



The Importance of Natural and Artificial Food in Fishing Pools

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ABSTRACT

The article provides information on the identification of natural food bases of fish farms in the intensive method, as well as the feeding of fish fed in identified water bodies with natural and artificial foods.

Keywords:

Intensive, fish, natural and artificial nutrients, chlorella, rye, azolla, biodiversity, hydrobionts, zooplankton, daphnia cyclops.

Introduction Today, in the context of climate change, environmental degradation and depletion of natural resources in the world, providing the population with quality food products is one of the primary tasks. In this regard, ensuring the sustainability of water bodies, preserving the biodiversity of aquatic organisms and increasing fish productivity through modern methods are important engagement. The demand for natural nutrients in the fishing industry is growing day by day. In this regard, the Cabinet of Ministers of the Republic of Uzbekistan on September 13, 2017 No. 719 "On measures to comprehensively develop the fishing industry" and October 18, 2017 No. 845 "On measures to strengthen the feed base of livestock and fisheries" Scientific and practical research on the study of natural nutrients in fish ponds in Bukhara region has been carried out, based on the priorities created by the relevant government and public organizations [1-2]. Before feeding fish with natural nutrients, it is necessary to create conditions for the development of natural nutrients in the pond. In general, it is advisable to know what is included in natural nutrients.

The natural nutrients found in ponds belong to the class of aquatic plants, and greens, blue greens, eucalyptus, and diatomaceous aquatic plants are more reed, dry, and lush than high-water aquatic plants. The entry of zooplankton from daphnia, cyclops, cetaceans, detritus, benthos, insects, and aquatic animals has been reported in the literature by many of our scientists. However, migratory fishermen do not like to use them to feed fish.

In general, the size of the natural nutrient base found in water bodies ranges from a microscopic view to a large volume. Different organisms found in water bodies are food for different fish. Plants that grow naturally or plants that grow in water are considered that depend on water quality. Fishermen use a variety of methods to improve water quality, such as liming the basin and applying various mineral fertilizers to purify the water. Properly fertilized water bodies create the conditions for the development and reproduction of natural nutrients that fish need on their own. In order to achieve good results in the field of fisheries, it is first necessary to know what to feed the fish being fed, and to

know that when giving him additional artificial nutrients, the body price of the fish will not increase.

At present, three types of fish are intensively fed in the country. These are the carp, the white amur, and the white-tailed deer (Figure 1).



Figure 1. Cranberry

Crayfish - This fish feeds on zooplankton organisms that occur naturally in ponds. Because these fish are intensively or polythene-fed, their numbers in the pond are very high. Therefore, these fish are fed by artificially prepared mixed feed. Currently, in Uzbekistan, for intensive feeding of this fish, various compound feeds are imported from other countries. The fat content of fish is very high due to the high content of various vitamins and proteins in the feed. The grass carp is a reed, a lux that grows naturally in ponds (Figure 2). Reeds and lux contain almost no protein and more fiber. Therefore, it is now a tradition in the Republic to feed this fish with alfalfa in intensive feeding. if not discarded, it will reduce the amount of oxygen in the water.



Figure 2. Amur Cup

Therefore, it is advisable to feed rye (*Lemna minor* L) and azolla (*Azolla caraliniana*), which belong to the class of higher aquatic plants, to white grass carp. These plants are very small and contain 45-50% protein.

Whitefish are microscopic aquatic plants that feed naturally in ponds (Figure 3).

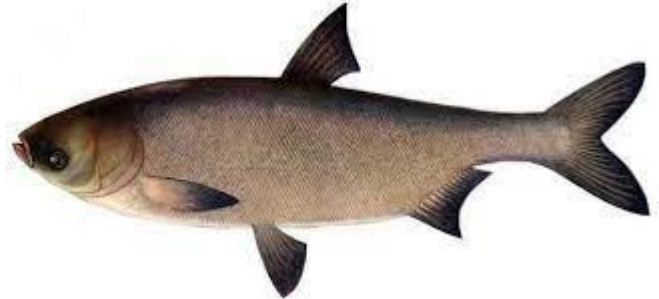


Figure 3. Bulletproof fish

The same thing applies with fisheries. That is, there are piles of manure around the pond. The main purpose of manure disposal is to naturally propagate microscopic aquatic plants in the basin. But they don't really know that the oxygen in the water is used to break down the manure. Therefore, the amount of oxygen in the water in such basins decreases rapidly. With this in mind, scientists from Bukhara State University used chlorella (*Chlorella vulgaris*) as a natural food for fish by propagating chlorella (*Chlorella vulgaris*) from microscopic aquatic plants with high protein content and many vitamins.

A research laboratory for biotechnology and ichthyology has been established at the Department of Biology, Faculty of Agronomy and Biotechnology, Bukhara State University. The laboratory is specifically breeding chlorella (*Chlorella vulgaris*) and ryaska (*Lemna minor* L) and azolla (*Azolla caraliniana*), which are high in physiologically active substances (Figure 4).



Figure 4.

Chlorella (*Chlorella vulgaris*) is a single-celled microscopic algae belonging to the division of green algae. It is a natural food of algae, whitefish (*Hypophthalmichthys molitrix*), containing 45-60% protein, 25-30% carbohydrates, 10% fat (unsaturated fatty acids omega-3, omega-6), more than 14 vitamins, antioxidants, micro and macronutrients as well as essential amino acids.

Chlorella (*Chlorella vulgaris*) rehabilitates fish ponds and eliminates pathogenic pathogens by producing enzymes against bacteria, fungi and viruses that cause infectious diseases in aquatic fish. *Chlorella* (*Chlorella vulgaris*) increases the amount of dissolved oxygen in the water in fish ponds by 30-40% due to the release of 200 times more oxygen than its biomass. In addition, in water bodies containing *chlorella* (*Chlorella vulgaris*), zooplankton, which are a natural food for fish, also grow and feed, which is the basis for further increase in fish productivity.

Conclusion. Experiments have shown that natural and artificial nutrients in fish ponds have been studied. It was found that the body price of fish does not increase when fish are fed with natural nutrients rich in physiologically active substances.

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