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Methods of Preventing Lerneosis of Fish

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Abstract: *The article describes the analysis of scientific sources about the clinical signs observed in the diagnosis of lerneosis in artificial ponds and methods of prevention.*

Keywords: *Fish, water, pond, salt, chlorophos, crab, Lerneosis, Lernaea elegans, Lernaea cyprinacea, carp, fattolob.*

Relevance of the topic. Today, due to the increasing demand of our people for fish and fish products, great attention is being paid to the development of fisheries in our republic, which allows to provide the population with valuable proteins as fish meat.

In order to further develop the fishing industry, increase the types of fish products, increase the export potential, effectively use the opportunities of the existing basins, increase the volume of fish production based on intensive technologies, and strengthen the feed base of fisheries: Decree of the President of the Republic of Uzbekistan dated 13, 2022 in January Decision No. PQ-83 "On additional measures for further development of the fishing network" was adopted. Currently, rapid development of fishing, application of innovative technologies in the network is one of the urgent problems of today. In the effective performance of these urgent tasks, lerneosis of fish causes great economic damage.

Infestation of fish with crabs is very high, with tens of them per fish body. Lerneas pierce the skin of the fish and penetrate deep into the muscle tissue, and at the same time settle on the entire surface of the body. Inflammatory process takes place in the tissues where Lerneas are located, swellings become hyperemic and white narrow narrow ulcers are formed. Pathogenic bacteria and fungi develop in damaged tissues. The pathogenic effect of the parasite on the fish body is characterized by tissue dysfunction, inflammatory processes in the muscles, internal organs, especially the liver. Parasitism of 2 or 3 lerneas in the body of young fish leads to their death. This, in turn, limits the economic potential of fisheries. Taking into account the climate and local conditions of our republic, the ecological situation in the regions, it is urgent to carry out a general inspection of the reservoirs where fish are kept and the fish kept in them, to study the cause of the disease, to develop and implement measures for the treatment and prevention of fish lerneosis. shows that it is one of the tasks.

Level of study of the problem: Fish infected with lerneosis are disease spreaders in the next year, and the larval stage of lerneas is the source of the disease. As a result of the investigation of various reservoirs by researchers, crustaceans (lerneosis and arguliosis) were found in the body of adult and young fish (Fig. 1, 2).

In 2007-2011, when monitoring was carried out in 11 fishing farms of Zhetomir, Kiev, Cherkas districts, during the experiment, parasitological examinations of carp fish at different ages were carried out, based on generally accepted methods, and the intensity and extent of crustacean infestation were studied. In all of the 11 fisheries mentioned above, up to 100% damage was observed in carp. In particular, lerneas in the copepodite stage accounted for 66.7%. In addition, crustaceans were detected in about 20 fish farms in the southern regions of the Russian Federation, Stavropol, Rostov, and Krasnodar regions, with an average infestation extent (IE) of 10-15% at the end of June. Invasion intensity (II) was 1-10 copies, and as a result of repeated experiments in August, invasion intensity (IE) was 45-70%, and invasion intensity (II) was 14-52 copies. In the conditions of Uzbekistan, lerneas, ectoparasites of fish, are found mainly in the spring-summer season in Tashkent, Kashkadarya, Andijan, Fergana, Samarkand, regions.

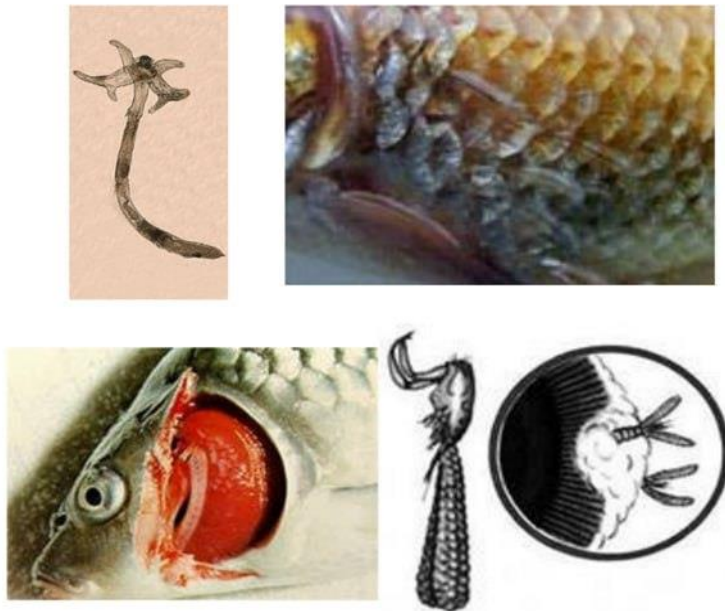


Figure 1. Appearance of Lerneas in the fish body

of slaked lime and chlorinated lime per hectare, 5 to 10 tons of manure are poured per hectare, and the soil of the basin is cultivated with the help of machinery, and it is chiseled and plowed (basin parasites on the bottom are cleaned from their spores and cysts, and the types of living food creatures on the bottom of the water are well developed - benthos), and from March, the shandars entering the basin (from the inside of the basin to the mouth of the pipe) 23it is very important to install filters (stop the water every week and clean it in a sieve filter) and fill the basin with clean water. [1.5]

The purpose of the study. Development of methods of spreading, early detection, prevention and treatment of fish lerneosis in fishing basins of Samarkand region.

Lerneosis is an invasive disease of freshwater fish, *Lernaea elegans*, *Lernaea cyprinacea* belonging to the Lernaeidae family, paddle-footed shrimps, carp, their fry, and many wild fish found in our rivers and lakes, including (carp, pike, carrion) is caused by parasitism in the body. As a result of absorption of bloody exudate in the tissues, the bumps on the skin are slightly raised, deformed and dry. Sick fish do not take food, move slowly, lag behind in development and accumulate on the water surface [3,4].

In healthy fisheries, the following measures are taken to prevent the disease: drain the pond until February and prevent fish from ectoparasites in order to obtain 200-500 kg



Figure 2. Appearance of lerneas on the outside and on the body of a fish.

It is advisable to clear the area around the basin from trees, bushes, and reeds, because such measures should be carried out in order to keep the main hosts of many parasitic diseases (molluscs, birds) away from the area around the basin. In addition, for the purpose of filtering water for receiving water in the basin, "ostoynik" basins, that is, a basin that stops and cleans the stagnant water. These ponds serve to clean up to 70%

of sediments from water sources. Its depth does not exceed 1-1.5 m [5,7]. In the spring, the fish brought to the fish pond are first of all inspected and kept in a 5% solution of

table salt for 2-3 minutes, and then released into the pond. In addition, keep young and old fish in separate tanks. A 400 kg bag of salt is left next to the "Khorak" where food is placed for fish [6,7].

Summary. Fish lerneosis is a parasitic disease that causes great economic damage to fisheries, and in the wounds caused by crabs in fish, hemorrhages and shedding of scales are observed, which primarily lead to the loss of marketability, decreased immunity in fish, makes it susceptible to various infectious diseases.

In order to prevent lerneosis in fish, it is necessary to properly organize fishing ponds, carry out disinfecting works by completely defishing and drying the pond in the winter season, in the spring and summer seasons, fish ponds per hectare 400 kg salting measures have been found to be highly effective in disease prevention.

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