



International Journal for Innovative Engineering and Management Research

A Peer Reviewed Open Access International Journal

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IJIEMR Transactions, online available on 9th April 2021.

Link: <https://ijiemr.org/downloads/Volume-10/Issue-4>

DOI: 10.48047/IJIEMR/V10/I04/26

Title: **EFFECTIVENESS OF ANTHELMINTIC DRUGS USED AGAINST FISH HELMINTOSIS**

Volume 10, Issue 04, Pages: 101-105.

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EFFECTIVENESS OF ANTHELMINTIC DRUGS USED AGAINST FISH HELMINTOSIS

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Abstract: In this article studied the dynamics of the extensiveness and intensity of invasive sestodosis family of carp fish, Intensively keeper in artisanal reservoirs Samarkand region. A similar study of the Effectiveness of anthelmintic drugs for treatment and prophylaxis.

Keywords: parasites, helminthiasis, cestodes, cestodes, anthelmintics, zooparasitology, chemotherapy, albendazole, panofenb, metsalbine, monezol, praziquantil.

Introduction

After the independence of our country, large-scale reforms are being carried out in all spheres of agriculture, especially in the field of fisheries.

The President and the government pay great attention to the development of the industry, increasing fish farming in artificial reservoirs. Hundreds of fish farms have been established (currently the number of fish farms in the country has exceeded 4,000, but the main problem is the low yield of fish per hectare of water body), based on scientific experiments in the field.

In recent years, the Republic has taken a number of program measures to ensure food security, including increasing the production of quality fish products.

The country has adopted a number of laws to accelerate the development of the fishing industry, increase the volume with the introduction of modern and innovative methods of fish production, regulate the industry, and take measures to ensure their quality and thorough implementation.

Today, along with the rapid development of the industry, the implementation of research work on the fight against, prevention and diagnosis of fish diseases is of great theoretical and practical importance.

The degree to which the problem has been studied. Deaths due to parasitism of tapeworms (cestodes) in fish are relatively rare, but a sharp decline in the growth and

development of infected fish, reduced efficiency of food consumption and deterioration of breeding characteristics can cause serious economic damage to fisheries [3].

Among the parasitic diseases of fish, cestodes are one of the most common helminthiasis. So far, chemotherapy has played a key role in the treatment and prevention of parasitic diseases of fish [4].

Drugs such as phenasal, benzamide, vermicide, helminthiasis, devirmin, yomezan, dichlosal, trichlosal, phenoldone, cestocid, cyclosamide have been widely used in medical and veterinary practice in the treatment of intestinal cestodes [2].

In the analyzed literature sources, anthelmintic drugs used against intestinal cestodes were completely eliminated from monesias, avitellina and stylization when applied at a dose of 0,05-0,08 g/kg to sheep and lambs, and 0,045-0,159 g/kg to calves. Later, yomazen was used in many countries around the world and has always been very effective in practice. Subsequently, in 1963, the author [13] used an analogue of yomazen lintex at a dose of 0,05 g/kg against sheep monesias with an efficiency of 84,9-99,9%.

For the first time in CIS, the application of phenasal to lambs infected with spontaneous monesias [8] was found to be highly effective in young and adult forms of monesias. These data were later confirmed by researchers in repeated experiments [9].

Researchers who studied the mechanism of action of the drug yomazen [11]

found that this drug first destroys the cuticle layer of the cestode, then affects the scolexia, strobilus, and then under the influence of proteolysis enzymes cestodes disrupt the digestive system. According to scientists with many years of experience in the field of helminthology, the toxic effects of phenasal on humans and animals are minimal [9].

The authors [12] noted that no signs of poisoning were observed even when the drug phenasal was administered to lambs 5-10 times higher than the prescribed therapeutic dose (250-500 g/kg).

Phenasal disrupts the process of glucose uptake by parasites.

Phenasal is widely used in deworming against cestodes of large and small horned animals, poultry, fish and humans. When the therapeutic dose of this drug was increased by 10 times compared to the norm specified in the instructions, when given to large and small horned animals, protein was formed in their urine, and the general condition was found to be satisfactory [1].

In the 60s and 70s of the last century, a detailed study of the drug phenasal for use against intestinal cestodes began in the former Soviet Union. As a result, the production of granular compound feed containing phenasal, which is used in the treatment of carp, began to be produced. This drug is called cyprinocestin. As a result of feeding the fish once with this feed, the extensibility efficiency to botrioccephaliosis and caviar was 100%. No adverse effects of the drug on the body were observed [4; 5].

The therapeutic dose of albene in granular form when administered 0,20-0,25 g/kg twice at 24-hour intervals was 72,3%. [9] It was recommended that the lowest therapeutic dose of albene in granular form be 0,2 g / kg live weight twice per 1 kg of body weight at 24-hour intervals. Double administration of the drug to carp depends on the quantitative indicators of the active substance in the drug in the intestines of carp. [10]

The purpose of the study. Determination of the distribution of cestodes in fish belonging to the family Carpsimon in

artificial reservoirs of Samarkand region, testing of anthelmintic drugs.

Tasks of the research.

Determination of the species composition of cestodes distributed in artificial water bodies;

Identify the most effective side effects of drugs used for treatment and prevention.

Object and methods of research.

Experiments show that in 2018-2020, the family Cyprinidae was infected with cestodes of fish caught from "Jahongir crowfish", "Soxibjon crowfish", "Sutkhor" fish farms and Kattakurgan district reservoir of Samarkand region, Karadarya and Akdarya rivers and surrounding water basins. Conducted in 3 year old fish. Tests were performed by visual observation, path anatomical and laboratory methods. Clinical and path anatomical examination of infected fish was carried out by the method developed by V.A. Musselius. It first begins by observing the movement of the line of fish in a pool or river. In this case, depending on the manifestation of the disease in fish and its characteristics, whether fish swim on the surface or fall to the bottom, accumulate on the river or stand on the shore, changes in unnatural behavior of fish are important diagnostic signs for research [7].

These helminthiases are widespread due to the high level of damage on the farms under study, non-compliance of zoos with hygienic requirements, poor nutrition, the fact that the ponds are far from human control of fish ponds and the abundance of fish birds, and unplanned preventive measures against the disease.

Pathological examination of fish was carried out at the Department of Diseases of Poultry, Fish, Bees and Fur, in the interdepartmental laboratories OPTATECH and zoo parasitology laboratories in live and rapidly dying fish. Live fish were immobilized in several ways, depending on the size of the fish.

To diagnose intestinal cestodes, all internal organs were separated from the body of the fish, then the intestines were separated into Petri dishes, the intestines were cut lengthwise using special scissors, the intestinal mass of

food and the parasites were identified by binocular examination of the material. . Scraps from the intestinal mucosa were placed under a glass slide and examined under a microscope with a drop of water.

The results obtained and their analysis. Chemical treatment and prevention still play a key role in the fight against fish cestodes. In our experiments, we used 10 different anthelmintic drugs.

Preparation of therapeutic feed on the farm was carried out as follows: 1 kg of the drug was dissolved in 9-10 liters of water and mixed with 500 kg of concentrated feed. 10 kg of the prepared therapeutic granules were given to the fish in accordance with the instructions, calculated on the basis of 200 kg of fish body mass. It was recommended to add 2 kg of albene to 1 ton of feed.

The drugs were used as anthelmintics against *Ligula intestinalis*, *Digramma interruptum*, *Bothriocephalus acheilognathi* and caviar pathogens, and the active ingredient in the feed was administered in groups of 0.42 / kg body weight twice in 24 hours. The drug caused the neuropathy, metabolic, and microtubulatory disorders of the pathogens, leading to their death.

The studies were conducted on fish fed in artificial ponds. Each pool was numbered, and 100 fish were taken from each pool, making it a V.A. We determined the efficacy of the drug by analyzing the invasiveness of the invasion (IE) and the intensity of the invasion (II) before and after anesthesia. (Table 1)

Table 1

Drugs used against cestodes of intensively fed fish							
№	Used drugs	Number of inspected fish (pcs)	The results of the inspection method				Efficiency of drugs I.E. ratio (%)
			Before anesthesia		After 14 days anesthesia		
			I.E. (%)	I.E. (copy)	I.E. (%)	I.E. (copy)	
1	Albendazole suspension 10% 5 ml/kg	100	22	2	22	2	0
2	Albendazole suspension 10% 10 ml/kg	100	22	2	5	1	77,3
3	Panofenb 22% 0.2mg/kg	100	23	3	14	1	39.1
4	Panofenb 22% 0.4 mg/kg	100	23	3	0	0	100
5	Mettsalbin 10% 5 mg/kg	100	18	2	16	1	11.1
6	Mettsalbin 10% 10 mg/kg	100	18	2	4	1	77,8
7	Monezol suspension 5 ml / kg	100	24	3	18	1.5	25.0
8	Monezol suspension 10 ml/kg	100	24	3	0	0	100
9	Praziquantil 0.2 mg/kg	100	22	2	19	1	13.6
10	Praziquantil 0.4 mg/kg	100	22	2	0	0	100
	Control	100	21	2	22	3	-

In group I, invasive intensity (IE) was 22% and invasive intensity (II) was 2 copies. When helminthic suspension Albendazole suspension (10%) was used at 5 ml / kg, IE was 22%, II 2 copies, the effectiveness of the drug was 0%. In group II, IE was 22%, II 2 copies as above, IE was 5%, II 1 copy when re-examined after 14 days when albendazole suspension (10%) was used at a ratio of 10 ml / kg. The effectiveness of the drug was 77.3%.

In group III experiments, IE before anesthesia was 23%, II was 3 copies. When fish in this group were re-examined 14 days after anesthesia with Panofenb (22%) at a dose of 0.2 mg / kg, the IE was 14%, II 1 copy, and the efficacy of the drug was 39.1%. The same anthelmintic was given to group IV at a dose of 0.4 mg / kg, and when the result was re-

examined after 14 days, IE and II were zero, and the effectiveness of the drug was 100%.

In group V experiments, IE before anesthesia was 18%, II 2 copies, when this group was given Mettsalbin (10%) at a ratio of 5 mg / kg, IE was 16%, II 1 copy, and the effectiveness of the drug was 11.1% when re-examined 14 days after anesthesia. formed. In group VI fish, when re-tested for 14 days at a dose of 10 mg / kg of Metzalbine (10%), IE was 4%, II was 1 copy, and the efficacy of the drug was 77.8%.

Similarly, when group VII fish were examined, IE was 24%, II was 3 specimens. When Monezol suspension was applied to this group at a ratio of 5 ml / kg, IE was 18% and II was 1.5%. The effectiveness of the drug was 25%, IE in group VIII at a dose of 10 ml / kg was 0%, II 0 copies, the effectiveness of the drug was 100%.

When IX group fish were examined, IE was 22%, II was 2 specimens. When Praziquantil was administered to this group at a dose of 0.2 mg / kg, the IE was 19%, II 1%, and the efficacy of the drug was 13.6% when re-examined 14 days later. When we used this drug in group X at a dose of 0.4 mg / kg, IE was equal to 0, II 0, and the effectiveness of the drug was 100%.

In the control group, an increase in IE and II was observed, respectively.

Based on the results of our experiments, the following analyzes were made.

Conclusion

1. Cestodoses from fish helminthiasis are widespread in pond fisheries of Samarkand region.

2. Of the anthelmintic drugs used for the treatment and prevention of fish cestodes, Albendazole suspension 10% 5 ml / kg, Mettsalbin 10% 5 mg / kg, Praziquantil 0.2 mg / kg had a low efficacy of 0-13.6%.

3. Monezol suspension was administered at a dose of 5 ml / kg, Panofenb 22% 0.2 mg / kg, Albendazole suspension 10% at a dose of 10ml / kg, the average efficiency was 25.0-77.3%.

4. Panofenb 22% 0.4 mg / kg, Monezol suspension 10 ml / kg, Praziquantil 0.4 mg / kg, with high efficacy when administered at a dose of 100%.

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