

## Mirobes and bioplastic

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Biodegradable plastic is an innovative means of solving the plastic pollution problem. Prior to the applications of biodegradable plastics, it is important to evaluate and understand the mechanisms and the microbes involved in biodegradation processes. In our study the microbial community dynamics was followed using microscopic and molecular techniques to determine the succession rates and species composition of microbial population attached to bioplastic. Possible differences according to different types/sizes of bioplastic used in the experiments were also tested. In order to determine the microbial community composition, the bacterial community DNA was extracted and 16S rRNA bacterial gene clone libraries were constructed. The analysis of 16S rRNA bacterial gene clone libraries showed that most of the clones were related to *Alphaproteobacteria* (*Rhodobacteraceae*, *Rhodospirillaceae* and *Hyphomonadaceae*), followed by community members *Firmicutes*, *Deltaproteobacteria* and *Gammaproteobacteria* (only up to 3%). A large percentage of clones did not affiliate with any of the sequences deposited in the GeneBank (NCBI). Results of bacterial community structure analyses and microscope observations suggest a fast biofouling and a relevant importance of complex living communities of bacteria and eukaryotes for efficient decomposition of biodegradable plastic material. Bacterial assemblages colonizing bioplastic were less diverse and significantly different in taxonomic composition compared to those from the seawater.