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Czech J. Food Sci.

Ačai P., Valík Ľ., Liptáková D.:

Quantitative risk assessment of *Bacillus cereus* in pasteurised milk produced in the Slovak Republic

Czech J. Food Sci., 32 (2014): 122-131

Quantitative risk assessment of *Bacillus cereus* using data from pasteurised milk produced in Slovakia was performed. Monte Carlo simulations were used for probability calculation of *B. cereus* density at the time of pasteurised milk consumption for several different scenarios. The results of the general case exposure assessment indicated that almost 14% of cartons can contain > 104 CFU/ml of *B. cereus* at the time of pasteurised milk consumption. Despite the absence of a generally applicable dose-response relationship that limits a full risk assessment, the probability of intoxication per serving and the estimated number of cases in the population were calculated for the general exposure assessment scenario using an exponential dose-response model based on Slovak data. The mean number of annual cases provided by the risk assessment model for pasteurised

milk produced in Slovakia was 0.054/100 000 population. In comparison, the overall reporting rate of the outbreaks in the EU in which *B. cereus* toxins were the causative agent was 0.02/100 000 population in 2010. Our assessment is in accordance with a generally accepted fact that reporting data for alimentary intoxication are underestimated, mostly due to the short duration of the illness.

Keywords:

exposure assessment; risk characterisation; Monte Carlo simulations

[fulltext]