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Investigation Of Fish Infestation By Parasites In Pond Farms Of The Krasnodar Territory.

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ABSTRACT

This article presents the results of parasitological monitoring of pond farms in the Krasnodar Territory. It has been established that 25 species of parasites are invaded in fish pond farms of different forms of ownership of fish and the fauna of parasites is determined. The obtained results are the basis for the analysis of the system of treatment and prophylactic measures and actualize the development of new means and methods of treatment and prevention of diseases.

Keywords: parasitic diseases of fish, fauna of parasites, aquaculture.

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INTRODUCTION

Today, modern world aquaculture is an actively developing sector of food production, which is becoming an important industry that contributes to food security for the population with high-quality and safe products. Aquaculture is rapidly expanding its geographical boundaries, its products not only conquer markets, but also increase the share in the world fish market. Thus, with a total catch of 90 million tonnes of fish per year, aquaculture accounts for 68 million tonnes. Unfortunately, in Russia the situation is different. Obtaining 4.3 million tons of fish in aquaculture, the country produces only 153 thousand tons. If Russia is one of the ten leading countries in terms of commercial fishing, Russia is on the 78th place in the production of aquaculture products. At the same time, natural and climatic conditions allow us to develop various areas of aquaculture: warm-water, cold-water, freshwater and marine [1, 3].

The diversity of water bodies in the Russian Federation, regional features determine the specifics of the development of domestic aquaculture in the areas and objects of cultivation. The main goal of the development of the Krasnodar Territory's fisheries is to achieve the sustainable functioning of the fisheries sector based on the conservation, reproduction and rational use of aquatic biological resources, the development of aqua and mariculture ensuring the satisfaction of domestic demand for fish products, and the social and economic development of municipalities. At the same time, conditions should be created for increasing the efficiency of using the resource potential of the Krasnodar Territory and developing competitive fish processing industries.

Analysis of the current state of fisheries in the Krasnodar Territory makes it possible to determine that one of the main problems hampering its effective development is the intensifying anthropogenic impact on all water bodies, and as a result - on the habitat and condition of aquatic biological resources and aquaculture objects that grows, which contributes to the development of infectious and invasive diseases of pond fish.

Many researchers believe that in many countries, including Russia, there is a deterioration in the situation of water-related invasions, when parasites are one of the most serious factors limiting aquaculture [2, 3, 4, 7, 11, 12].

A large number of parasites infect fish, but only some of them cause illness in humans. Due to their high incidence, the following helminth families deserve special attention: *Opisthorchiidae* and *Heterophyidae* (class *Trematoda*, subclass *Digenea*), *Anisakidae* and *Gnathostomidae* (*Phylum Nematoda*) and *Diphyllbothridae* (class *Cestoda*) [8, 9, 10].

Therefore, parasitological monitoring of aquatic biological resources is the basis for the development of programs for the prevention of diseases in aquaculture facilities, harmonized with the documents of the International Organization for Animal Health (OIE), the Code of Aquatic Animal Health and the Guideline for the Diagnosis of Aquatic Animal Diseases.

MATERIALS AND METHODS

Studies were performed on the basis of the Department of Parasitology, Veterinary Expertise and Zoohygiene FSBEI HE Kuban SAU and in FSBI «Krasnodar Interregional Veterinary Laboratory».

The main object of research was pond fish of fish farms of the Krasnodar Territory of 6 species (carpiness variegated, silver carp white, carp, carp, white carp, carp). The fish were opened by the method of complete parasitological dissection [6]. Collection and treatment of parasites were carried out according to generally accepted methods. Species composition of parasites was determined to the species with the help of the "Parasite determinant of freshwater fish parasites" edited by Bauer (1987) at the KubSAU parasitology department.

RESULTS AND DISCUSSION

Systematic studies of 6 species of pond fish conducted in the Krasnodar Territory showed that in fish pond farms of different forms of ownership they are invaded by 25 species of parasites: *silver carp* - 11 species: *Myxoboluspavlovskii*, Achmerov, 1954; *M. dijagini*, Achmerov, 1954; *M. haemophilus*, Garcawi,

Zverzhanowskyi, Lysenko 1989; *Ichthyophthirius multifiliis*, Fouguet, 1876; *Trichodina acuta*, Lorn, 1966; *T. Nigra*, Lorn, 1960; *Diplostomum spataceum*, Rudolphi, 1819; *Sinergasilus lienii*, Yin, 1949; *Lemaeelegans morphactenopharingodontis*, Yin, 1960; *Ligula intestinalis*, Linnaeus, 1758; *Poslho cliplostomum cuticola*, Xorilman, 1832; **bighead carp** - 12 species: *M. pavlowskii*, Achmerov, 1954; *M. drjagini*, Achmerov, 1954; *M. Haemophilus*, Garcawi, Zveryanowskii, Lysenko 1989; *M. multifiliis*, Fouguet, 1876; *T. acuta*, Lorn, 1966; *T. nigra*, Lom, 1960; *Dactylogyus vastator*, Nybelin, 1924; *Dac. nobilis*, Longet Yu, 1958; *D. spataceum*, Rudolphi, 1819; *Poslho cliplostomum cuticola*, Xorilman, 1832, *Ligula intestinalis*, Linnaeus, 1758, *Sinergasilus lienii*, Yin, 1949; *L. elegans morphactenopharingodontis*, Yin, 1960; **crucian** - 7 species: *I. multifiliis*, Fouguet, 1876; *L. cypinacea*, Linnaeus, 1758; *Argulus foliaceus*, Linnaeus, 1758; *S. lienii*, Yin, 1949; *D. spataceum*, Rudolphi, 1819; *D. Spataceum*, Rudolphi, 1819, *Ph. sanguinea*, Rudolphi, 1819; **sazan** - 5 species: *Dac. extensus*, Muelleret Van Cleave, 1932; *A. foliaceus*, Linnaeus, 1758; *D. spataceum* Rudolphi, 1819; *Khawiasinensis*, Hsu, 1935, *Poslho cliplostomum cuticola*, Xorilman, 1832, **white amur** - 7 species: *Dac. Ctenopharingodonis* Achmerov, 1952; *Kh. Sinensis*, Hsu, 1935; *Bothriocephalus opsariichthydis*, Yamaguti, 1934; *D. Spataceum*, Rudolphi, 1819; *L. elegans morphactenopharingodontis*, Yin, 1960; *A. foliaceus*, Linnaeus, 1758; *S. major*, Marckewitsch, 1940, **carp** - 14 species: *Dac. vastator*, Nybelin, 1924; *Dac. extensus*, Muelleret Van Cleave, 1932; *Kh. Sinensis*, Hsu, 1935; *D. spataceum*, Poidolphi, 1819; *Poslho cliplostomum cuticola*, Xorilman, 1832, *L. elegans morphactenopharingodontis*, Yin, 1960; *A. foliaceus*, Linnaeus, 1758; *M. dogieli*, J. et B. Bychowski, 1940; *I. multifiliis*, Fouguet, 1876; *T. nigra*, Lom, 1960; *T. acuta*, Lom, 1966; *Ergasilus sieboldii*, Nordmann, 1832; *Bothriocephalus opsariichthydis*, Yamaguti, 1934; *Philometroides lusiana*, Vismanis, 1966.

Extensiveness of fish invasion during myxobiosis ranged from 2.62 to 6.28% in carp, carp whiteness and variegated; ichthyophthiriose - 7.82-16.54% in silver carp, crucian, white carp and carp; trichodinose - 3.92-21.42% in carp and silver carp; dactylgyrosis - 5.25-18.6% for silver carp, sazan, white carp and carp; Caviosis - 3,15-24,6 for white carp, carp and sazan; Botryotsefaleze - 1.52-2.68% in silver carp and white amur; dysthistomosis 11.14-5.67.22% in all species of fish studied; post-diplostomosis - 8,9-12,3% in carp whiteness and variegated; argyle - 3,25-12,4% in crucian, sazan, white amur and carp; Lerneose 1.25-8.46% in silver carp, crucian, white amur and carp; ligulose 2,3-3,7% in carp whiteness and variegated; sinergazillez - 3.25-18.7% in silver carp, crucian, white amur and carp; phyllmetroidosis - 7.25-46.72% in crucian and carp; ergazile - 6,5-8,6% in silver carp and carp.

CONCLUSION

The results of parasitological monitoring of pond farms in the Krasnodar Territory are consistent with the results of parasitological studies of other authors and supplement them with respect to the fauna of parasites of individual fish species and the extent of invasion [2, 3].

Thus, as a result of the conducted studies, the fauna of parasites and the extensiveness of six fish species in pond farms of the Kuban have been revealed, which is the basis for analyzing the system of therapeutic and prophylactic measures, developing new means and methods of treating and preventing diseases.

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