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DYNAMICS OF HETEROTROPHIC CULTURABLE BACTERIA ABUNDANCE AT CERNAVODA WASTEWATER TREATMENT PLANT (ROMANIA)

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Abstract

The aim of this paper was to investigate and understand the relationship between several physical and chemical parameters such as temperature, chemical oxygen demand (COD), and biochemical oxygen demand (BOD) on the one hand and dynamics of bacterial populations involved in the breakdown (hydrolysis) of macromolecular organic matter, on the other. The study was carried out during July-November 2009 at Cernavoda Wastewater Treatment Plant and included quantitative estimation of proteolytic, amylolytic, and lipolytic bacteria as major exoenzymes-producing bacteria. Significant populations belonging to these groups were detected in influent, effluent and in the aeration tank. Composition of exoenzyme-producing populations was different and variable in influent, aeration tank and effluent. No significant connections were found between the different bacterial group's abundance and COD whereas BOD was positively correlated mainly with the dynamics of lipolytic bacteria.

Key words: aeration, bacteria, dynamics, wastewater treatment

Received: January, 2014; Revised final: March, 2015; Accepted: March, 2015

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