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[Review](#) [J Dairy Sci.](#) 2000 Jul;83(7):1659-63. doi: 10.3168/jds.S0022-0302(00)75034-X.

Johne's disease and milk: do consumers need to worry?

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Abstract

Mycobacterium paratuberculosis, an acid-fast bacillus that causes enteritis in ruminants, has been suggested as an etiological agent of Crohn's disease in humans. The mode of transmission is unclear; however, some evidence suggests that humans may become infected via contaminated milk. Currently, it is not known whether commercial pasteurization effectively kills *M. paratuberculosis* in contaminated raw milk. Using a laboratory-scale pasteurizer unit designed to simulate the high-temperature, short-time method (72 degrees C, 15 sec) currently used by commercial dairies, we previously demonstrated that treatment of raw milk inoculated with 10(4) to 10(6) cfu of *M. paratuberculosis*/ml reduced numbers to an undetectable level. However, *M. paratuberculosis* is an intracellular pathogen that resides within the macrophages of the host and evades destruction. We subsequently performed further experiments examining heat treatment of milk inoculated with mammary gland macrophages containing ingested *M. paratuberculosis*. Heat treatment of these samples under high-temperature, short-time conditions demonstrated that the macrophage does not protect the organism because we were unable to recover any viable *M. paratuberculosis* from the samples. Conversely, other researchers have demonstrated that a residual population of *M. paratuberculosis* may survive heat treatment of milk. In addition, a recent news report stated that viable *M. paratuberculosis* organisms have been cultured from retail-ready milk in Ireland. A summary of past and current studies concerning this issue along with a discussion of methodologies used to recover *M. paratuberculosis* from experimentally inoculated milk will be presented in this paper.

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