

**TREATMENT OF DISORDERS OF PROTEIN METABOLISM IN  
FISH**

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***Annotation :*** *Intensive method being cultivated in fish proteins exchange of violations reasons water basins wrong Fertilization of fish of feeding not balanced is considered In carp fish proteins exchange violations prevention get and fish in his body proteins exchange again recovery in order to Innoprovect probiotics to feed mixed up without feeding the fish scientist indicators reduce and in fish growth and development , contagious to diseases durability provides .*

***Key words :*** *probiotic , innoprovect , carp , protein , hemoglobin , carbohydrate, vitamins , amino acids , substances exchange , anomaly , dystrophy , necrosis , prevention*

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Today, the demand of our people for fish and fish products is increasing. Therefore, great importance is attached to the development of fisheries in our Republic. The priority of fish farming in our country allows to provide the population with high-quality proteins contained in fish while strengthening food security.

According to the analysis, the minimum standard amount of fish consumption for Uzbekistan is 12 kilograms per person per year.

This figure is 16.6 kilograms for 1 person worldwide. From a medical point of view, fish products should be an average of 12-16 kg per year in the human diet ,

because fish products are extremely important in improving brain function and in the process of metabolism in the human body. Although fish meat contains proteins corresponding to those of farm animals such as cattle and pigs, the level of protein digestibility of freshly caught fish meat is high by the human body.

for the development of the fishing network have been defined

➤ determining the strategic directions of research and development in the fishing industry and promising research topics aimed at solving existing problems in the field;

➤ implementation of scientific research on the rapid development of the fishing industry on the basis of fundamental, practical and innovative projects within the framework of state scientific and technical programs;

➤ development of methodical and practical recommendations for selection and breeding work in the field, fish feeding, as well as prevention and treatment of fish diseases;

➤ large-scale implementation of innovative methods of fish farming based on intensive technologies, including cage devices, closed circulating water systems, running water pools, irrigation networks and river banks;

➤ participation in the training, retraining and upgrading of personnel for the fishing industry, conducting seminars and trainings related to the field;

➤ work on establishing international cooperation with the leading scientific and research institutions of foreign countries on the development and introduction of new innovative technologies is being implemented.

**The relevance of the topic:** Among the fish that are grown and bred intensively in the majority of fish farms in our republic, there are more disorders of metabolism, mainly protein metabolism, and in most cases, these diseases are not taken into account. This is a group of diseases, caused by a lack of protein substances that are harmful to the body, characterized by various physiological conditions and pathologoanatomical changes. It occurs due to the insufficient amount of various amino acids coming to the body through food or insufficient synthesis in the body, the reason for this is that there are no or insufficient amounts of natural protein-rich

food in the diets of fish. Effective methods of diagnosis and prevention of this disease have not been developed. This, in turn, has a very high probability of reducing the economic potential of fisheries. In order to prevent this, taking into account the climate and local conditions of our Republic, as well as the ecological situation, it is carried out by adding nutrients rich in living natural vitamins, organic, inorganic and mineral substances to the diet of fish. Due to the limitations of such opportunities in the intensification of the fishing industry, their feed is supplemented with various vitamins, protein-rich organic, inorganic and mineral supplements, premixes, drugs, fish oil, blue pulp, animal liver, blue grass, etc. is entered. When artificially feeding fish, their ration should be balanced in terms of composition, nutritional value and biologically active substances in order to prevent protein metabolism disorders. [ 1,2,5 ]

Proteins are the main component of living matter and make up a large part of the organic matter in the fish body. Proteins are the most important material in the growth of fish organs and tissues. They are very desirable at all stages of the life cycle . Proteins are also important as a source of enzymes and hormones. The protein requirement of fish is much higher than that of other farm animals. The total protein requirement depends on the type and age of the fish. For example: proteins should make up 31-38% of feed for carp, 35-40% for trout, 38-40% for ostriches, 40-42% for African salmon and local river salmon, and up to 50% is required for young fish.[ 3,4,7]

When the protein metabolism is disturbed - Mainly in young fish, when the protein metabolism is disturbed, it is possible to see that the appetite decreases at first. When the disease is chronic, clinical symptoms begin to appear for a long time (after 1.5 months or more). Fish lag behind in growth and development, proteins may decrease or increase in the fish body. its deficiency usually causes loss of appetite, eye cataracts, and growth retardation in carp, river and African carp. Disruption of protein metabolism in African silverfish causes various abnormalities in the stomach (thickening of the stomach wall, ulcers and necrosis) and causes the fish to stop growing. An increase in non-exchangeable amino acids in the body or a violation of

their ratio leads to fatty dystrophy of the liver [8,10].

Deficiency of proteins causes dystrophic processes in the liver, heart, kidney, and other vital organs. [ 11,10 ]

Proteins In order to prevent metabolic disorders, it is necessary to avoid feeding fish with unbalanced feed . In winter, it is not recommended to feed fish with low-energy feed and keep them in 5-7C° water. In the winter months, fish should be kept in warm water and their physiological condition and nutrition should be monitored regularly. Fish water temperature from 4C° lower when it comes down transplantation to do recommendation not done . Agar protein exchange violation happen If so , fish complete balanced food with is provided [ 9,10]

Additional respectively fat ( up to 6% ) in particular fish oil plant \_ oils ( corn others ) or of phosphatides used vitamins E and A , supplement sterils there is Vitamin C when available is added . Na and Ca ions in the body balance recovery for 10 days to the diet NaCl and CaCl<sub>2</sub> \_ is added . in the amount of (1-2%) [ 6,12]

Fish artificial in feeding of hypovitaminosis prevention get in order to their ration composition , satiety and biological asset substances with balanced to be need \_ Carp type in fish of vitamins quantity daily the need 1 kg food at the expense of as follows , in mg : vitamin A - 20-2000 IU, thiamine - 0.15 mg, riboflavin 0.2-10 mg, inositol - 200-300 mg, vitamin C - 20 mg, vitamin E - 70-100 mg. 12.10]

In the pools their fish grow up the norm to know should also their \_ \_ adjust the density as well water \_ \_ in the basins natural food source ( water plants ) into consideration get to the goal according to is considered If , naturally nutrients if not , new mowed meadow plants giving artificial to feed pass prevention get \_ Fish for especially kunjara \_ and the shots not to give ( their in the composition poisonous substance has been gossypol ). [ 8,11 ]

**Conclusions.** To the carp breed belongs to in fish proteins exchange violations prevention to do and substances exchange again recovery in order to applied Innoprovect probiotics \_ \_ to feed mixed up without to give fishes scientist indicators , proteins exchange to the violation special clinical and pathanatomical of signs decrease provides .

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