



- Current Issue
- Browse Issues
- Search
- About this Journal
- Instruction to Authors
- Online Submission
- Subscription
- Contact Us
- RSS Feed

Acta Medica Iranica

2009;47(4) : 53-60

Original Article

INVESTIGATION OF INTERMITTENT CHLORINATION SYSTEM IN BIOLOGICAL EXCESS SLUDGE REDUCTION BY SEQUENCING BATCH REACTORS

A. Takdastan, N. Mehrdadi, A. A. Azimi, A. Torabian, G. Nabi Bidhendi

Corresponding Author:

A. Takdastan

Received: June 25,2008

Accept : December 8,2008

Available online: February 4,2009

Abstract:

The excessive biological sludge production is one of the disadvantages of aerobic wastewater treatment processes such as sequencing batch reactors. To solve the problem of excess sludge production, oxidizing some of the sludge by chlorine, thus reducing the biomass coefficient as well as the sewage sludge disposal may be a suitable idea. In this study, two sequencing batch reactors, each with 20 L volume and controlled by on-line system were used. After providing the steady state conditions in the reactors, sampling and testing of parameters were done during 8 months. The results showed that during the solid retention time of 10 days the kinetic coefficient of Y and Kd were 0.58 mg biomass/mg COD and 0.058/day, respectively. At the next stage, different concentrations of chlorine were used in the reactors intermittently. Results showed that 15 mg chlorine/gMLSS in the reactor was able to reduce the yield coefficient from 0.58 to 0.3 mg biomass/mg COD. In other words, the biological excess sludge was reduced about 48%. But the soluble chemical oxygen demand increased slightly in the effluent and the removal percentage decreased from 95% in the blank reactor to 55% in the test reactor.

Keywords:

Biological sludge . chlorine . sludge oxidation . yield coefficient . specific oxygen uptake rate . sludge volume index

TUMS ID: 12617

Full Text HTML Full Text PDF 760 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