



**ON THE BIOLOGY OF THE BLACK FISH
(*Schizothorax intermedius*.M).**

Son of Sindorov Abdumo'min Orolbek
Teacher at Jizzakh State Pedagogical University

Sindorova Charos Ikrom's daughter
Jizzakh State Pedagogical University, Student

Abstract

In this article, experiments on the cultivation of fish larvae, that is, preparation of the place for the process, fertilization, and the study of changes in fish larvae are partially covered. The results obtained in the experiment were critically analyzed using the existing literature.

Keywords: *Schizothorax intermedius*, gonads, Fulton's scale, howlers, McClelland, black fish

Common black fish (*Schizothorax intermedius* McClelland) is a typical representative of the mountain-Asian faunistic complex. Representatives of this complex are found in the ichthyofauna in the Tyan-Shan mountain and sub-mountain systems, including the tributaries of the Syrdarya and Kashkadarya rivers and springs in the headwaters of the rivers. We can see in Kashkadarya and Tashkent regions that there is always a need for black fish in the local market, and the price is slightly higher than the price of carp, which is a popular type of fish. Taking into account the traditions of world aquaculture (use of local ichthyofauna as an object of development of industrial fishing), it can be said that black fish can be a potential object of industrial fishing, but for this, a thorough study of the biological characteristics of this fish is required. Because of this, the purpose of this research work was to study the biology of black fish in Uzbekistan, including the Syrdarya storage basin.

Research work was carried out in 2021-2022 in the Syr Darya basins. We collected research resources in all seasons throughout the year. Samples were taken from all fish caught, without sorting. We determined the body sizes of the fish. In order to determine the age and growth rate of fish, 12-14 fish were taken from a fixed place, i.e. under the first fin of the shoulder fin and above the lateral line, according to the methods of conducting fisheries research. We determined the stages of sexual maturation of fish reproductive products (gonads) and recorded them in 4% formalin solution. By processing the mentioned gonads in laboratory conditions, we





determined their absolute and relative fertility. During the research, we used generally accepted methods of ichthyological research to determine other biological indicators [2].

Currently, black fish can be found in the mountain and sub-mountain zone of the Syrdarya basin, as well as in some places of the plain. Charvoq, Ohangaron, Tuyabuguz, Tokhtagul, Andijan reservoirs and mountain lakes form the basis of ichthyofauna.

In the Chirchik river basin, black fish can be found in the upper reaches of the river, from the Ugom, Pskom, Chotkal, Aksokota rivers to the lower reaches of the river (Cotton station), Bozsuv, Kara Suv, Karakamish canals [3].

In the Ohangaron river basin, it lives from the upper reaches of the river to the middle reaches of the river (to Tuyabuguz settlement), from the upper reaches of the Keles river to the Abay settlement, and very few mines live in the lower reaches of the river. It is found in all parts of the Norin and Kara rivers, in the upper reaches of the Syrdarya, up to the place where the Kara and Norin rivers join it.

L.S.Berg distinguished three forms (morphs) of black fish in the Syrdarya basin, among which the most common (80%) is black fish with a wide mouth and a horn-shaped shell on the lower lip. Thick-lipped and typical-mouthed forms are also found everywhere, but they are very rare. It is not possible to monitor the status of black fish species in the water basin.

In the research samples, the black fish population consisted of fish of 17 age groups, their length was 7.0-51.5 cm, and their body weight was 7.0-2885 g. It should be noted that among them, 7- There are many fish of the age group, the saturation coefficient is $\sim 1.49-2.25$ according to Fulton's scale, and $\sim 1.6-1.56$ according to Clark's scale.

In the Ohangaron river, the average body length of blackfish at 2 years old is 16.5 cm and weight is 89.4 g, at 3 years old it is 18.1 cm and 120.2 g, at 4 years old it is 21.7 cm and 169.4 g, at 5 years old and it was 24.1 cm and 209.9 g. The coefficient of obesity was found to be from 1.55 to 2.39 according to Fulton, and from 1.24 to 1.93 according to Clark [1].

In the Ohangaron river, blackfish become sexually mature at the age of 2 years, and most of the fish become sexually mature at the age of 3 years. 3-4-year-old individuals of the fish prevail in the flying flocks. Spawning of crucian carp is partial, spawning occurs in the beginning of April - May, when the water temperature is 8-9°C. Casting takes place mainly in the sandy and rocky bottom of the river in the upper parts of the river. The diameter of the uvula is 0.7-1.7 mm. The degree of maturation of carp sexual products before spawning is 9.0-15.3 percent. The individual absolute fecundity of the fish varies from 924 to 6390 eggs when the body of the female is 16.5-25.0 cm [1].





In the reservoirs of the Syrdarya basin, black fish males reach sexual maturity in 2-3 years of life, when their body length is 12-15 cm, and females in 3-4 years of life, when their body length is 12-15 cm.

The breeding season is very long and takes place from April to August. Such an extension of the period of reproduction of black fish is a lack of natural food base for the nutrition of fry, because of this, the period of reproduction (spawning) is prolonged for the effective use of scarce food organisms, which is also considered one of the main ecological characteristics of this type of fish.

We observed the reproduction of black fish in the Charvok reservoir in the Navalisoi region, they came to the breeding place in a small group (40-50 pieces), the body length of the main part of the fish that went to reproduction was 23, 0-38.0 cm, and a small number of large ones - 40.0-50.0 cm. Blackfish spawn in the morning, and they spawn in the 1.0-1.5 meter deep gravel section of the water body. it penetrates between and under the stones and develops there. The toxicity of blackfish roe is also a unique ecological adaptation aimed at protecting the roe from being eaten by other species. It should be noted that in some places, especially in Nurota springs, local people who do not know about the toxicity of black cod roe have been poisoned when they eat this fish meat before breeding, so this fish can be eaten as a "saint fish". Heresies that say no have also appeared. However, this fish meat is very tasty.

The absolute fertility indicator of black fish, when the body length is 30.-51.5 cm, is 6.6-74.0 thousand pieces, and the coefficient of sexualization is in the range of 5.43-17.5% .

In conclusion, it can be said that the individual absolute fertility increases with the age, body length and mass of the fish. There is no increase in relative humidity. While the fastest growth of blackfish occurs in the first year of life, growth slows down significantly from the second year of life, which appears to be related to habitat conditions and food availability. .

References

1. Atamuratova M.Sh. Growth and reproduction characteristics of blackfish (*Schizothorax curvifrons*) in the Okhangaron River. Khorezm Mamun Academy newsletter, 2019-5/1, 7-10 p.
2. Pravdin I.F. Rukovodstvo po izucheniyu ryb (preimushchestvenno metabolomodnyx). 4-e izd. - M.: Pishchevaya promyshlennost, 1966. - 376 p.
3. Ergasheva M.T. Morfoekologicheskie osobennosti Amudarinskoy trout and common marinki pool river Surkhandari to Uzbekistan: Autoref. dis. ... candy. biol. science - T.: Institut zoologii AN RUz, 1997. - 21 p.m.

