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Effect of hydrophobic/hydrophilic (or some characteristics) character of *B. cereus* spores on their adhesion capacities and resistance to biocides

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The main aim of this work is to assess the detachment capacity (or removing activity) of sodium hydroxide, nitric acid, detergent based on phosphoric acid, chlorinated detergent and sporicidal activity of biguanide based disinfectant against two adhered *Bacillus cereus* spores (one is hydrophobic and other hydrophilic) to stainless steel surfaces. Four protocols consisted in combinations of chemical compounds concentration, temperature and contact time were tested. For the A protocol (detergent tested based on phosphoric acid) the reduction average was 1.34 log for *Bacillus cereus* 110 (varied from 0.603 to 2.216 log) and 1.395 log for *Bacillus cereus* 89 (varied from 0.41 to 2.355 log). For the B protocol (detergent based on chlorine) the reduction average was 1.83 log for *Bacillus cereus* 110 (varied from 1.115 to 2.723) and log 1.644 for *Bacillus cereus* 89 (varied from 0.922 to 2.29 log). For the C protocol (disinfectant tested based on biguanide) the reduction average was 2.477 log for *Bacillus cereus* 110 (varied from 2.257 to 2.922 log) and 2.566 log for *Bacillus cereus* 89 (varied from 2.381 to 2.984 log). For the D protocol (disinfectant tested based on biguanide) the reduction average was 2.87 log for *Bacillus cereus* 110 (varied from 2.679 to 2.932 log) and 2.549 log for *Bacillus cereus* 89 (varied from 2.285 to 2.984 log). No reduction values did reach 4 log. So, we cannot say that the tested combinations remove effectively adhered spores from the stainless-steel surfaces. In the other hand, any clear conclusion can be settled about the relation between hydrophilic or hydrophobic character, potential zeta, pI and the detachment ability of adhered spores to the stainless steel. For all these reasons, cleaning and disinfection protocols must be optimized.

Biography

Melle Nassima Didouh is a PHd scholar in Microbial Development. She has done the Doctoral research on "Characterization and treatment of the process of biofilm formation by *Bacillus cereus* in the dairy field optimization of cleaning and disinfection procedures" from University of Tlemcen and she had completed her Master's Degree in Nature and Life Science.

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