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## **FEATURES OF EUTROPHICATED PROCESSES IN RESERVOIRS FOR ECONOMIC AND HOUSEHOLD USE IN ZHYTOMYR REGION**

Eutrophication is the ecosystem response to the addition of artificial or natural substances, mainly phosphates, through detergents, fertilizers, or sewage, to an aquatic system. One example of this is the "bloom" or great increase of phytoplankton in a water body as a response to increased levels of nutrients. Negative environmental effects include hypoxia, the depletion of oxygen in the water, which may cause death to aquatic animals.

The purpose of my study was to determine peculiarities of phytoplankton formation and development, as well as methods of finding quantitative and qualitative indicators of eutrophication in the reservoir of "Denyshi" and the water intake of "Vidsichne". The overregulation of reservoirs, sewage from the industrial and municipal enterprises, water pollution by fertilizers and pesticides, contamination wastes and many other factors determined specific conditions for structure and production formation of the phytoplankton. The problem of water resources protection in the Zhitomir region is extremely urgent nowadays.

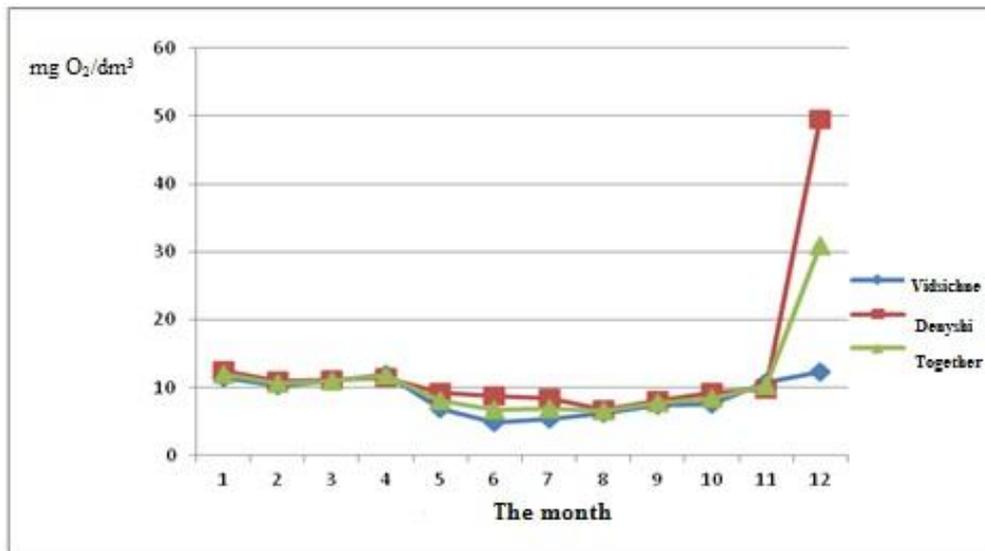
The phytoplankton in the reservoirs under our consideration was examined and found to be presented by diatoms, green, blue-green, euglenophyta, golden and the dinoflagellata algae. In these reservoirs we observed four types of algae: blue-green algae (76%), diatoms algae (14%) and green algae (10%).

Euglenophyta, golden and dinoflagellata occur in the habit in small negligible quantity. They are found only during certain periods of year: euglenophyta - in May and June, dinoflagellata - in July, September and November, golden algae- in April, June, September and November. Therefore they have no crucial importance in the habit.

During 2012, 2013 and 2014 the reproduction intensity of certain phytoplankton forms was different. Let us consider seasonal dynamics of phytoplankton development.

The recurrence is usually observed in reservoirs with limited water exchange and is caused by algae diatoms domination during all the vegetative period. Then they are replaced by blue-green algae in the second half of summer. When it gets cold diatoms algae begin to develop.

The study of the dissolved oxygen content in water showed its decrease during the period of blue-green algae growth (April-October) (fig.1). We also observed an insignificant reduction in quantity of diatoms and an increase in green algae quantity. So, we can conclude that the blue-green algae were the main source of the reservoirs pollution in summer.



*Fig. 1. Concentration of the dissolved oxygen in the reservoirs for three years*

The dissolved oxygen decrease in both reservoirs began in April. In June there was a sharp reduction in soluble oxygen to 4,95mgO<sub>2</sub>/dm<sup>3</sup>. In "Denyshi" the minimum concentration of the dissolved oxygen was observed in August, when it reduced to 6,72 mgO<sub>2</sub>/dm<sup>3</sup>. At this time the quantity of blue-green algae began to increase. Such a decrease in the content of the dissolved oxygen in both reservoirs lasted till September. Then its content began to increase gradually. In December it reached the maximum amount.

The study shows that the less dissolved oxygen is available in water, the greater amounts of algae can be observed and the more intensive eutrofication is. The intensity of phytoplankton growth in the water intake of "Vidsichne" is higher than in the reservoir of "Denyshi".