Abstract

The present work shows the results obtained in the anaerobic digestion process of coffee wet wastewater processing. An UASB anaerobic reactor was operated in single-stage in mesophilic temperature controlled conditions (37±1°C). The effect of both organic loading rate (OLR) and hydraulic retention time (HRT) in the anaerobic digestion of coffee wet wastewater was investigated. The OLR values considered in the single-stage UASB reactor varied in a range of 3.6-4.1 kg COD m⁻³ d⁻¹ and the HRT stayed in a range of 21.5-15.5 hours. The evaluation results show that the best performance of UASB reactor in single-stage was obtained at OLR of 3.6 kg COD m⁻³ d⁻¹ with an average value of total and soluble COD removal of 77.2% and 83.4%, respectively, and average methane concentration in biogas of 61%. The present study suggests that the anaerobic digestion is suitable to treating coffee wet wastewater.

Keywords

Anaerobic digestion, coffee wet wastewater, UASB reactor.