TITLE: COLOMETRIC QUALITY OF REUSE WATER

AUTHORS: MOURA, P.G[1]; CARNEIRO, A. A. L[2]; SANTOS, M. H[3]; HANDAN, N. B[1]; CARVAJAL, E[3]; SOTERO-MARTINS, A[1].

INSTITUTION: [1]ESCOLA NACIONAL DE SAÚDE PÚBLICA SÉRGIO AROUCA, FIOCRUZ, RIO DE JANEIRO, RJ (RUA LEOPOLDO BULHÕES 1480, 5° ANDAR, CEP 21041-210, RIO DE JANEIRO - RJ, BRAZIL); [2]UFRJ (AV. PEDRO CALMON, 550 - CIDADE UNIVERSITÁRIA, CEP 21941-901, RIO DE JANEIRO - RJ, BRAZIL); [3] INSTITUTO DE BIOLOGIA ROBERTO ALCANTARA GOMES, UERJ (R. SÃO FRANCISCO XAVIER, MARACANÃ, CEP 20550-900, RIO DE JANEIRO - RJ, BRAZIL)

ABSTRACT:

The water scarcity is a threatening condition in several regions of the globe including the northeast region of Brazil. The present work focuses on sanitary safety on the use of reuse water since it could be a sustainable solution for specific demands. The objective of this study was to evaluate the colimetric sanitary quality of reuse water, assuming that this sample is subject to different treatment conditions for the allocation of noble. The 20 liters of reuse water collected in March 2017 were analysed. The total volume sample was vacuum filtered using sequential membranes with porosity of 0.8 µm; 0.45 µm and 0.22 µm. Each membrane was submitted to DNA extraction separately using the Metagenomic DNA Isolation Kit for Water (Biotechnologies Epicenter, Madison, WI, USA). The sanitary quality was evaluated by colimetric and physico-chemical tests, as described in the current legislation (CONAMA 274/200 and MS Resolution 2914/2011). The physico-chemical values were within the recommended standards. However the analysis of the colimetric levels detected four colonies of total coliforms and two colonies of *Escherichia coli* per 100 mL. Although the values detected were low, they were outside the parameters recommended for drinking. It was possible to extract DNA in all the membranes (0,8 µm, 0,45 µm and 0,22 µm), which were filtered, being found 54 ng / µL, 645 ng / µL and 9 ng / µL DNA, respectively. The collimetric levels found in the reuse water analysed indicate a risk to human health, and consequently unfit for drinking purposes.

Palavras-Chave: reuse water, colimetric, quality, current legislation.

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