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MARINE BIOFILM COMMUNITIES COLONIZING ANTIFOULING PAINTS IN THE MEDITERRANEAN SEA

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When immersed in sea water, any substrate would be rapidly colonized by micro and then macroorganisms (Wahl, 1989). This complex and sequential natural process called biofouling induces economical and ecological prejudices, especially talking about ship hull or aquaculture nets (e.g. Schultz et al. 2011).

In situ biofilm communities of antifouling coatings immersed in Toulon harbour (France, North-Western Mediterranean Sea) were studied. Immersion was performed in July during one month in order to get mature biofilms beyond pioneer stages (Briand et al. 2012). Complex biofilm communities were described, in term of both abundance and diversity, using flow cytometry, inverted microscopy and PCR-DGGE on six different coatings in triplicates, including coatings with biocides (...) and without biocides (...). Coatings without biocides (including the reference) showed higher densities than biocidal paints, whatever the group of microorganisms (bacteria, cyanobacteria, pico- and nanoeukaryotes, diatoms). Significant variations for both abundance and diversity were observed between the coatings depending on the microorganism groups. Despite each antifouling coating included a cocktail of biocides, some of them seemed to display specific toxicity.