

## High-Pressure Inactivation of *Bacillus cereus* in Human Breast Milk

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### Abstract

Although Holder pasteurization is the recommended method for processing breast milk, it does affect some of its nutritional and biological properties and is ineffective at inactivating spores. The aim of this study was to find and validate an alternative methodology for processing breast milk to increase its availability for newborn babies and reduce the financial loss associated with discarding milk that has become microbiologically positive. We prepared two series of breast milk samples inoculated with the *Bacillus cereus* (*B. cereus*) strain to verify the effectiveness of two high-pressure treatments: (1) 350 MPa/5 min/38 °C in four cycles and (2) cumulative pressure of 350 MPa/20 min/38 °C. We found that the use of pressure in cycles was statistically more effective than cumulative pressure. It reduced the number of spores by three to four orders of magnitude. We verified that the method was reproducible. The routine use of this method could lead to an increased availability of milk for newborn babies, and at the same time, reduce the amount of wasted milk. In addition, high-pressure treatment preserves the nutritional quality of milk

Keywords: pressurization;human breast milk;*Bacillus cereus*;inoculation

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