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THE DEVELOPMENT OF CLARIUM STAIN CELLS IN SALINE WATER (CLARIAS GARIEPINUS BURCHELL, 1822)

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Abstract:
The article presents the results of experiments aimed at solving such problems as increasing fish productivity through the use of salt water in fisheries. Data on the level of survival of clarias catfish fry in waters with different salinity were analyzed, the results obtained can be used in practical work on fish farming in intensive aquaculture systems. Especially in salty water bodies, when growing commercial fish of clarias catfish, such a scientific result was obtained as the survival of fry resistant to salinity based on the stage of development, from their weight.

Keywords: fry of clarias catfish, clariasgariepinus, water salinity, survival rate.

Introduction

In the last five years, Uzbekistan's fish production has risen to a higher level because local entrepreneurs are paying more attention to intensive systems of aquaculture in fish production, which is very gratifying because about 90 percent of the country's water bodies are managed through irrigation systems and land and water resources. The demand for reasonable use shows its relevance today. In the use of water resources of our country, priority is directed to cultivated areas, as a result, the level

of salinity of lakes resulting from the accumulation of secondary ditch water used in these areas will be high. A reasonable question arises as to what types of fish can be grown in such water bodies at what stage of development. In this regard, our scientific research has been published and is dedicated to the study of the effect of water salinity on the viability of the larvae of the clary laccae. Our study was to study the influence of water salinity on the development of clary lakkara spp.

The clary is found almost all over Africa. Its natural habitat is not only the Maghreb, Upper and Lower Guinea and the Cape province, but this fish is also found in Jordan, Lebanon, Israel and Turkey. Clary laksa has been brought to many African, European, Asian and South American countries and has been acclimatized. Like a number of other species, this fish has adapted to grow in farmers' rice plantations in China. Currently, China is one of the main suppliers of clary lac [1].

Material and Methods

Three special 60-liter plastic containers were used for the experiment. 20 liters of water were poured into each container, and 30 pieces of clary fry with an average weight of 1.19 g were placed.

The amount of salt in the first container was 0 grams, the second container was 3 grams per liter, a total of 60 grams, and the third container was 6 grams per liter, and a total of 120 grams of table salt was added. degrees, the amount of dissolved oxygen in the water was not less than 5-7ml/l. Balanced Aller aqua omukhta feed produced in Poland was used as feed. Experience 11.05.- 11.06, 2022. was held for a month between.

The experiment was aimed at studying the effects of salinity at levels of 0 g/l, 3 g/l and 6 g/l on behavioral responses, growth indicators, and stress parameters in addition to immune parameters.

Results and their Discussion

The optimal salinity level for clary laccae is 0-2.5‰, and the salinity that it can withstand for its growth is up to 12‰ [1].

In the period from May 12 to May 21, 2022, control fishing was carried out and the weight of fish in all three containers was measured and the average weight was determined. The remaining 20 pieces in container #1 amounted to 62 grams, the average weight was 3.1 grams, an increase of -1.86 grams. There were 22 small fish left in container #2, which was 55 grams, the average weight increased by 2.5 grams and made 117 grams. There were 21 small fish in container No. 3, which was 25 grams, the average weight of 1.0 grams was 0.25 grams.

In the period from May 25 to June 7, the second control hunt was conducted and the following results were found: the number of fish left in container No. 1 was 14, which is 178gr:14=12.71gr, an average of 1.24gr the increase is 11.47 g, the number of fish left in container #2 was 17 pieces, this is 165 g: 17 pieces = 9.7 g, the average increase of 1.33 g is 8.37 g, the number of fish left in container #3 was 18 pieces . This is 113 grams: 18 pieces = 6.27 grams, the average increase of 1 gram was 5.27 grams. (Fig. 1, 2, 3)

Peter J. Britz and Thomas Hecht observed the growth and survival of larval clarias gariepinus at water salinities of 0, 2.5, 5.0, 7.5, and 10 g/L in 2 replicate experiments . No significant differences in mortality or growth rates were detected between 0 and 5 g/L salinity. At 7.5g/l, mortality was higher and larval growth rate was reduced compared to lower salinities. At 10 g/l, all larvae died within 48 hours. The condition coefficient of larvae was similar between 0-2.5 g/l and showed a decreasing trend between 2.5-7.5 g/l. It was concluded that 0-2.5g/l is the optimal range for larval rearing and that short-term exposure to high salinities (2.5-7.5g/l) may be effective in the treatment of ectoparasitic diseases. [2]

According to the results of other experiments conducted by the authors of the article with clary larvae, the highest rate of growth was observed in a container with a salinity of 0 g/l, and 6 g/l in 2nd place. observed in the container. In the next 10 days, the situation changed and the lowest growth rate was 6g/l i.e. in container #3 and the highest was in the container with salinity 3g/l observed. (Fig. 1.) It was found that the death rate reached a high level in the container with 6 g/l. Almost similar indicators were found in containers #1, #2. There was also a difference in the intensity of larval activity, that is, in the container with high salinity of 6 g/l, the appetite of larvae was also greatly reduced, but the fish in the second container were the leaders in activity [3].

According to the results obtained in the experiment of Emad M. et al., the limit of tolerance to salinity in freshwater fish has become an important environmental factor affecting growth indicators. Therefore, this study focused on investigating the effects of different levels of salinity on behavioral responses, growth performance, hematological, oxidative and biochemical stress parameters in addition to the immune parameters of clary laccae, the experimental results show that , 360 clary laccae shrimps were randomly divided into six groups and exposed to different salinity levels (0, 4, 8, 12, 16 and 20 g/l) with three replicate tanks per experimental group; Each container contained 20 chicks for 42 days. The results showed that the percentage of chicks with abnormal stress behavior was directly related to the salinity level. On the contrary, the level of viability and growth rates decreased at high

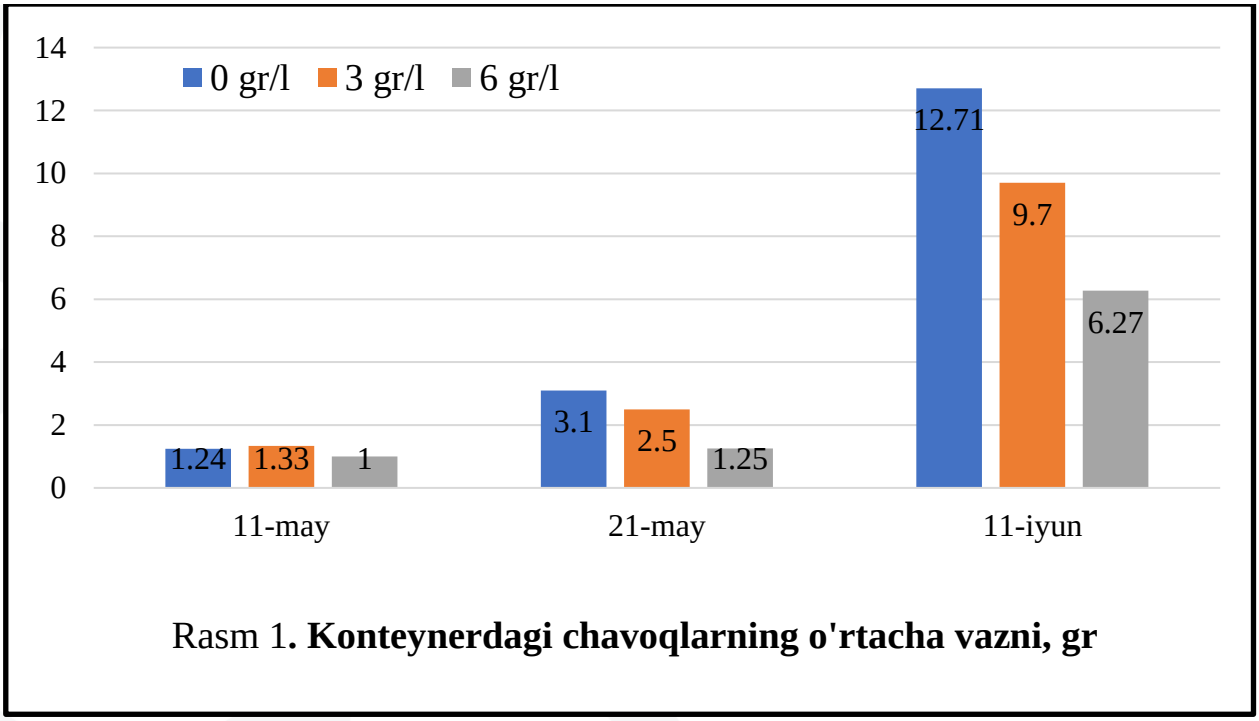
salinities. Therefore, salinity can affect the behavior, survival, and salinity tolerance levels of clary larkspur. [4]

The results of the experiment show that with the increase of water salinity, the results are close to the results of other researchers. At 178 grams, the 3rd container contained 113 grams. In the 1st half and the 2nd half of the experiment, when the growth rates changed proportionally, the results are consistent, that is, as the salinity increased, the growth rates decreased.

However, the mortality rate was high in container 1 throughout the experiment, and container 3 showed the lowest mortality in the second half of the experiment.

Summary

Thus, the effect of salinity on the development of chicks is unique. In the initial period, the container with 3 g/l had a good effect in overcoming the stress situation, and later death occurred in the container with high salinity. the index is minimized, the fry continue to adapt to this, the energy obtained from the feed is spent on adaptation, and the fish begin to lag behind the hanging, in addition, the fish's appetite also fades, so the water salinity in the initial period is 2-3 grams mortality rate is low and growth rates are kept moderate, and it can be concluded that the low mortality increases stress tolerance.



Rasm 1. **Konteynerdagi chavoqlarning o'rtacha vazni, gr**

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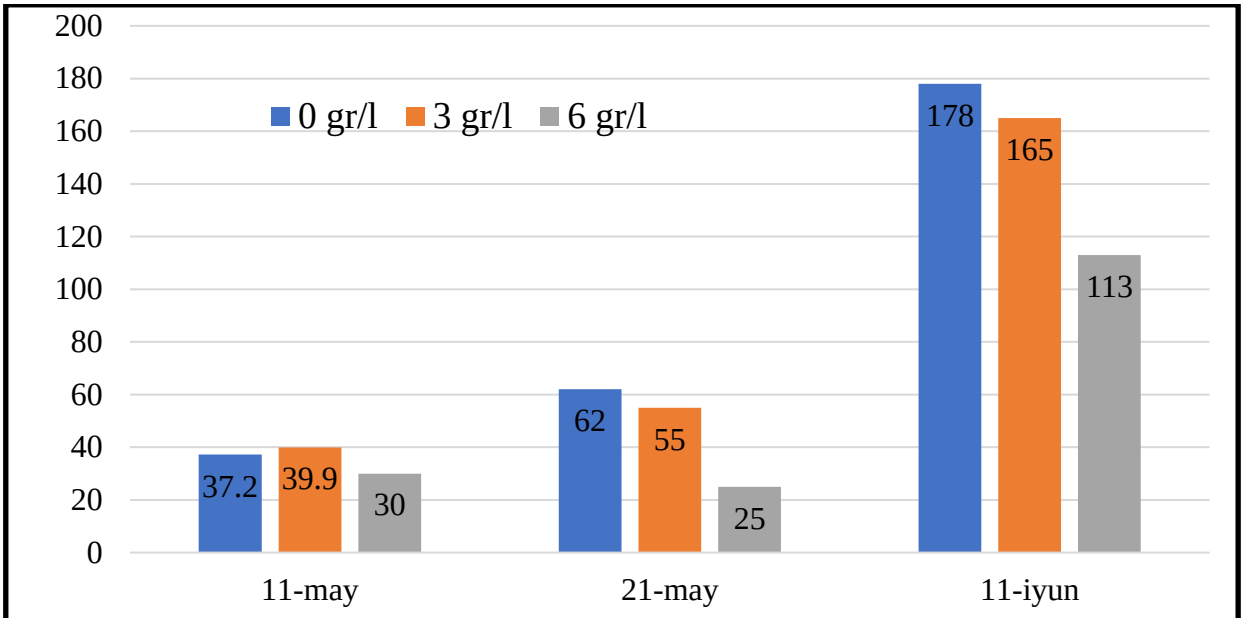
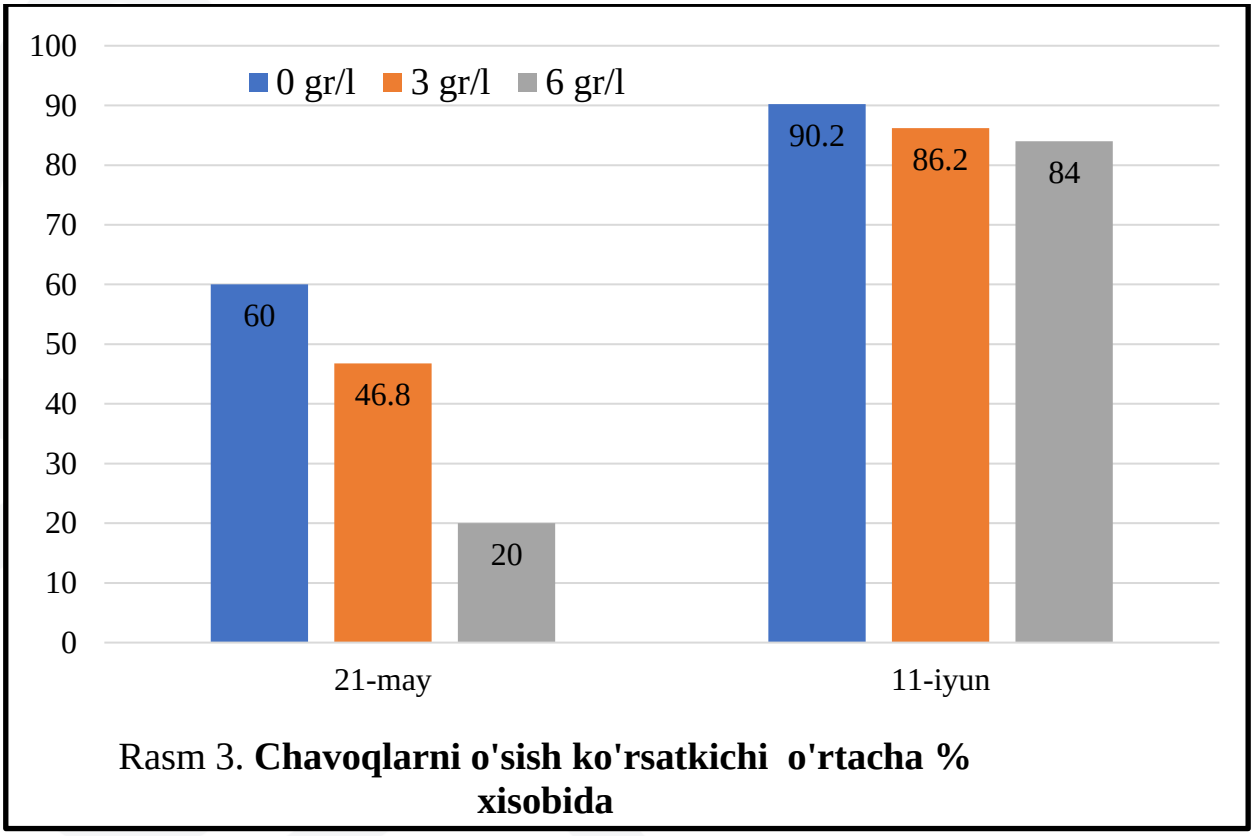
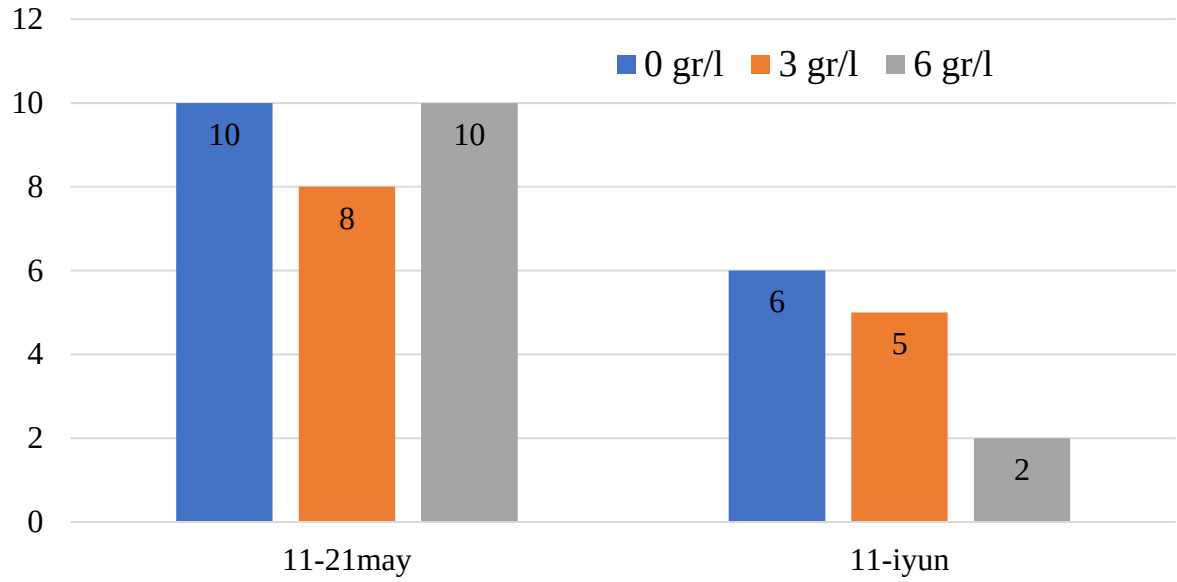


Rasm 2. **Har bir konteynerdagi chavoqlarning umumiy vazni, gr**



Rasm 3. **Chavoqlarni o'sish ko'rsatkichi o'rtacha % xisobida**



Rasm 4. **Tajriba davomida nobud bo'lgan chavoqlar soni**

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