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Effect of boiling and filtration on the content of inorganic ions in spring water

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Abstract

The article evaluates the effectiveness of the methods of boiling and filtration through a household filter “Barrier Classic” in reducing the content of inorganic ions in water from three springs in Kirov. It has been shown that the use of filtration is effective in reducing the electrical conductivity of water, which is an indicator of the total ion content. Filtration of water led to a decrease in the pH of water, and boiling – to its growth, while the pH values did not go beyond the quality standard.

When the spring water was filtered, the concentration of calcium ions in the water from the springs decreased by up to 1.7 times. For the spring of the Trifonov Monastery, which is characterized by the highest concentration of calcium ions, boiling water was more effective, as well as the combined use of filtration and boiling. The decrease in the concentration of calcium ions in the water contributed to a decrease in the total hardness of the water.

Filtration of water led to a decrease in the content of nitrate ions in all samples of spring water by 1.4-2.2 times. The filtration method was effective in reducing the concentration of heavy metal ions, the use of which made it possible to reduce their content in most water samples from springs to 3.3 times compared with the initial values.

Although the combination of filtration and boiling of water in some cases was inferior in efficiency to filtration, nevertheless, it is more expedient, since it allows to minimize the number of microorganisms in water, including pathogens, which are present in it.

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