

Characterization of Domestic Sewage Mixed with Baker's Yeast Factory Effluent of Beja Wastewater Treatment Plant by Respirometry

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Abstract : In this work, a comprehensive study of respirometric method was performed to assess the biodegradable COD fractions of domestic sewage mixed with baker's yeast factory effluent treated by wastewater treatment plant (WWTP) of Beja. Three respirometric runs were performed in a closed tank reactor to characterize this mixed raw effluent. Respirometric result indicated that the readily biodegradable fraction (SS) was in range of 6-22%, the slowly biodegradable fraction (Xs) was in range of 33-42%, heterotrophic biomass (XH) was in range of 9-40% and the inert fractions: XI and SI were in range of 2-40% and 6-12% respectively which were high due to the presence of baker's yeast factory effluent compared to domestic effluent alone. The fractions of the total nitrogen showed that SNO fraction is between 6 and 9% of TKN, the fraction of nitrogen ammonia SNH was ranging from 5 to 68%. The organic fraction divided into two compartments SND (11-85%) and XND (5-20%) the inert particulate nitrogen fraction XNI was between 0.4 and 1% and the inert soluble fraction of nitrogen SNI was ranged from 0.4 to 3%.

Keywords : wastewater characterization, COD fractions, respirometry, domestic sewage

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