


 **Current Issue**

 **Browse Issues**

 **Search**



 **About this Journal**

 **Instruction to Authors**

 **Online Submission**

 **Subscription**

 **Contact Us**



 **RSS Feed**

Acta Medica Iranica

2009;47(4) : 79-84

Performance evaluation of full scale UASB reactor in treating stillage wastewater

A.Mirsepasi , H. R. Honary , A. R. Mesdaghinia, A. H. Mahvi , H. Vahid , H. Karyab



Abstract:

Upflow anaerobic sludge blanket (UASB) reactors have been widely used for treatment of industrial wastewater. In this study two full-scale UASB reactors were investigated. Volume of each reactor was 420 m³. Conventional parameters such as pH, temperature and efficiency of COD, BOD, TOC removal in each reactor were investigated. Also several initial parameters in designing and operating of UASB reactors, such as upflow velocity, organic loading rate (OLR) and hydraulic retention time were investigated. After modifying in operation conditions in UASB-2 reactor, average COD removal efficiency at OLR of 10–11 kg COD / m³ day was 55 percent. In order to prevent solids from settling, upflow velocity was increased to 0.35 m/h. Also to prevent solids from settling, the hydraulic retention time of wastewater in UASB-2 reactor was increased from 200 to 20 hours. This was expected that with good operation of UASB-2 reactor and with expanding of granules in the bed of the reactor, COD removal efficiency will be increased to more than 80 percent. But, because of deficiency on granulation and operation in UASB-2 reactor, this was not achieved. COD removal efficiency in the UASB-1 reactor was little. To enhance COD efficiency of UASB-1 reactor, several parameters were needed to be changed. These changes included enhancing of OLRs and upflow velocity, decreasing hydraulic retention time and operating with new sludge.

Keywords:

UASB reactor , stillage , wastewater treatment plants

TUMS ID: 3269

Full Text HTML  Full Text PDF  247 KB

top ▲

[Home](#) - [About](#) - [Contact Us](#)

TUMS E. Journals 2004-2009
Central Library & Documents Center
Tehran University of Medical Sciences

Best view with Internet Explorer 6 or Later at 1024*768 Resolutions