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**Toxicogenic and physicochemical characterization of *Bacillus Cereus* spores isolated from an Algerian dairy plant**

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*Bacillus cereus* is an endospore-forming bacterium frequently found in dairy products and dairy environment. In fact their spores have great ability to adhere to surfaces, in particular to hydrophobic surfaces and produce many toxins. The most *B. cereus* spores studied has been shown to be generally strongly hydrophobic. Many studies have shown a relationship between the bacterial spore characteristics and its ability to adhere to surfaces. In this study, molecular identification (M13 RAPD, Rep PCR, PFGE), toxicogenic and physicochemical characterization of 14 *Bacillus cereus* strains isolated from a dairy plant located in north-western Algeria were studied using Microbial Adhesion To Hydrocarbon (MATH) method, and zeta potential measurements, respectively. Twelve (12) strains belong to *Bacillus cereus* group III and the two other to *Bacillus cereus* group IV. Spores of 11 strains presented a hydrophilic character and three a hydrophobic one. The spore zeta potential values for all strains were between 12.28 and -44, 51 mV. Four spore morphologies were investigated by Transmission Electron Microscopy (TEM) after negative staining. This allowed the clear observation of an exosporium surrounding all *B. cereus* spores. The ability of spores to adhere to stainless steel was also studied and varied among strains. The presence of an exosporium was not sufficient to explain the ability of spores to adhere to stainless steel surfaces. When physicochemical surface characters of *B. cereus* spores were compared the hydrophobicity, the appendages length, the surface of spore and exosporium were found as the significant adhesion parameters.

**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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