Efficiency of Three Macrophytes in the Remediation of Miguelete Stream Waters

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Physicochemical and biological monitoring of Miguelete Stream, main fresh water course of Montevideo, capital city of Uruguay, shows deterioration in the water quality. Departing from the idea of phytoremediation as a process based in the use of plants to clean or restore polluted environments, it is set the objective of assessing the impact of the application of a phytoremediation system in the course of the stream. The study is planned in stages and in the first step is pretended to assess the impact of three native macrophytes in the physicochemical variables of Miguelete stream water in laboratory conditions to determine safely the species with the highest efficiency to use in situ. It is used Eichornia crassipes, Pistia stratiotes and Typha angustifolia, species recommended by the scientific advisors. The hypothesis is that Eichornia crassipes and Typha angustifolia are more efficient in the improvement of the physicochemical variables of the stream than Pistia stratiotes. The toxicity analysis, the BDO5, Nitrates and Phosphates measurements show that the three species of macrophytes have a positive impact on these physic-chemical variables, being the Pistia stratiotes the least efficient in this aspect, thereby checking the hypothesis established. It is planned to do a study in situ in the stream to evaluate the development of the plants in real environmental conditions since in the laboratory they present important physiological deterioration. In the same way, actions in the community are developed to form a collaborative work network with NGO's, private companies, social, educational, state and neighbor organizations, engaging them in the management of the project.