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STUDY AND ANALYSIS OF THE MICROBIOLOGICAL COMPOSITION OF OPEN RESERVOIRS

Jumaeva Sh.B
Bukhara State Medical Institute named after Abu Ali ibn Sina,
Assistant of the Department of Medical Biology

ANNOTATION

When assessing water quality, conducting hydrobiological studies along with conducting sanitary and microbiological studies in open reservoirs of the Bukhara region is considered necessary. The survival rate of pathogenic and opportunistic microorganisms in the water of reservoirs increases due to an increase in the diversity of microorganisms, including benthos, phytoplankton and zooplankton.

Keywords: microbiology, microorganisms, open reservoirs, hydrobiology, zooplankton, benthos, phytoplankton.

One of the important directions of the socio-economic development of our country is the availability of sources of drinking and recreational water, the achievement of high quality, safety of drinking water consumed by the population. At the same time, open reservoirs used for drinking and recreational purposes require the determination of microbiological, hydrobiological changes in water samples and the justification of standards corresponding to the level of safety. Therefore, research work on these problems remains relevant to this day.
The use of open reservoirs as a source for household, drinking and cultural needs of the population is very important for the Bukhara region, which is located in the steppe and semi-steppe zone of Uzbekistan. Also, the efficiency of water use in hygienically, chemically and microbiologically safe water bodies was scientifically substantiated, a mechanism for monitoring microbiological safety was thought out, which cannot be applied to other water bodies, so it became clear that separate criteria should be created for them.

To compare the results obtained, the parameters listed in the sanitary rules and norms "Hygienic requirements for the protection of surface water bodies in the regions of the Republic of Uzbekistan" No. 0172-04 were used as the norm. These norms were no more than 1000 (Bactérias coliformes comuns) BCC of bacteria forming a colony/ml for wetlands of water use category I, no more than 500 CFU ml for wetlands of water use category II, no more than 100 CFU ml for wetlands of water use category I and II, respectively.
The obtained results showed that seasonal fluctuations were observed among the parameters of the design Bureau, the (Total microbial number) TMM. Taking this into account, microbiological indicators are given depending on the seasons of the year.
The spring indicators of the BCC and the PMF of the water of open reservoirs differed from each other. In the Kuimazar reservoir, the BCC was below normal regardless of the sampling location - accordingly, the reservoir is located in front of the shore at the level of 3.0±1.1-1 dm^3 of water; in the middle of the reservoir at the level of 85.8±3.8-1 dm^3 of water from water samples; in 22.4±2.4-1 dm3 of water from water samples of the recreation area.

The BCC indicators for the Tudakul reservoir differed significantly from the indicators of the Kuyimazar reservoir. Starting from the middle of the watershed and the recreational zone, the BCC was below the norm - 358.2±5.9 per 1 dm^3 in water and 116±3.1 per 1 dm^3 in water, respectively. However, before the coast, the parameters of the BCC exceeded the norm by 20.4 and 21.2 times.

The parameters of the Amu-Bukhara Canal BCC differed markedly from the parameters of other comparable reservoirs.Not all indicators, regardless of the selected scores, convincingly differed from each other. If the BCC was contained in 3.3±1.1-1 dm3 of water in water samples from the shores of the reservoir, the indicators from the middle of the channel were slightly lower than the comparable parameter (in 12.7±1.8 and 8.0±1.7-1 dm3 of water, respectively) than the data from the middle of the reservoir from the practical. Comparative analysis shows that the samples of the Amu-Bukhara Canal were higher than these indicators of the swampy reservoir, the quality of which is compared at the BCC.

The water quality in the BCC and TMM.reservoirs used for drinking and recreational purposes in the spring was convincingly different from each other.The water of the highest quality was in the Kuyimazar reservoir, the next was the Amu-Bukhara Canal. The quality of its water was the same as in a reservoir with a low toad content. It should be noted that these parameters of the Amu-Bukhara Canal and Kuymazar reservoirs were weakly dependent on the points from which samples were taken, but in the Tudakul reservoir these differences were convincing. The quality of its water was the same as in a reservoir with a low content of toads. All parameters of the BCC and TMM.were taken on the shore, and water samples from the middle of the shore were significantly higher than normal. It follows from the above data that today these two microbiological indicators are of great importance in the sanitary and bacteriological study of samples of open reservoirs, including reservoir water. Considering this, it was believed that these parameters are important in determining the efficiency, safety and reliability of water use from reservoirs in the spring, as well as during microbiological monitoring of open reservoirs.

In order to compare microbiological indicators with spring indicators, these studies were also conducted in the summer.

The parameters of the Amu-Bukhara BCC Channel were higher than normal and spring indicators, regardless of the points selected in the summer. If in the spring all parameters were below normal, regardless of the sample location, then in the summer we observed the opposite, that is, all indicators were several times higher than normal.

It was found that the BCC detected from the middle of the Amu-Bukhara Canal in the summer exceeded the norm by 2.3 times (1165.9±9.1 dm3 in water), the Amu-Bukhara Canal by 10.7 times (5331.1 ±13.1 dm^3 in water) in front of the coast. High levels of BCC were observed in coastal water samples (96.3=17.6 in 1 dm3 of water), which was 19.4 times higher than the specified norm.

Similar, but large intensity parameters in the design Bureau were observed in water samples of a swampy reservoir. A discrepancy in the amount of BCC was found in samples from the middle of the catchment (2414.1±11.4 per 1 dm^3 of water). The watershed is coastal, also in water samples from the recreational zone of the BCC was the most common - 13792.6 ±22.6; 12729.6±22.1 and 13503.7±22.5 per 1 dm^3 of water.

Water samples taken in the summer were practically at the Kuimazar reservoir, although all parameters were higher than spring indicators, but within the normal range, In the water from there the BCC exceeded the norm by 2.6 times (1317.8± 9.9-1 dm^3 in water).

Thus, in all the studied reservoirs, according to the parameters of the Design Bureau, the summer indicators were convincingly higher than the spring indicators. The high availability of BCC parameters in summer compared to spring indicators is explained not only by the temperature factor, but also by the high impact of the anthropogenic factor. It should be noted that the summer indicators of the Kuyimazar reservoir at the BCC did not reach the upper limits of the norm. It was noticed that the Design Bureau exceeds the norm. The justification of the effectiveness and safety of the use of reservoirs thus justifies the need for microbiological monitoring in open reservoirs of the region.

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