 days of the larvae. At the temperature of 20 °C the presence of the yolk sac was registered only up to 3-4 days of application of the thermal factor. Thus, it can be mentioned that the application of low temperature on carp larvae leads to retention of their development with the keeping of yolk sac for a period of up to 10-12 days after birth. These results are registered at a temperature of 10 °C in the group in which the larvae at the beginning of the experiment were one-day old. Therefore, by applying the thermal factor, it is possible to manage the duration of the development period of carp larvae and to maintain them in case of need for a longer time in the breeding fish farms.

**Keywords:** fish larvae, adaptive capacitie, thermal factor.