〈論　文〉

嫌気性接触沈殿法を用いた小型合併処理浄化槽における一次処理の効率化

佐藤吉彦，市成　剛，井村正博
フジクリーン工業株式会社　水環境研究所

北尾高嶺，山田俊郎
豊橋技術科学大学　建設工学系

概　　要

生活排水処理を行うにあたり，一次処理における固液分離と汚泥貯留の効率化を図るために，嫌気性接触沈殿法と阻流壁分離法を組み合わせた方法に着目し，試験装置による基礎試験を行い，その処理性能と汚泥性状について調査を行った。さらに，二次処理に担体流動生物濾過方式を組み合わせた実証試験槽を製作し，対照槽として嫌気濾床接触ばっ気方式(構造方法型)の浄化槽を併設した実証試験を行い，その処理性能と汚泥発生量について調査を行った。

実証試験の結果，実証実験槽の総容量は対照槽に比べ，約半分の大きさであったが，処理水質はBOD20mg/ℓ以下，SS20mg/ℓ以下で，安定した処理が行われた。また，BOD－汚泥転換率は26％で，嫌気濾床接触ばっ気方式(40％程度)に比べ，かなり低い値を示した。さらに，このBOD－汚泥転換率の結果より，一次処理部の水理学的滞留時間を24時間としても1年間の汚泥を貯留することが可能であると推測された。

Increasing the Efficiency of Primary Treatment in the Anaerobic Contact Sedimentation Process of Small-Scale Gappei-Shori Johkasou Systems (Domestic Wastewater Treatment Systems)

Yoshihiko SATO, Tsuyoshi ICHINARI, Masahiro IMURA
Institute of Water Environmental Study, FUJI CLEAN CO., LTD.

Takane KITAO, Toshiro YAMADA
Department of Civil Engineering, Toyohashi University of Technology

Abstract

In order to increase the efficiency of solid-liquid separation and sludge storage performances in the primary treatment of domestic wastewater, the authors directed their attention to a method combining the anaerobic contact sedimentation process and the baffle wall separation process. They conducted basic tests by an experimental equipment, and studied the treatment performance and sludge properties. Furthermore, the authors constructed a demonstration tank for the secondary treatment in combination with the carrier fluidized biofilm filtration process, conducted verification tests also utilizing a purification tank of the anaerobic filter contact aeration process (type of treatment based on structural standards) as a control tank, and studied the treatment performance and the generated sludge volume.

As a result of the verification tests, though the total capacity of the demonstration tank was about half as large as that of the control tank, the treated water indicated that BOD was 20 mg/l or less and SS was less than 20 mg/l, proving consistency in treatment. The BOD-sludge conversion ratio indicated 26%, which was considerably smaller in comparison with that obtained by the anaerobic filter contact aeration process (around 40%). This result suggested that the amount of sludge being generated in more than one year could be accumulated even if the hydraulic retention time (HRT) in the primary treatment process was set to be 24 hours.