



## DRINKING WATER QUALITY AS A HEALTH FACTOR OF MEAT PROCESSING WORKERS

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**Introduction.** Drinking water quality is a key issue due to the impact of chemical and microbiological parameters on the population health, and, in particular, on the health of employees of meat, poultry and egg safety branch (MPES).

MPES must be provided with a sufficient amount of water of a guaranteed quality for technological, hygienic and drinking water needs and comply with the Law no. 182 of 19.12.2019 on drinking water quality.

The adverse effects of chemical or microbiological indicators of the water quite vary and depend not only on the biological characteristics of the human body, but also on the values and the period of action.

**Material and methods.** The purpose of the study was to assess the laboratory test findings of drinking water quality from the MPES during 2018-2021.

**Results.** Currently, the drinking water for the four studied MPES (Anenii Noi district – no. 1 and 4, Soroca – no. 2, and Bălți – no. 3) is provided from their own wells, thus not supplying drinking water to the population of the above-mentioned localities.

The evaluation of the laboratory results of the water quality from the MPES showed that the underground sources under study revealed various values of the chemical indicators. The average concentrations of iron content found in the sample from MPE no.4 ranged between  $0.3\pm 0.2$  mg/L, compared to  $0.2\pm 0.03$  mg/L in the sample from MPE n r.1. At the same time, while comparing the mean iron content in water from MPE no. 1, it was 2 times higher compared to MPE no. 2 (95%, CI – 0.1-0.05;  $p=0.0008$ ). At the same time, there was an excess of iron concentration at MPE no.4, viz. about 3 times higher compared to MPE no.2 or (95%, CI – 0.4-0.008;  $p=0.05$ ). The ammonium content in water exceeded the maximum permissible limits in MPE no. 2 and MPE no.4, being of  $0.46\pm 0.04$  mg/L and  $1.6\pm 1.5$  mg/L, respectively. While comparing the mean values of the ammonium concentration between these MPES, MPE no. 4 exceeded the average ammonium concentration by 3.5 times compared to MPE no. 2 (95%, CI – 2.6-0.4;  $p=0.12$ ). The values of hydrogen sulfide were as following: at MPE no. 1 –  $146.4\pm 106.6$  mg/L, MPE no. 2 –  $97.6\pm 2.1$  mg/L, MPE no. 3 –  $96.6\pm 2.7$  mg/L and MPE no. 4 –  $96.4\pm 3.4$  mg/L. While comparing the mean values of hydrogen sulfide concentration, a 1.5-time fold increase was found at MPE no. 1 compared to the enterprise no. 4 (95%, CI – 159.9-59.9;  $p=0.3$ ). Higher values of iron, ammonium and hydrogen sulphide content in the water from the wells of the studied meat processing enterprises did not affect the health status of the workers, thus no health manifestations were attested and hence the employees did not seek medical care.

**Conclusions.** The results of the study of the water quality from the wells of the meat processing enterprises showed that the average values of the iron content were 3 times higher at the MPE no.4 compared to MPE no. 2, while the ammonium content was 3.5 times higher compared to the same MPE no. 2, and the concentration of hydrogen sulfide at MPE no. 1 was 1.5 times higher compared to MPE no. 4. Multi-sectoral coordination, including the involvement of economic operators, are needed to ensure the meat processing enterprises with drinking quality water.