

Pasteurizing Milk

What is pasteurization?

Pasteurization involves the heating of milk to given temperatures for set amounts of time to destroy pathogens in the milk. Pasteurization is a very effective method to improve the safety of milk. Pasteurization does not change the nutritional value of milk and is different to sterilization.

Why pasteurize milk?

Eating and drinking unpasteurized milk and dairy products can lead to health concerns due to contamination with various bacteria. Pasteurization improves food safety and lengthens product shelf life.

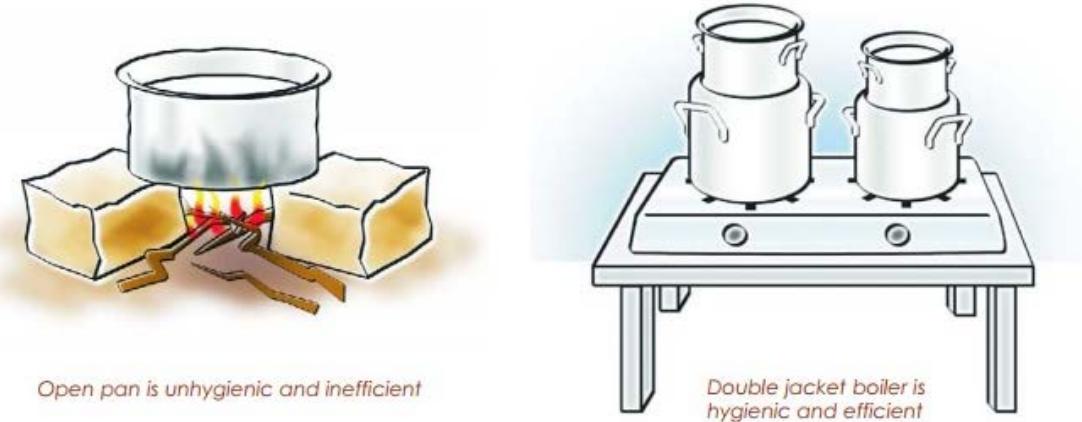
How to pasteurize milk

One way to ensure safe milk products is to have healthy animals. However, even with healthy animals, pasteurization (Table 1) is an important practice in ensuring milk safety. The target times and temperatures aim to destroy *C. burnetii*. Obviously, as temperatures increase, the time required is shortened dramatically (especially at 72°C and above).

Table 1. Time and temperatures for pasteurization of fluid milk approved by the US Food and Drug Administration.

Target temperature		Time required
° Celsius	° Fahrenheit	Seconds
63	145	1800
72	161	15.0
89	191	1.0
90	194	0.5
94	201	0.1
96	204	0.05
100	212	0.01

NOTE. Data are from US Food and Drug Administration, Center for Food Safety and Applied Nutrition. Grade "A" pasteurized milk ordinance: 2005 revision, 25 March 2005. Available at: <http://www.cfsan.fda.gov/~ear/pmo05toc.html>. Accessed 2 April 2008.



Milk boiling (Photo - ICARDA 2009)

Rule of thumb: Just bringing the milk to a brief boil is enough to pasteurize.

Reference. J.T. LeJeune^{1,2} and P.J. Rajala-Schultz Unpasteurized Milk: A Continued Public Health Threat