

## **Avaliação microbiológica de superfícies de bebedouro e água de *shopping centers* da região de Campinas, SP**

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### **Microbiological evaluation of surface water cooler and shopping malls water region of Campinas, SP**

Water is critical to the survival of human life, but in some situations it may transmit disease. This study evaluated the microbiological conditions of the water and surface of water coolers of shopping malls in five São Paulo state cities: Campinas, Valinhos, Hortolândia, Jaguariúna and Paulínia. Prior to collecting a total of eight water samples (three from Campinas and one from each of the other municipalities), a sample on the inner surface of the water cooler spout was performed by swab technique. The samples were collected aseptically into sterile bags after disinfection (alcohol 70%) followed by flame sterilization of the water outlet spouts. Microbiological analyses were performed at the microbiology laboratory of the Food Technology Institute, and according to the methods recommended by the AOAC Official Method 991.15 for the determination of total coliforms and *Escherichia coli* (water samples) and the Compendium of Methods for the Microbiological Examination of Foods, from American Public Health Association, for total heterotrophic bacterial count (water samples and spouts). All analyzed water samples showed an absence of total coliforms and *Escherichia coli* in 100mL. However, those collected in the municipalities of Paulínia and Jaguariúna had, respectively,  $6.6 \times 10^2$ CFU/mL and  $7.8 \times 10^2$ CFU/mL of heterotrophic bacteria. In the water collected from the other municipalities, the counts of heterotrophic bacteria were below the detection limit of the analytical method (<1CFU/mL). On the surfaces of water cooler spouts heterotrophic bacteria were found at levels ranging from: 70CFU/spout (Campinas shopping mall) to  $2.2 \times 10^6$ CFU/spout (Paulinia shopping mall). According to the results, it was concluded that the water samples collected in Paulínia and Jaguariúna were at odds with the microbiological standards established

by the Portaria MS nº 2.914/2011, from Agência Nacional de Vigilância Sanitária (ANVISA), establishing the maximum acceptable value of 500CFU/mL for heterotrophic bacteria and the absence of total coliforms and *Escherichia coli* in 100mL of water. The microbiological evaluation of the spouts reinforced the importance of hygiene at these points, since high levels of heterotrophic bacteria were found in water coolers sampled in Valinhos ( $3.1 \times 10^4$ CFU/spout) and Hortolândia ( $3.1 \times 10^5$ CFU/spout).

Keywords: water, water cooler, microbiology

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