

# Isolation and identification of microbial populations from odour treating biofilters

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Complex odour emissions are normally associated to the operation of wastewater treatment plants, composting facilities and agro-industry activities. The most common contaminants are hydrogen sulfide (H<sub>2</sub>S), organic reduced sulfur compounds (e.g., CH<sub>3</sub>SH), and volatile organic compounds (VOCs). These compounds can be treated using biological air treatment systems, such as biofilters. Five different types of material, including pieces of wood and polymeric material that composed the biofilter mix, were collected from different locations of a biofilter treating odours at an organic waste treatment plant and then subjected to microbiological characterization. Colony forming units (CFU/g) ranged from 10<sup>7</sup> to 10<sup>8</sup> CFU/g from each different sample analyzed. The different materials showed high heterogeneity of microbial colonization, being the diversity higher in an heather based material. After random amplification of polymorphic DNA (RAPD) analysis, a total of 22 different isolates were identified by 16S rRNA sequencing analysis. The capacity of the recovered isolates to oxidize sulphur compounds is being further studied.

