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RESULTS OF THE DRINKING WATER ECOLOGICAL MONITORING
ON THE TERRITORY OF THE AJARA AUTONOMOUS REPUBLIC**

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As it is known, the quality, characteristics and consistency of the drinking water are determined according to the international standards established by the World Health Organization (WHO). The chemical consistency and the permissible concentration of the bacterial pollution harmless for the human health are determined. In addition, the organoleptic parameters of the drinking water, giving it some pleasant features are also established.

Water contains set of characteristics effecting human health. They are divided into several groups: organoleptic, chemical and microbiological indicators. The characteristics that the human can perceive with his sense organs are called organoleptic ones – water color, scent, taste, temperature, turbidity and transparency. These are the first features that tell us how trustworthy the water is and whether or not it has gone through certain changes. In case of such alterations the source of the water supply can become completely useless.

Chemical indexes, on their part, are divided into several groups. Group 1 contains the chemicals that are naturally found in the water, as the latter is not just pure H₂O. Rather it is a universal solvent which might contain iron, iodine, zinc and any chemical element of the Mendeleev System. While being shaped, certain water supply sources acquire various elements as they pass through the soil layers. This is a quite wide specter of the micro and macro elements that are natural part of the water. Group 2 is comprised of those elements that get into the water through the human activities, i.e. so called anthropogenic pollutants: wastewater from factories, heavy metals, pesticides, fertilizers, insecticides, detergents, washing powders, disinfectants, etc. Group 3 contains reagents artificially added to the water in order to enhance its quality. As water might contain various viruses, microbes and bacteria causing infectious diseases, it is widely known that chlorine, ozone and other substances, including polymers, can be used to make it safer. All of them are added with the doses that are safe for human health.

The amount of drinking water on the Earth is quite limited: as of now, on average, it is only possible to use 12.5 – 14 billion cubic meters of drinking water worldwide annually. As the population grows, the amount of drinking water per-person decreases. For instance, in 1989 on average 9000 m³ water was used per inhabitant. For the year of 2000 this amount fell down to 7800 m³. It is estimated that by 2025 this number will drop to 5100 m³ per year.

With the help of water the human organism receives 25% of mineral substances vital for its proper functioning. Macro-elements such as sodium, potassium, calcium and magnum are the ones that encompass 99% of the human body and determine the general state of the organism. They are actively involved in the vital and plastic processes, building up tissues and especially bone tissues; they ensure normal osmotic pressure in biological fluids and cells, regulate enzyme activities, maintain organism's homeostasis and determine its immune system.

The research represented in the given work concerns studying the organoleptic, chemical and microbiological indicators in the drinking water on the territory of the Ajara Autonomous Republic. Particularly, among the organoleptic indicators the scent, taste and color of the drinking water have been determined; as for the chemical indicators – pH, ammonia and nitrite- and out of the heavy metals – lead, arsenic, cadmium and zinc have been determined.

According to the research results, all the samples of the organoleptic indicators fall under the norm. Out of the chemical indicators, consistency of pH was 6.0 – 9.0 mg/l and ammonia and nitrite consistency – 0.1 – 0.5 mg/l, meaning that none of the indicators exceed the norm. While studying the heavy metals, it has been concluded that in one of the drinking water samples the amount of lead was 0.02 mg/l and the consistency of cadmium – 0.003 mg/l, exceeding the norm and being at the top edge of the maximum permissible concentration respectively. As for the other heavy metals – arsenic and zinc, they turned out to be in the boundaries of the permissible concentration.

Therefore, as a result of the ecological monitoring of the drinking water held in Ajara Autonomous Republic, it can be established that the drinking water is not polluted and is safe to be utilized by the population.