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Biofilm formation and genomic relationships of *Bacillus thuringiensis* strains by ERIC-PCR

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Bacillus thuringiensis (Bt) is of important agronomical research interest because of its beneficial use as biological pesticide. There are some limitations regarding the subspecies classification. Studies at phenotypic and genotypic levels are important to ascertain its variability. The aim of this study was to evaluate the variability by ERIC-PCR and by biofilms formation among strains from Mexico. The genomic relationships between forty environmental strains from the collections of the CINVESTAV-Irapuato and IBT-UNAM were evaluated by ERIC-PCR and the biofilm-forming ability by a 96-well microplate-based assay at 72 and 96 h of incubation. Thirty-nine different fingerprinting patterns, based on 24 polymorphic fragments (139 to 2468 bp) were generated and used to construct a dendrogram. Almost all strains (95%) formed biofilms after 96 h of incubation, whose OD620 data were stratified into 4 categories as follows: 32.5% of them were strong (OD620 >1.03), 35% were moderate (OD620 1.03-0.52), 27.5% were weak (OD620 0.51-0.27) and 5% were null (OD620 ≤ 0.26). The subset of strains from the CINVESTAV collection showed more heterogeneous biofilm-forming ability. A large intra-species genomic variability was observed among Bt isolates. At 96 h of incubation, most strains from the CINVESTAV collection showed moderate to strong biofilm forming ability, whereas those from IBT-UNAM collection were mainly weak biofilm producers. Results showed a large intra-species genomic variability in Bt. However, some strains could be correlated as they were found within clusters depending on the location of isolation.