

INFECTION OF FISH WITH SAPROLEGNIOSIS IN RESERVOIRS SOUTH ARAL REGION

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Annotation *This report presents the data about the results of analysis conducted in 2024 in the small fish farm in Takhiatash in the Republic of Karakalpakstan, where a large number of fungal infected juvenile fish is indicated: grass carp and silver carp.*

In Uzbekistan, much attention is paid to the development of pond fish farming, for which climatic conditions are very favorable, but invasive and infectious diseases cause great damage to the growth rate and development of fish. To do this, it is necessary to study parasites and the diseases they cause.

The first information about fish parasites in Uzbekistan refers to the Aral Sea. The first special work on the parasitic fauna of Aral fish was the work of T.A. Krepkogorskaya, dedicated to the fauna of nematodes of the Aral Sea. It is appropriate to mention the first expedition of V.A. Dogel in the 1930s to the Aral Sea, where a general infestation of Aral fish with various helminths was noted.

Ichthyologists of Uzbekistan paid much attention to the study of the parasitic fauna of fish in the lower reaches of the Amu Darya; they described many fish diseases and measures to combat them.

Fish are the first aquatic animals. The importance of fish is important for the biotic cycle of substances and energy; they are one of the links in food chains in nature. People have been using commercial fish and various products made from them as food for a long time. Many aquarium fish have aesthetic value. Their adaptability to various living conditions is amazing; they managed to populate seas, oceans, rivers, lakes, ponds, streams and even underground waters. Water is a living environment for them, which has a number of characteristics and creates unique conditions for their existence. Fish, like many animals, are susceptible to parasitic diseases. Parasitism is a universal natural phenomenon and, as an ecological phenomenon, it arose in different ways.

A wide variety of organisms can lead a parasitic lifestyle. This phenomenon occurs in representatives of the fish class, where parasites stick to their skin and penetrate into the internal organs. Helminths infect not only the internal organs of fish, but also pond farms and natural reservoirs. In rivers, lakes, and reservoirs there are fish infected with various pathogenic fungi. They are the causative agents of mycosis. Among freshwater fish, saprolegniosis is the most common mycoses. Their causative agents are mold fungi that are part of the Saprolegnia species, which is widespread in nature.

Apparently, the development of saprolegniosis occurs due to a decrease in water levels, the composition of salts, gas, lack of nutrients and various other injuries. All reservoirs in which fish live are considered a very convenient environment for saprolegniosis fungi.

Material and methodology. In this message, we would like to present data from the results of an analysis carried out in 2024 in a small fish farm in the city of Takhiatash, Republic of Karakalpakstan, where a massive fungal infection of juvenile fish was determined: grass carp and silver carp. Fish parasites were studied using the parasitological dissection method developed by V.A. Dogel and his students (1952), as well as works G.V. Nikolsky (1963), S.O. Osmanova (1971).

Results and discussion. According to the results of the survey, it was noted that mass fungal infection of juvenile fish: grass carp and silver carp is associated with the temperature regime of the water, namely in April or May during the breeding season of fish.

Apparently, this disease arose due to the fact that in these reservoirs there were pathogenic strains of saprolegniosis fungi and weakened fish cannot fight this infection, moreover, this disease is widespread in warm and stagnant waters. It was noted that in fish infected with saprolegniosis, a film appears on the skin, fins, gills, eyes and nasal openings, similar to white foam, with a yellowish-ashy tint, which consisted of threads of fungal hyphae. It seems that during the process of parasitism, biochemical changes occur in the body of the fish, leading to the death of tissues, and ultimately the death of the fish itself. At the same time, weakened fish are not able to respond to external pathogens. Fish exposed to the disease saprolegniosis come to the surface of the water and become easy prey for predators.



Fig. 1. Saprolegniosis disease

Fungi create white mesh spots on the surface of the body of dead fish and penetrate the skin, subcutaneous tissue and internal organs. Saprolegniosis mainly affects weakened, inactive and damaged fish, disables the respiratory organs, sucks oxygen from them for its development, then feeds on dead fish tissues. Fungi surround small fish with their hyphae, then move into the organs of juvenile fish. They can also live in the bodies of dead fish, frogs, shellfish and insects.

Conclusion. Thus, in the fight against invasive fish diseases in commercial reservoirs and farm ponds, knowledge of the biology and ecology of the parasite and its host is necessary.

Among the preventive measures in the fight against fish diseases in ponds and natural reservoirs, a good result is considered to be growing fish in a good environment, maintaining the cleanliness of reservoirs and the entire environment, creating a food supply, removing dead eggs, and carrying out constant monitoring will serve to prevent parasitic diseases.

The fight against enemies and diseases of fish is a sure guarantee of protecting fish resources, and in the fight for the restoration of fish stocks, in saving juvenile fish, it is

necessary; employees of reserves, nature reserves, and students of biological faculties took an active part in this matter, where by joint efforts positive results can be achieved.

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