

TITLE: OCCURRENCE OF *Legionella* spp. IN SAMPLES OF WATER FROM THE STATE OF SÃO PAULO

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ABSTRACT:

Water is an essential resource for living beings. But if it does not meet microbiological standards, water supplied to the population can transmit infectious diseases and cause serious epidemics. Heterotrophic bacteria, coliforms and *Escherichia coli* are bioindicators usually used to investigate the microbiological quality of water. *Legionella*, an important water-borne bacterium, found worldwide in many environments and capable of surviving in hostile conditions for long periods, has been increasingly researched. *Legionella pneumophila* can cause the Legionnaires Disease, a severe pneumonia, and the Pontiac fever, a moderate respiratory infection. This study aimed to investigate the microbiological quality of water obtained from different sources, in the state of São Paulo. The research of *Legionella* spp was carried in 245 water samples, of which 212 were from urban area, collected in showers, faucets, air conditioning trays and cooling towers of hospitals, industries, shopping malls and hotels in the state of São Paulo; 21 of rural area, collected in springs, artesian wells, faucets and showers of 9 rural properties in Sarapuí city, São Paulo, and 12 samples collected in 2 springs in the district of Paranapiacaba, Santo André, São Paulo. Samples were concentrated in Millipore membrane, acid treated or not, and inoculated into BCYE, BCYE-CYS and GVPC culture media. *Legionella* spp was detected in 34% of samples from the urban area, with the highest number of positive results in samples of air conditioning trays and 38% of the rural area, mainly in samples collected from showers. *Legionella* spp was not detected in samples from district area. The research of heterotrophic bacteria, coliforms and *E. coli* in the 33 samples from rural and district area indicated water improper for human consumption in 67% of the samples from the rural area and 42% of the samples from district area. An alternative chlorination system for the treatment of water in these areas is recommended. It is also recommended that *Legionella* be investigated in samples of water obtained from different sources, in order to establish periodic monitoring of the places where there is danger of the permanence of this bacterium, in order to reduce the risk of dissemination of this pathogen.

Keywords: *Legionella*, water, urban area, rural area, distrital area.

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