

TITLE: COMPARATIVE MICROBIOLOGICAL ANALYSIS OF PURIFIED WATER BY THREE OFFICIAL TECHNIQUES

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ABSTRACT:

Purified water is produced by purification systems such as reverse osmosis, distillation and deionization, obtained from potable water, and has applicability in pharmaceutical, cosmetic and laboratory analysis. It must reach the Brazilian Pharmacopoeia established specifications. The total aerobic counts microbiological analysis is one of the tests recommended by the current legislation, with a maximum 100 CFU /mL. The aim of this research was to compare, three official microbiological analysis of purified water samples from a higher education institution. The samples were collected from two different purifiers' equipment and were identified as A1 and A2. It was an aseptic sampling in sterile containers. The microorganisms counting were performed by three different official methodologies: pour plate and surface plate, using media culture Plate Count Agar (PCA) (bacteria) and Agar Sabouraud (fungi), and the most probable number (MPN) using Tryp soy broth (TSB) (bacteria), the culture medium being incubated for 5 days at 35 ± 2 ° C. The plates were evaluated with a particle counter equipment and the MPN tubes by the turbidity and later compared to the table reported in the Brazilian Pharmacopoeia. The results were statistical analyzed using the BioEstat 5.3 software, applying the Friedman non-variance test. None of the samples analyzed showed fungi growth. In the evaluation of bacterial growth the sample A1 presented <3 CFU / mL, in the three techniques performed. However, the A2 sample presented a variation of 4 to 20 CFU / mL, but the results between the techniques did not present statistical difference, since the "p" value was above 0.05. It was concluded that the samples were within the standards required by the monograph, and that there was no significant variation of the results between the methodologies used.

Keywords: water, water analysis, water quality.