

Abstract submission for Congresso Nacional MICRO'07 BIOTEC'07-XXXIII JPG

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Biodiversity monitoring in Wastewater Oxidation Ponds

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In order to study the relationship between Wastewater Oxidation Ponds efficiency and maturation ponds ecological communities, two AGERE systems from Braga neighbouring villages were selected: Cabreiros, CAB and Tebosa, TEB. Every two weeks sampling campaigns were realized (March - July 2007) to gather wastewater simple samples at the systems inflow and outflow. Determinations of Biochemical and Chemical Oxygen Demand and Total Suspended Solids (BOD₅, COD and TSS mg/L), Recovered Heterotrophics and Total and Fecal Coliforms (RH, TC and FC, CFU ml/L) were performed at UM-Biology Lab. The removal efficiencies were 10% higher at CAB for BOD₅ and COD and 10% higher at TEB for TSS. RH removal was mostly higher than 95%, but on CAB 6 and 9 samples, was respectively null and weak. During almost all the sampling period TC and FC removal were about 100% at both systems, but on samples 6 and 9, TC and FC CFU/ml were higher at CAB outflow than at inflow. Samples from maturation ponds were also gathered and maintained in the lab for a month, as microcosms. The daily microscopic analysis showed that in CAB maturation pond *Euglena*, *Scenedesmus* and diatoms are generally predominant whereas in TEB maturation pond the constant presence of *Lemna* was concomitant with a lesser density and diversity of algae. The samples 6 and 9 from CAB maturation pond, showed an absence of eucaryotic heterotrophics probably associated with the weak or even null removal of TC and FC.

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