



QUALITY OF GROUNDWATER USED FOR HUMAN CONSUMPTION

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Introduction. Water is the environment in which all the vital processes of the human body occur, as well as the water element is one of the environmental factors with multiple effects, both positive and negative for the health of the population. Therefore, its physico-chemical and biological state determines the existence and security of human society. Providing the population with good quality water in sufficient quantities is an effective measure for the prevention and prophylaxis of communicable and non-communicable diseases. The purpose of the study was to analyze the current situation regarding the causes and factors that determine the water quality for human consumption.

Material and methods. A descriptive bibliographic study was conducted on the water quality for human consumption. The study focused on the analysis of scientific articles, reports and guides published online. Databases and open access platforms were used to collect the information.

Results. From a qualitative point of view, groundwater is considered as clean and complying with drinking water standards. The chemical composition of groundwater varies. In most cases, it reveals high mineralization and a surplus. Groundwater across the territory of the Republic of Moldova is protected from surface pollution in different ways. Its content is influenced by agricultural activities, particularly, by the rational use of mineral fertilizers and large livestock complexes. The chemical composition of groundwater in different regions of the Republic of Moldova is as follows: in ordinary wells and springs, the total mineralization is 66.8 mg/L, nitrates – 52.4 mg/L, fluorine – 9.2 mg/L, sulphates – 13.5 mg/L; in artesian wells, the total mineralization is 39.7 mg/L, nitrates – 3.2 mg/L, fluorine – 23.2 mg/L, sulphates – 2.7 mg/L. About 40% of these sources belong to the category of waters with high mineralization and 23.2% with increased amount of fluoride. High mineralization is characteristic of the southern part of the Republic of Moldova. Almost the same situation has been recorded in the southwestern region of Romania, where the quality of groundwater, intended for human consumption, far exceeds the normative values, especially the water mineralization indices. The situation in Romania is characterized by the existence of territories with frequent and important pollution of well water with nitrogenous substances. This situation varies depending on the demographic, socio-economic peculiarities, especially in the rural area. A major problem is the microbial contamination of the water, being a source of infections that can cause many deaths. There are actually two worldwide trends, viz. there are frequent water epidemics with *Salmonella*, *Shigella*, *Escherichia coli* within the developing countries, while whole regions are affected by *Vibrio cholerae*, whereas the industrialized countries do not have these problems, however, other agents have appeared such as *Giardiasis* and *Cryptosporidiosis*.

Conclusions. Thus, to sum it up, water quality presents an important public health problem induced by the wide territorial and spatially dependent variations, from the point of view of the natural chemical composition or due to the population activity.