



Contribution ID: 640

Type: **Poster (+) Presentation**

Characterization of microbial distribution of packaging material processes over a production cycle

Friday, 4 June 2021 09:40 (1 hour)

Microbial growth and biofilm formation are to be expected in many water circulation systems as it is also the case in production facilities for packaging materials. Consequently, these factors can impair the production, may lead to increased downtime and higher costs. Therefore, this study focuses on the determination of microbial composition of different phases involved in the manufacturing process of varying packaging materials. These phases comprise the process water, the porous packaging material itself, and biofilms. Illumina next-generation sequencing was used in order to identify composition on genus level and possible key organisms. In terms of biodiversity, biofilm samples feature a high diversity of microorganisms with up to twenty different microbial classes per investigated sample.

Process water samples showed a reduced diversity; the classes found are consistent with the classes present in the biofilm samples.

Main classes of Gammaproteobacteria, Deinococci, Bacteroidia, Bacilli, Alphaproteobacteria and Clostridia were detected. Moreover, the biodiversity depended on cleaning procedures of the production facility. In all samples, the classes of Gammaproteobacteria, Deinococci, Bacteroidia, Bacilli and Alphaproteobacteria were detected over time of sampling. After one cleaning step an increased diversity of microorganisms was observed, which was reduced again until the next cleaning step.

Time Block Preference

Time Block A (09:00-12:00 CET)

References

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Session Classification: Poster +

Track Classification: (MS5) Biochemical processes and biofilms in porous media