

Microbiological quality of water supply, from water tank and filtered in properties of two quarters in Alfenas – MG

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Introduction: Since the output of treated water from the public treatment system until the moment of consumption, several factors may contaminate the product, such as transport, storage and handling. The lacking knowledge of population, or even wrong about the proper way of cleaning and maintenance from the reservoirs and residential water filters and the prolonged use of candles and taps from the filters can lead to drinking water contamination, affecting the life quality. **Objective:** This research evaluates the water quality since its arrival at the residence, going through the storage in the water reservoir until the filters by gravity, and in addition to this, if there is, determine the possible source of contamination. **Methods:** It was selected 50 homes in 2 neighborhoods from Alfenas - MG (25 in Bairro Pinheirinho which is represented by a low-income population, and 25 in Jardim Aeroporto which is represented by a population more well-off than the others), in which water samples were collected from the distribution system from collective supply, water tank and filtered, candle and filter plastic tap. Free and combined residual chlorine were measured in the water samples. Inside the candle was made a scraping of 5cm² and it was diluted in saline for the microbial quantifying. Inside the surface of the plastic tap was passed a swab. In all samples heterotrophic bacteria were quantified by Pour-Plate Method and total coliforms and *E. coli* were quantified by the method of the defined chromogenic substrate. The results were compared to Ordinance nº2914/2011, by Ministry of Health. Tests were performed. **Results:** Free residual chlorine ranged (in ppm) from 0,2-1,2 in the water supply, <0,1-1,2 in the water tank and < 0,1-0,3 in the filtered water, demonstrating gradual decrease of chlorine content by passing through the compartments of water reserve, which turns the filtered water for consumption more susceptible to contamination. No combined residual chlorine was detected in the samples. No *E. coli* was detected in the samples. In Bairro Pinheirinho, 16 houses (64%) presented the filtered water out of potability standards; 1 house (4%) presented the water from the tank water; and 1 house presented the supply water, the water from the water tank and filtered. The houses that presented the filtered water out of potability standards, could be supposed that in 9 filters (52,94%) the contamination came from the candle and plastic tap, in 7 (41,18%) only from the plastic tap and 1 (5,88) wasn't possible to determinate the source of contamination. In Jardim Aeroporto, 11 houses (44%) presented the filtered water inadequate to human consumption; 1 house presented the supply water and filtered water; 1 house presented the water from the water tank and filtered; and 1 house presented the water from the tank water. The houses that presented the filtered water out of potability standards, could be supposed that in 3 filters (23,08%) the contamination came from the candle and plastic tap, in 10 (76,92%) only from the plastic tap. **Conclusion:** The results indicate that the use of the filter can be an additional physical and microbiological barrier for consumers, however it will only be effective if there is a periodic maintenance and a proper cleaning not only in the filter, but also in the candles and taps from these filters, and also the water tanks.

Keywords: Drinking water, Filter, Contamination.

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