Diversity of *Bacillus cereus* strains in extended shelf life

Mugadza, Desmond and Elna M. Buys

Abstract

Characterisation of 49 *Bacillus cereus* strains obtained from extended shelf life (ESL) milk and filler nozzles was done using $(GTG)_5$ rep PCR fingerprinting, determining the presence of the virulence genes *cytK*, *nheA*, *cer* and *hblA*, and discrimination of psychrotrophic and mesophilic strains with 16S rDNA. Fourteen isolates were selected for 16S partial sequencing. Fingerprinting and sequencing showed evidence of filler nozzles contaminating ESL milk despite high heterogeneity existing between the isolates. While there is high prevalence of *cer*, *hblA* and *nheA; cytK* was not widely distributed. There was 100% and 8% prevalence of mesophilic and psychrotrophic signatures, respectively. Despite the large diversity of the *B. cereus* strains in this study, there is evidence that filler nozzles and raw milk are a source of contamination of *B. cereus* in ESL milk.