

DNA-Analysis

Annual monitoring

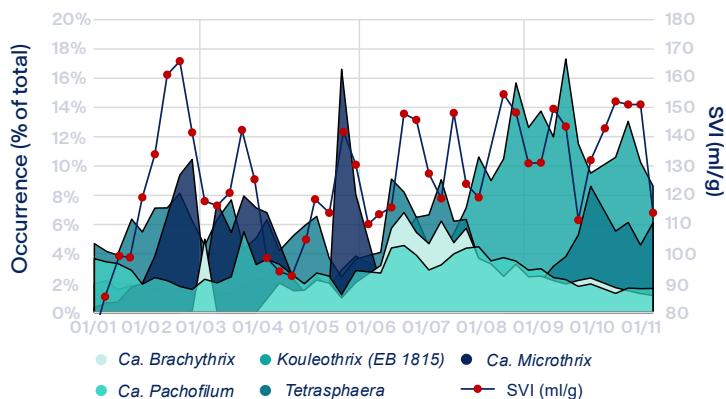


The bacteria in biological treatment systems change significantly throughout the seasons. Therefore, we recommend annual bacterial monitoring to identify problematic conditions early and implement targeted solutions for operational problems.

Included services

- Preliminary phone consultation for sampling instructions
- Sampling and shipping material for 2 weekly samples (104 total)
- DNA extraction, PCR, DNA sequencing, microscopy if required
- Bioinformatics and quality control
- Results as PDF report and raw data (CSV) within 5 working days
- Integration of operational parameters into PDF reports
- Consulting (approx. 12 hours)

Case study sludge settling, ARA REAL



Procedure

- Weekly microbiome analysis on 2 lanes over one year
- Evaluation of microbiome and operational data
- Derivation of measures, e.g., for filamentous bacteria
- Performance evaluation

Results (see figure)

- Strong variability of filamentous bacteria
- SVI peaks correlate with occurrence of specific genera
- *Microthrix* and *Kouleothrix* are the most important genera
- Aluminum is effective only against *Microthrix*

Recommendations

- Increase oxygen availability against *Kouleothrix*
- Use aluminum against *Microthrix*
- Seasonal sludge age adjustment
- Optimize digester liquor dosing