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BLOOD ANALYSIS OF DIFFERENT BREEDS OF CARPSIAN FISH

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Abstract
During the experiment, it was found that the morphological, physiological and hematological parameters of the blood of fish kept in bioecological conditions differ depending on the morphophysiological characteristics of the fish organism in the conditions of storage and the hydrochemistry of the water.

Keywords. Erythrocyte, 1012/l, Hemocrit, Hemoglobin content in erythrocytes, pg, Average erythrocyte size, μm, Leukocyte x1012/l, Extensive technology, Intensive technology, Artificial pond, Hemoglobin in pond conditions, Limited water body

Introduction

Relevance of the topic. Along with other branches of animal husbandry, fisheries are being further developed and our people's demand for fish and fish products is increasing. This, in turn, is leading to the rapid development of fisheries based on new innovative technologies and the widespread implementation of innovative methods of fish farming based on intensive technologies in the industry. As an example, a number of resolutions and orders of our Honorable President are being put into practice. In particular, in accordance with the Resolution of the President of the Republic of Uzbekistan No. PQ-4816 dated August 29, 2020 “On measures

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to support the fisheries sector and increase its efficiency", in order to support the fisheries sector in the Republic, increase the efficiency of fisheries and fishing farms, ensure the rational and efficient use of land and water resources in this area, and ensure the widespread introduction of intensive technologies: In 2021-2022, in conditions of water shortage, a process of gradual introduction of new resource-saving intensive technologies and widespread use of secondary water sources was introduced in artificial reservoirs by fisheries that draw water from rivers and canals.

The level of knowledge of the problem. The fish should be taken out of the water and wrapped in gauze. Only the base of the tail should remain outside. The puncture site is cleaned of body fluid with a cotton swab with a 70% alcohol solution. A sterilized needle and syringe are used to draw blood. Instruments are treated with sodium citrate and heparin solutions. A forceful puncture is made along the spine at a 450 angle above the anal opening. The blood sampling site cannot be squeezed. This is to prevent the released fluid from entering. It is not recommended to draw blood again from the blood sampling site.

Results and their analysis. In the table above, when we analyzed the morphological indicators of blood, it was found that the average hemoglobin content in healthy fish was 91 g/l, up to 103 g/l, and down to 85 g/l. When examining the morphological indicators of blood in karr fish affected by water-affected factors, the average hemoglobin content of fish kept in water with disturbed bioecology (turbidity of water, low oxygen, high organic compounds) was 62 g/l, maximum 63 g/l, and minimum 56 g/l. When storage conditions were disturbed (concrete basins using artisanal water), the hemoglobin content was 46.3; 54.1; 44.2 g/%, respectively, and when hydrochemistry was disturbed, the hemoglobin content was 39.2; 41.3; 33.8 g/l. A decrease in hemoglobin content was observed during the experiments in karr fish under hydrochemical disturbances of storage conditions (-table).

Similarly, when the number of erythrocytes (x 10 /l) was examined, the number of erythrocytes was on average 1.75, maximum 2.28 and minimum 1.43.

When morphological blood parameters were examined in karr fish affected by water factors affecting fish of this age, the erythrocyte content of fish kept in water

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with disturbed bioecology (turbidity of water, low oxygen, high organic compounds) was on average 1.17%, maximum 1.27% and minimum 0.93%. When storage conditions were disturbed (concrete basins using artisanal water), the average, maximum and minimum hemoglobin content was 0.76, respectively; 0.86;0.51%, when the hydrochemistry was disturbed, the hemoglobin content was 0.51; 0.89; 0.33%, respectively. An increase in the hemoglobin content was observed during the experiments in karr fish with hydrochemical disturbances of storage conditions. When examining the number of leukocytes (x109/l), in healthy fish, the average was 23.7, maximum 31.9, minimum 18.4, in fish kept in water with disturbed bioecology (turbidity of water, low oxygen, high organic compounds) the average was 43.1, maximum 56.9 and minimum 32.6. When the storage conditions (concrete basins with artisanal water) were disturbed, the average was 57.1, maximum 75.1 and minimum 45.3. When the hydrochemistry was disturbed, the average was 98.2; 175.3; 63.3. During the experiments, it was observed that the number of leukocytes increased along with the increase in storage conditions in the karr fish.

During the experiment, the morphophysiological properties of the fish organism were studied in accordance with the conditions of storage.

The morphophysiological indicators of the fish were examined using organoleptic and morphophysiological methods in the zhogara fish caught from the “Durmonsoy balyklari” fish farm. In our studies, when fish with normal and disturbed water environments were comparatively studied, a sharp difference in their morphophysiological and hematological indicators was observed.

According to the table, when we analyzed the morphological indicators of the blood, it was determined during the experiments that the hemoglobin content in healthy fish was on average 91.8±5.58 grams/liter, above 99.7±4.1 grams/liter, and below 83.3±3.41 grams/liter. When examining the morphological parameters of blood in karr fish affected by water factors, the hemoglobin content of fish kept in water with disturbed bioecology (turbidity of water, low oxygen, high organic compounds) was on average 74.8±2.83 grams/liter, maximum 80.1±4.85 grams/liter and minimum 59.3±3.6 grams/liter. When storage conditions were disturbed (concrete basins using artisanal water), the hemoglobin content was 63.8±3.13; 72.1±2.42; 48.6±2.13 grams/liter, respectively, and when hydrochemistry was disturbed, the hemoglobin content was 41.2±1.69; 56.7±2.86;

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37.9±2.31 grams/liter, respectively. A decrease in hemoglobin content was observed during the experiments in karr fish under hydrochemical disturbances of storage conditions (-table).

Similarly, when the number of erythrocytes (x 10 / l) was examined, the number of erythrocytes was on average 1.73±1.21, maximum 2.22±1.61 and minimum 1.56±1.32.

When morphological blood parameters were examined in karr fish of this age, which were affected by a factor affecting water, the erythrocyte content of fish kept in water with disturbed bioecology (turbidity of water, low oxygen, high organic compounds) was on average 1.48±0.14%, maximum 2.5±0.18% and minimum 1.41±0.12%. When storage conditions were disturbed (concrete basins using artisanal water), the average, maximum and minimum hemoglobin content was 1.35±0.13; 1.85±0.12; 1.21±0.12%, respectively, and when hydrochemistry was disturbed, the hemoglobin content was 1.22±0.14; 1.69±0.16; 1.73±0.19%, respectively. An increase in hemoglobin content was observed during the experiments in karr fish under hydrochemical disturbances of storage conditions.

When examining the number of leukocytes (x109/l), the average in healthy fish was 24.6±2.11, maximum 32.3±2.42, minimum 14.8±1.09, while in fish kept in water with disturbed bioecology (turbidity of water, low oxygen, high organic compounds) it was 43.3±2.41, maximum 52.2±3.31 and minimum 28.3±1.18. When the storage conditions (concrete basins using artisanal water) were disturbed, the average was 54.1±2.22, maximum 72.1±4.31 and minimum 38.3±1.78. When the hydrochemistry was disturbed, it was 90.3±9.51; 96.3±7.1; 63.9±4.1, respectively. During the experiments, an increase in the number of leukocytes was observed in the karr fish, along with an increase in storage conditions (Figure 1).

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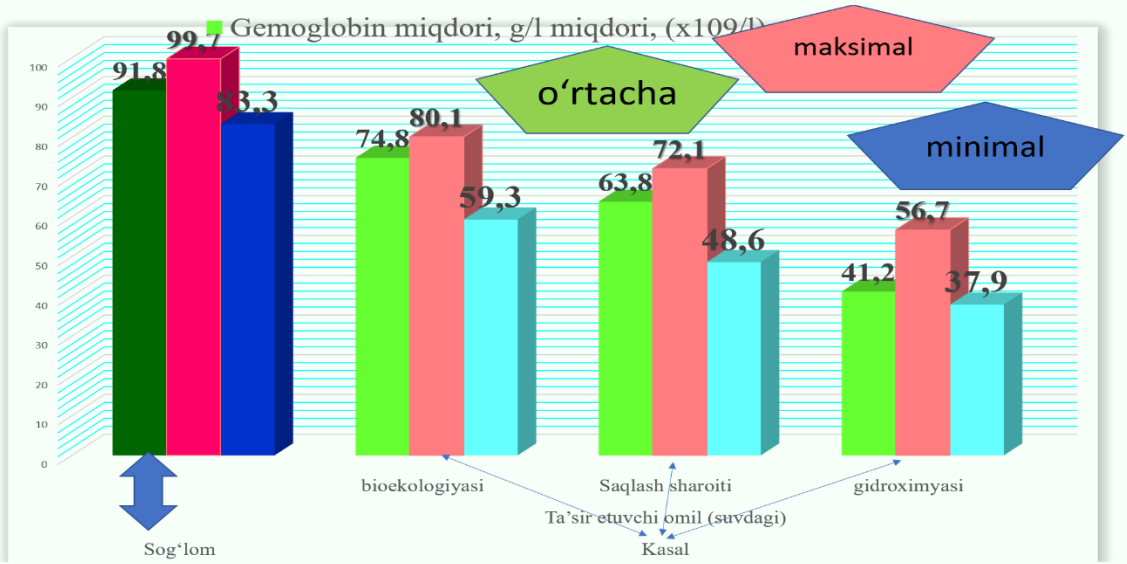

Figure. *Comparative blood parameters of one-year-old carp fish raised in healthy and hydrochemically disturbed environments*

Conclusions

During the experiment, it was observed that the morphophysiological characteristics of the fish organism, the morphological, physiological and hematological indicators of the blood of fish kept in accordance with the conditions of their keeping, and the hydrochemistry of the water and bioecological conditions differed from each other.

References

1. Haqberdiyev, P. S., Qurbonov, F. I., & Qarshiyeva, B. (2018). Baliq va asalari kasalliklari. O 'quv uslubiy qo 'llanma. Samarqand, 4, 101-105.
2. Kurbanov, F. E. (2022). Baliqlar Saprolegniozining Epizootologiyasi Va Qarshi Kurash Chora-Tadbirlari. Educational Research in Universal Sciences, 1(7), 152-158.
3. Yunusov, K., Kurbanov, F., Yuldashev, X., Asomiddinov, U., & Xolova, U. (2024). Diagnosis of saproligniosis and protozoa of fish and veterinary and sanitary assessment of their meat (Uzbekistan). In BIO Web of Conferences (Vol. 95, p. 01024). EDP Sciences.
4. Сатторов, Д., Курбонов, Ф., & Салимов, И. (2022). Грибные заболевания рыб. Сапролегниоз. Перспективы развития ветеринарной науки и её роль в обеспечении пищевой безопасности, 1(2), 137-141.

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ISSN (E): 3061-6972

5. Sattorov, J. M., & Sh, A. A. (2022). Baliqchilik Xo ‘Jaliklarida Saprolegnioz Kasalligining Tarqalish Yo ‘Llari Va Profilaktikasi. Agrobiotexnologiya Va Veterinariya Tibbiyoti Ilmiy Jurnali, 377-381.
6. Курбанов, Ф. И., Саттаров, Д. М., & Хушназарова, М. И. (2023). Меры лечения Сапролегниозам и Триходинозом. AGROBIOTEXNOLOGIYA VA VETERINARIYA TIBBIYOTI ILMIY JURNALI, 2(4), 40-45.
7. Kurbanov F. et al. The number of pathological samples and results obtained by mycologically examined fish Saprolygniosis in Samarkand and Jizzak regions //BIO Web of Conferences. – EDP Sciences, 2025. – T. 160. – C. 02007.