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of Life Sciences
and Technologies

13th International Scientific Conference
STUDENTS ON THEIR WAY TO SCIENCE
(undergraduate, graduate, post-graduate students)
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ECOLOGICAL SAFETY OF SPRINGWATER

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Springs are an exit of underground waters to a surface. Springs are a component of a natural landscape, they often are sources of the rivers. Springs have great environmental and aesthetic value. So far many springs are a source of drinking water. In too time the chemical composition of water of springs is reflection of an environmental situation in the region. For example, in many regions of Belarus the nitrate content, including in concentration hazardous to health is noted [1].

The Threshold Limit Value (TLV) of nitrates in drinking water is 45 mg/dm³ [1].

We have studied water of springs of the Baranovichy district on the content of nitrates during the research in 2017-2018. Identification of nitrates was carried out by portable chemical laboratory Merck by a colorimetric method. We have explored 24 springs of the Baranovichy district (Brest region, Belarus). Chemical water analysis of springs which are used as a source of drinking water has been carried out. Only in 3 springs (Molchad-3, Tartaki, Yasenets) concentration of nitrates didn't exceed maximum allowable concentration.

In 11 explored springs (Berezouka-1, Gats, Girmantautsy, Dobry Bor, Kacharyzka, Kanushouschyna, Paulinava, Penchyn, Rabkovichy, Rogoznitsa, Vershok — 5.8% of all investigated) concentration of nitrates has made 1-2 maximum allowable concentrations; in 6 springs (Berezouka-2, Kuzevichy, Molchadz-1 and -2, Padgornaja, Torchytsy — 25%) concentration of nitrates has made 3-4 maximum allowable concentrations; in 4 springs (Bryksichy, Padkrynitsa, Rudashy, Tratsevichy — 16,7%) concentration of nitrates has made 4-5 maximum allowable concentrations.

Thus, 87.5% of the explored springs' water contained nitrates in concentration hazardous to health. For safety of consumption of spring water it is necessary to inform consumers of water on her bad quality. The study of springs of the region will be continued in 2018 with a frequency at least once a quarter.

References

1. Kudelskij A.V. Hydrogeology and mineral waters of Belarus. — Minsk, 2017. — 285 p.