

**HYGIENIC ASSESSMENT OF DRINKING WATER POLLUTION WITH ORGANIC SUBSTANCES**

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**Introduction.** The safety of drinking water is an actual issue that bothers all of those who advocate for access to qualitative drinking water. The civil society is particularly alarmed, since, despite of every effort made in order to reduce inequalities in this area, 1 million and a half people lack access to safe drinking water worldwide. According to the World Health Organization, 34.000 people including nearly 5.000 children die daily from poor quality drinking water. Moldovan population, especially in rural areas, are facing this problem without being aware of its impact on health, environment and in particular on the future. The rural population in Moldova is in a critical situation regarding the right to drinking water. Water quality is affected by different pollutants - nitrates, fluoride, and microbial pollution. Surface water pollution is caused in most cases by communal household sector (wastewater treatment plants, wastewater discharges of untreated water from the municipal system, inadequate solid waste management), agriculture (accumulated animal manure, deposits of pesticides etc.) and the energy sector, such as petrol deposits and petrol stations. In rural areas a major source of pollution of surface waters are latrines, this archaic form of sanitation, which is largely responsible for excessive amounts of nitrates in wells. **Material and methods.** The study involved the collection of water samples from decentralized sources of Moldova (wells, springs) from different geographical zones: in the North, the Central, and in the South of the country. Investigation period: 2015-2019. Sanitary and chemical methods were used to investigate and assess water pollution by organic substances like ammonia, nitrites, and nitrates. **Results.** Indicators of organic pollution in water sources were the biogenic indices as ammonia, nitrites and nitrates. The average concentrations of ammonia ( $\text{NH}_3$ ) of water aqueducts supplied from surface sources and water wells had almost equal values ( $0.16 \pm 0.01$  and  $0.22 \pm 0.03$  mg/L, respectively), however the index in artesian water was 5.8 and 4.2 times higher. The same principle was characteristic for the nitrogen content ( $\text{NO}_2$ ), which concentration in the artesian well water ( $0.05 \pm 0.002$  mg/L) was higher than in water taken from surface aqueducts ( $0.02 \pm 0.001$ ) and wells ( $0.03 \pm 0.005$ ). The origin of these nitrogen substances in artesian water is natural. Both ammonia and nitrites have similar regularities all over the country. Thereby, water from surface aqueducts and wells showed higher concentrations of the analyzed elements in the South (ammonia -  $0.21 \pm 0.01$  and  $0.36 \pm 0.01$  mg/L, nitrites,  $0.02 \pm 0.001$  and  $0.06 \pm 0.002$  mg/L respectively), compared to the North (ammonia -  $0.17 \pm 0.02$  and  $0.18 \pm 0.02$  mg/L, nitrites  $0.003 \pm 0.0001$  and  $0.03 \pm 0.003$  mg/L respectively). The nitrates concentration ( $\text{NO}_3$ ) in aqueduct waters supplied from surface water sources and wells did not range essentially (i.e.,  $5.1 \pm 0.5$  and  $1.8 \pm 0.17$  mg/L), however the water investigated from the wells showed a 10.1 and 28.6 times higher concentration of the estimated index than the above-mentioned sources. In the investigated wells, the highest nitrate concentrations were recorded in the North of the republic ( $88.6 \pm 10.0$  mg/L) and the lowest was found in the South ( $32.8 \pm 4.3$  mg/L). **Conclusions.** The results of the study attest the increased values of organic substances in drinking water. Therefore, the devastating effects of water pollution with organic substances can seriously endanger human health, thus preventive measures must be a priority for any individual or economic society.