

## ヒモ状担体を使用した高度処理型合併処理浄化槽の 処理特性と微生物活性助剤(キラヤサポニン)の添加の効果

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### 概 要

ヒモ状担体を使用した高度処理型のベンチスケール合併処理浄化槽を下水処理場内に2基設置し, 約1年間実験を行った。一方を対照系に, 他方を微生物活性助剤(キラヤサポニン)を添加し, 実験系とした。装置への原水の流入および反応液の循環は間欠運転で行い, 完全硝化を目指した運転を行った。装置の水理学的滞留時間(HRT)は2.3日であった。処理水の平均BOD値および平均T-N値は両系とも10mg/l以下と良好であった。サポニンの添加はSSやBODの除去に有効であり, 馴養には約170日間が必要であった。一方, 硝化反応には特に有効であった。13℃以下の低水温期(約100日間)の間に対照系では処理水中にアンモニア濃度が度々検出されたが, サポニンを添加した実験系ではほとんど検出されなかった。また, 硝化反応に対しては馴養期間はほとんどなく変化を確認できなかった。

# Treatment Characteristics of Advanced Gappei-shori Johkasous with Stringy Filter Media and the Effect of Quillaia Saponin as a Microorganism Activator

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## Abstract

Two bench-scale gappei-shori johkasous filled with stringy filter media have been operated for one year to investigate the effect of Quillaia Saponin as a microorganism activator on the performance of domestic wastewater biological treatment. One of the johkasous was used as a control system and the other was used as experiment system feeding with Quillaia Saponin. Feeding influent and recirculating mixed water from the secondary aeration tank were intermittently operated. Concentration of dissolved oxygen in aeration tanks was adjusted optimally for complete nitrification. The HRT of the johkasous was 2.3 days. Effluent concentrations of BOD and T-N in the two johkasous were found to be lower than 10 mg/ℓ averagely. Addition of Quillaia Saponin was proved to be useful for BOD and SS removal, especially for nitrification.

It takes 170 days for acclimatizing microorganism to Quillaia Saponin. Even in a low water temperature period longer than 100days when the water temperature was below 13°C, the experiment system showed good performance of nitrification. During that period, NH<sub>4</sub>-N in effluent in the experiment system was not detected, but was detected in the control system frequently. There is no problem on acclimation of Quillaia Saponin for nitrification.