



Online Proceedings

POSTER SESSION 3

MGH 241, Easel 128

2:30 PM to 4:00 PM

Assessing a Method of Quantifying Foam-Causing Filamentous Bacteria in Anaerobic Digesters

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In this research project, a method was developed to quantify *Gordonia* and *Microthrix parvicella* filamentous bacteria in primary, secondary and digester sludge from three different wastewater treatment facilities in King County. The goal of developing this method was to determine the concentrations of filamentous bacteria for the purpose of relating those values to the foaming process in anaerobic digesters. The method utilized gram staining to identify *Gordonia* and *M. parvicella* by microscopy. After visual identification, the method required counting of the filamentous bacteria. These counts were then related to the measurements of biomass to calculate the overall concentrations of *Gordonia* and *Microthrix parvicella* in sludge samples. The method was validated by quantitative polymerase chain reaction (qPCR), which used DNA to quantify the filamentous bacteria. This method was successful in determining the concentration of these filamentous bacteria in sludge samples manipulated in the lab. However, it did not succeed with sludge samples directly from wastewater treatment plants. To ensure this method determines the concentration of *Gordonia* and *Microthrix parvicella* in samples directly from treatment plants, suggestions for future improvement of the method was made. Suggested improvements include different drying methods, different dilutions or additional preparation to homogenize sludge samples.