GEOMICROBIOLOGICAL ASPECTS OF CLAY COLLOIDS – CULTURABLE MICROORGANISMS

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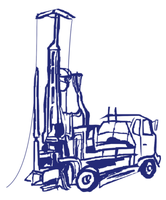
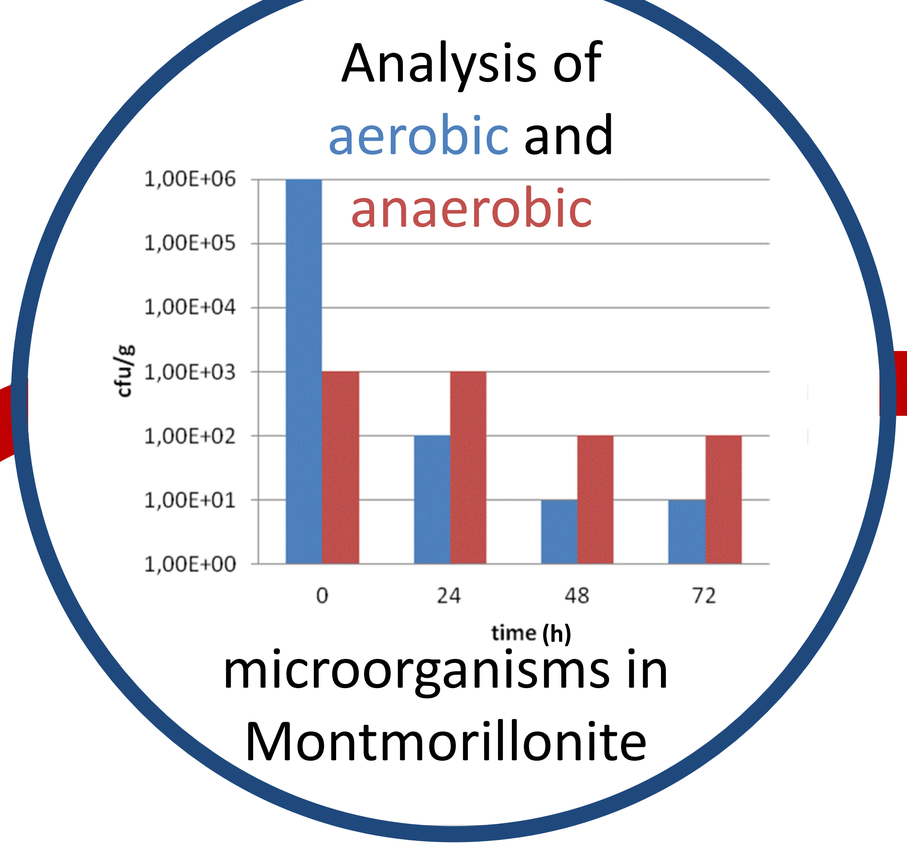


TASK 1

Description of microbial inhabitation in Montmorillonite

The most frequented strain isolated from the anaerobic consortium was very similar to *Desulfovibrio* in its cultivation patterns on SRB agar. It remained viable in Montmorillonite after 24 h of high temperature exposition (100°C).



TASK 2

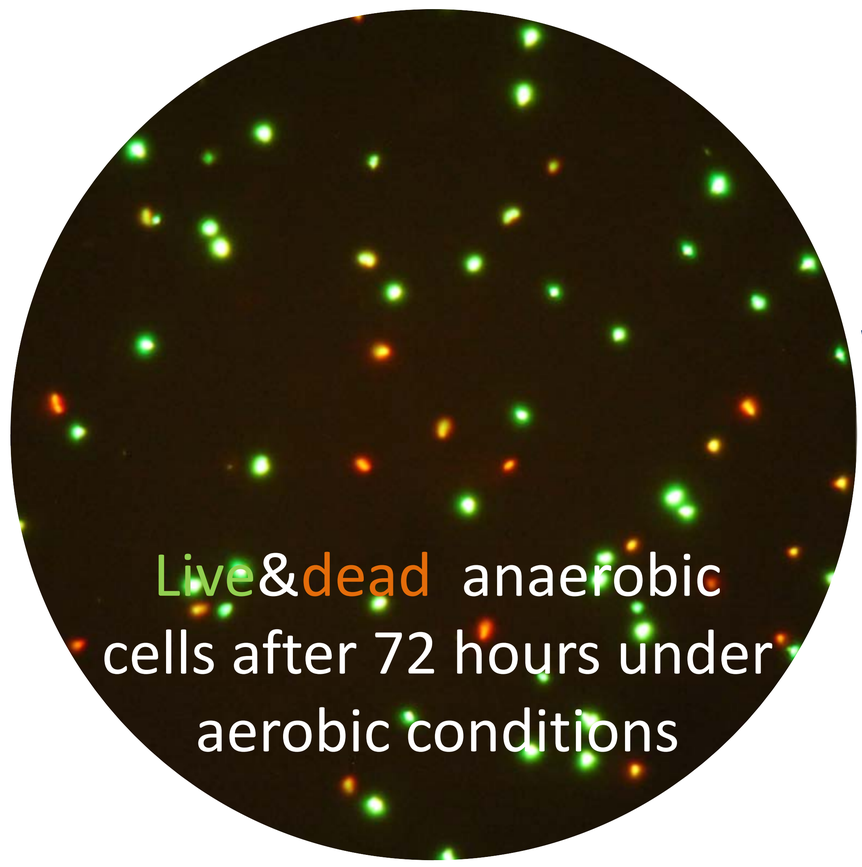
More detailed characterisation of these microorganisms (physiology, metabolic features)

All biofilm growth form has been carefully released from the solid particle surface by ultrasound detachment. Prepared microbial suspension was processed by LIVE/DEAD protocols immediately.

TASK 3

Description of the changes which have been done by these microorganisms (extracellular compound production)

After 6 days of anaerobic cultivation, the content of exopolymeric compound (expressed as total saccharides) increased on clay particles from the origin 10 mg/g to 56 mg/g.



TASK 4

Simulation of SRB colonisation)

Capabilities of the microorganisms to attach the surface was found slightly lower (10^8 cfu/g of Montmorillonite) when compared to the reported biofilm count of 1.5×10^{10} cfu/g of bentonite clay.

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