



## SEASONAL DYNAMIC OF ZOOPLANKTON AND PROTOZOA COMMUNITIES AND POSSIBLE RELATIONSHIP WITH COLIFORM POPULATIONS

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Zooplanktonic communities have important ecological roles in aquatic environments, such as rapid nutrient cycling due to a high metabolism, grazing of primary producers and bacteria, and competition with other organisms for resources. These interactions occur in Waste Stabilization Ponds (WSP), used for wastewater treatment eliminating pathogens and indicators such as coliforms and *Escherichia coli*, whose population can be related to variations in the zooplanktonic community. Zooplankton grazing is a biological removal mechanism of *E. coli* and coliforms in WSP. Previous studies analyzed physicochemical conditions of WSP and found a direct relationship between incidence of UV rays and decline of the bacterial population. In the WSP sampled, these elements (sedimentation and attachment, dissolved oxygen, pH, starvation, competition, predation by protozoa and macro-invertebrates) behave in a similar manner as in other water bodies. Therefore, the present study can contribute to understanding the dynamic of natural ecosystems. To account for possible seasonal variations, monthly experiments were executed from June 2016 to March 2017, by means of an experimental apparatus with quartz tubes placed in different depths in the pond (10, 20 and 30 cm). Total coliforms and *E. coli* were analyzed using Colilert®. Zooplankton and protozoa were quantified using an optical microscope and an Üthermol cell. No relation was found between *E. coli*, zooplankton and protozoa. However, it was possible to observe variations within these populations, where a few groups were dominant during certain periods. The zooplankton community in WSPs is not greatly diverse, but it can be influenced by seasonal factors. No top-down forces were observed influencing the populations of *E. coli* in the WSP, supporting the hypothesis that its decline is due to UV radiation. These results can be applied to understanding of these groups' dynamics in other environments, associating the variation of zooplankton communities with other seasonal characteristics.

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