# Czech Academy of Agricultural Sciences



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Veterinarni Medicina

# The prevalence of and resistance to antimicrobial agents of *Bacillus cereus* isolates from foodstuffs

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The study was aimed at the assessment whether foodstuffs contaminated with *Bacillus cereus* (*B. cereus*) may concurrently be vectors of spreading resistance. The contamination of foodstuffs with *B. cereus* strains was found in 31% of dairy and in 28% of meat products tested. Only one product from skimmed milk was contaminated. High-fat milk products that were heat-treated during the technological process (87 samples), as well as heat-treated meat products (65 samples), were contaminated significantly frequently (63% and 48% of the samples respectively) ($P < 0.01$). Almost all *B. cereus* isolates displayed low

susceptibility to ampicillin, cephalothin, and to oxacillin. Except for streptomycin (STR) resistance, resistance to other 8 antimicrobial agents occurred sporadically. The STR resistant isolates came particularly from spreading buffer (8 samples) ($P < 0.05$). It was established that the same samples were contaminated with two subpopulations of *B. cereus* with different STR resistances. The frequent occurrence of *B. cereus* in foodstuffs with either fat content and/or subject to heat treatment in processing makes these products risky, however, our study did not confirm that foodstuffs contaminated with *B. cereus* are concurrently vectors of transmissible resistance genes.

**Keywords:**

pathogenic microorganisms; food safety; acquired resistance

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