



## Biology of Phytoplankton in ditch waters and their application in fisheries

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### ABSTRACT

The article provides information on the occurrence of phytoplankton in ditch waters, the reproduction of important species and their use in the fishing industry.

### Keywords:

Phytoplankton, ditches, green algae, diatoms, euglenas, whiteflies.

Globally, the health and longevity of the population depends largely on 55% of lifestyle and quality of life, 25% on the environment, and 8-12% on the culture of health care in a particular area. But 50 percent of lifestyle and quality of life depends on consuming complete nutrition. This means that the health of every citizen depends on the quality and environmental friendliness of the food consumed. It may lag behind the most basic biological milk and eggs, but is far superior to mutton, beef and poultry. The world's average annual consumption of fish is 16.6 kg. This figure is set for Uzbekistan at 12 kg. If the population of the Republic is 30 million, then it will be necessary to grow 300 thousand tons of fish a year.

In the climatic conditions of Uzbekistan, microscopic algae (phytoplankton) are actively developing throughout the year in most water bodies. And they produce a certain amount of biomass. Some species reproduce because their biomass is rich in physiologically active substances.

Species of phytoplankton that are abundant in the waters of ditches and

biological ponds have been identified. And from them were isolated algal cells of those rich in physiologically active substances (proteins, carbohydrates, fats, vitamins, antibiotics, hormones, etc.). Finally, their growth and reproduction in a variety of nutrient media was determined under laboratory, semi-manufacturing, and production conditions.

Algologically pure cells of *Chlorella* and *Scenedesmus*, rich in physiologically active substances, were isolated from green algae species, and the growth and development of 04 minerals in the nutrient medium was studied in the laboratory.

Since phytoplankton are the main food for whitefish on fish farms, *Chlorella* and *Scenedesmus* breeding plants have been built near a number of farms to increase their productivity and are used as feed. It has been found that the release of green algae into fish ponds can enrich the water with oxygen, purify it of organic matter, and increase fish productivity by 40-45%. *Chlorella* is a single-celled green microscopic algae. It cannot be seen with the naked eye. The structure of the

cell varies: spherical or elliptical, about 3-10 microns in size. The cell divides and multiplies. In terms of division, they reproduce asexually by dividing into 4 to 8 new cells, and so on. New young cells divide and multiply. New young cells form autospores. When the conditions are right, the cells divide and multiply every 6-8 hours. If the light, nutrients and temperature of the chlorella are sufficient for the development of chlorella: an average of 40-50 tons of dry or 170-250 tons of suspension grown in a device that can accommodate 50m<sup>3</sup> of chlorella suspension per season allows you to get chlorella in liquid form. Dry chlorella contains 50-60% protein, 56% total protein, 30% carbohydrates, 7-15% fat, 6-8% nitrogen, 5.5% phosphoric acid, 12% mineral salts and other nutrients. It is very rich in amino acids and vitamins. Including: A, B, B1, B2, B6, B12, C, E, D, etc. For chlorella to grow, the water temperature should be +10 - + 35 0C and it should be well lit.

The nutrients recommended by academician Muzaffarov AM, professor Toubayev T. (1976-1978), who raised chlorella on a scientific basis in the conditions of Uzbekistan, in recent years, scientists of the laboratory of soil microbiology (Jumaniyozov. I 1983-1990).

Specialists in production recommend the use of fertilizers of very simple community farm and the use of aqueous suspension in botany, in every community farm, without any difficulty, in the cultivation of algae gas and trace elements without using of valuable elements.

At present, three types of carp, grass carp, and sturgeon are intensively fed on fish farms. Since carp feed mainly on zooplankton, special compound feeds are prepared to increase its productivity. A certain amount of manure juice is used to breed zooplankton in fish ponds. Due to the fact that manure juice is mainly composed of organic matter, it leads to water pollution and, in turn, to a decrease in dissolved oxygen in the water. Due to organic matter, saprophytic organisms - bacteria and zooplankton - multiply and mesosaprobic conditions are observed in the pools. While zooplankton are food for magpies, bacteria

break down organic matter and mineralize. Due to the minerals that occur during the mineralization process, phytoplankton develop rapidly and water blooms is observed water blooming. Water blooms are caused by the growth of blue-green, green, diatoms and euglena. The photosynthetic activity of phytoplankton increases the amount of dissolved oxygen in the water and improves the sanitary condition of the ponds.

Phytoplankton are the main food for whitefish. For this reason, a large number of species of algae have been identified in the ponds of the Bukhara Belamur fishery in Bukhara region. In this regard, scientific work is underway to isolate protein-rich species from the identified species, multiply them and double their productivity.

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