

Title: SANITARY QUALITY OF RESIDENTIAL WATER CONSUMPTION OF POPULATION MANGUINHOS COMMUNITIES - RJ.

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Abstract:

The study was carried out in the communities of Manginhos, who have one of the worst Human and Social Development Index of the city of Rio de Janeiro. In this region development of the sanitation system as well as the supply of clean water, did not occur at the same rate as the construction of houses and alleys. Therefore many of the households are supplied water from the “Companhia de Abastecimento Estadual (CEDAE)” through clandestine connections, favoring contamination. For human consumption, the water should be in accordance with the potability standards established by Ordinance of the Ministry of Health (MH) N° 2.914/2011. The objective of the survey was to assess the sanitary quality of residential water of the communities of Manginhos, RJ, according to the standards established in the Brazilian regulation. The study was conducted in 85 homes in the communities of: CHP2, Vila União, Parque Carlos Chagas, Mandela II, Nova Vila Turismo, Comunidade Agrícola Higienópolis, Vila Turismo, Parque João Goulart e Mandela I. The water samples were collected from sources of treated water in the house, such as a filter, and / or sources without treatment, such as kitchen faucets. Biological parameters were analyzed (total coliforms and *Escherichia coli*), as well as physical and chemical parameters (turbidity, pH, free chlorine, total alkalinity, total hardness, nitrogen ammonia, nitrite nitrogen, chloride, conductivity, sulfate and total dissolved solids). Based on the MH Ordinance 2914/11 it was verified that among households with treated water, 56% (33/59) of the samples had coliforms, and among those without treatment, 61% (16/26) of the samples had the presence of coliforms, which did not conform to potability standards, therefore being classified as improper for human consumption. Regarding the physical and chemical parameters, all samples (100%) were in accordance with the maximum values allowed by law, that is, the water was fit for human consumption. The physical and chemical parameters of water samples of households at the time of the study met the maximum limits allowed by the Ordinance of the MH 2914/11. However, around 58% of water samples of households were not in accordance with the law, based on biological parameters, and in these cases the water was improper for human consumption.

Keywords: sanitary quality, drinking water, total coliforms and *Escherichia coli*, physical and chemical parameters

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