
Problems and Solutions of Water Disinfection in Tashkent City

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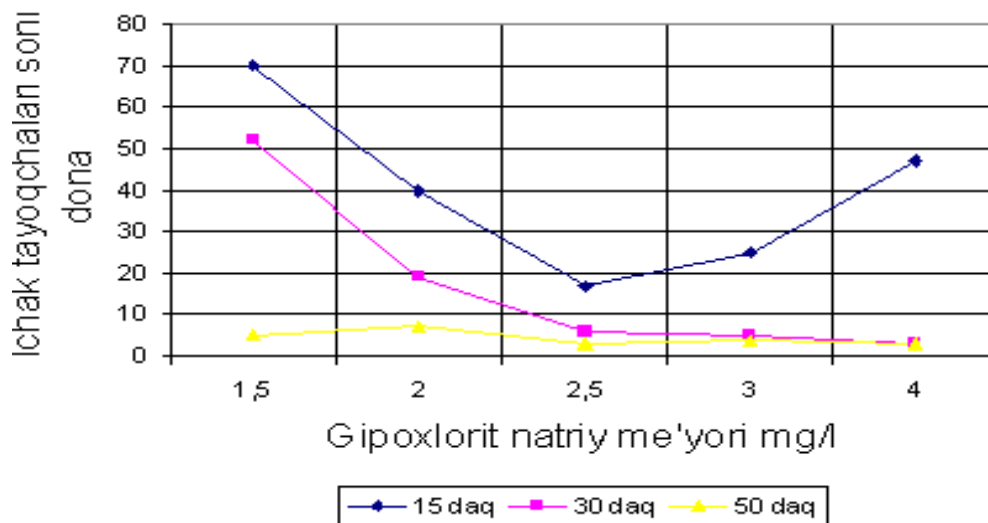
Annotation: Waste water decontamination was considered on the example of the city of Tashkent. An analysis of the change of Escherichia coli in wastewater treatment with temperature is presented.

Keywords: Water disinfection, chlorine, water consumption, treatment plant, water reserves.

Our government is developing a number of decrees and decisions on the effective use of water and land resources. Our country is located in Central Asia, and the problem of the Aral Sea, which has recently been observed here, worries the residents of all regions living in the region. Considering that more than 60% of the population of Uzbekistan lives in rural areas, it is not difficult to imagine how urgent a problem it is to imagine the demand for clean drinking water. The construction of new residences in rural areas by our country's president in recent years increases the demand for clean drinking water. The problem of clean drinking water has become one of the main and urgent problems on earth. A number of shows and publications are being published in the world mass media on solving this problem. It is known that the last step in the treatment of clean drinking water is its disinfection. Well, the question arises as to what level of decontamination has been implemented in our country [2,3].

Water disinfection plays an important role in providing the population with sufficient and high-quality drinking water. There are several methods of water disinfection, including chemical and physical methods. Physical methods include boiling, UV, gamma ray, and ultrasound decontamination. In this case, the water can be brought to a level that meets the quality standards of drinking water. Boiling is one of the important methods of water disinfection, in this process all microorganisms in water die and the natural taste of water is not disturbed. But it is not possible to boil large quantities of water, so tap water is chlorinated in all countries. After it was determined that this method is of great importance in maintaining public health, it was introduced on a large scale [3,4].

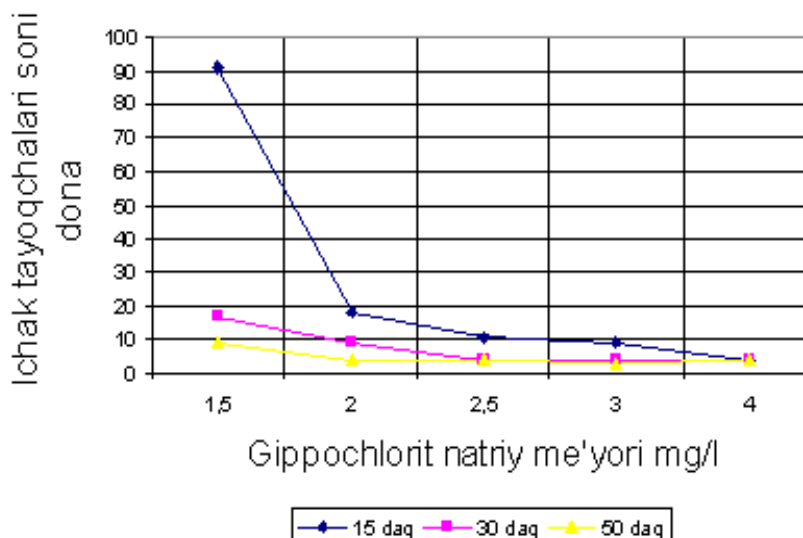
In water treatment stations of Tashkent city, water is mostly neutralized with liquid chlorine. If we consider that the main part of this substance is imported from the Russian Federation, it is not difficult to imagine the expenses that will be spent on it. As it is known, it is necessary to take into account the characteristics of the composition of wastewater when decontamination using chlorine compounds.



1 picture. The effect of sodium hypochlorite at a temperature of 80 C on Escherichia coli.

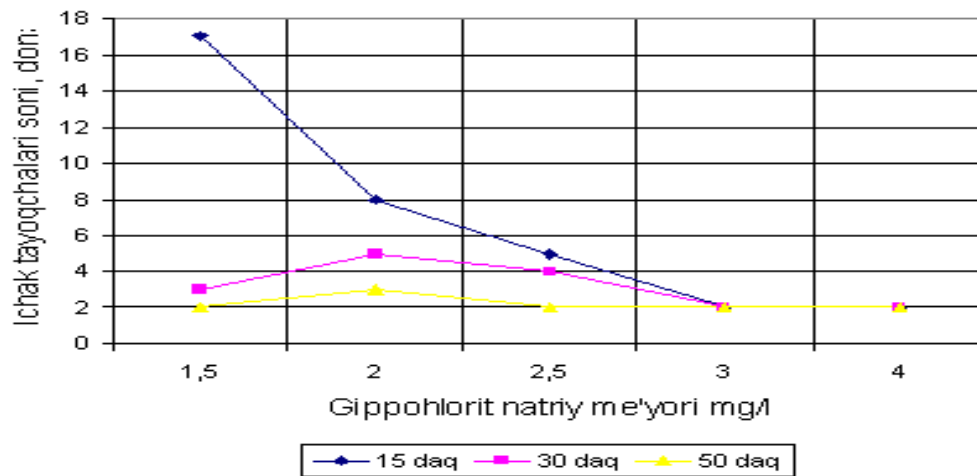
Waste water from Tashkent aeration stations makes up 30% of production waste water coming from city enterprises. In addition, the amount of wastewater entering the station is 1.2 times more than the design capacity of the treatment facilities, which affects the quality of treatment. Due to the high load of the plant, high levels of BOD5 were recorded in some effluent samples along with large amounts of suspended particulates. For example, the average hourly value of BOD5 (KBE) determined during one day ranged from 5 to 40 mg/l.

The duration of contact of sodium hypochlorite with wastewater and its dose (rate) are two main factors that depend on having a stable bactericidal effect (effectiveness). The bactericidal performance of electrolysis products in wastewater is affected by reagent ratio, contact time, and KBE5.



2 pictures. The effect of sodium hypochlorite on Escherichia coli at a temperature of 16 0C.

When choosing the dose and contact time of sodium hypochlorite for the disinfection of natural waters, it is necessary to take into account the accepted scheme of disinfection, the bacteriological composition of the water and its temperature.



3 pictures. The effect of sodium hypochlorite on Escherichia coli at a temperature of 23 0C.

World experience has shown the feasibility of using sodium hypochlorite. Because it is somewhat more active and safer to use than other reagents.

From the obtained analysis, we can conclude that in the future it is planned to neutralize natural waters in our country with the help of sodium hypochlorite and use them as drinking water.

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