

An innovative technology for treating wastewater generated at the University of Murcia

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ABSTRACT

A wastewater treatment plant of an innovative technology, designed by Golfrat S.L., was constructed to evaluate its success in treating the wastewater generated from various installations in the Campus of Espinardo (University of Murcia). The cited technology, named "symbiotic plant®", combines a natural and subterranean treatment with the generation of green areas over the surface of the plant. It is a promising technology, when comparing with conventional system, due to the low energy cost and the simple operational and maintenance procedures. In spite of the variation in the characteristics of the wastewater generated at the University, a great homogeneity in the quality of the effluent is obtained. The removal efficiency is up to 95% for COD, 97% for BOD, up to 87% for suspended solids, up to 80% for nitrogen and at least 40% for phosphorus. Besides, an increasing in dissolved oxygen is obtained along the treatment with the consequent increase in nitrates concentration. With the final treatment in the wetland an important level of denitrification is achieved. The overall treatment plant provides an effluent with enough quality to be used for irrigation of the green areas in the Campus of Espinardo.

Keywords: Innovative technology; Urban wastewater; Small village; Nitrification-denitrification

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