

---

## Advances in Dairy Research (Pasteurization)

Kumsa Dida\*

*iMedPub, Green Lane, London, UK*

\*Corresponding author: Dida K, *iMedPub, Green Lane, London, UK, E-mail: Kumsa\_d@hotmail.com*

*Received Date: February 27, 2021, Accepted Date: March 04, 2021, Published Date: March 11, 2021*

---

### Editorial

Pasteurization, a heat treatment process in certain foods and beverages that destroys pathogenic microorganisms. It is named after the French scientist Louis Pasteur, who showed that abnormal fermentation of wine and beer could be prevented by heating the drinks for a few minutes to about 57°C (135°F) in the 1860s. Pasteurization of milk, which is commonly used in many countries, including the United States, necessitates maintaining temperatures of about 63°C (145°F) for 30 minutes or, alternatively, heating to a higher temperature, 72°C (162°F), and holding for 15 seconds (and even higher temperatures for shorter periods of time). The times and temperatures are those which is to be very important to destroy the *Mycobacterium tuberculosis* and other more heat-resistant of the non-spore-forming, disease-causing microorganisms found in milk. Many of the microorganisms that cause spoilage are also killed by the procedure, thereby prolonging food storage time. Ultra-High-Temperature (UHT) pasteurization requires heating milk or cream for one or two seconds to 138°C to 150°C (280°F to 302°F). UHT milk, packaged in clean, hermetically sealed containers, can be stored for months without refrigeration. Ultra-pasteurized milk and cream must be heated for at least two seconds to at least 138°C, but they must be refrigerated due to less strict packaging. The shelf life has been raised to 60-90 days. Both UHT and ultra pasteurization products have similar spoilage times after opening compared to conventionally pasteurization products.

Pasteurization of certain solid foods entails a mild heat treatment, which varies depending on the food. In order to maximize their storage time, radiation pasteurization refers to the application of small quantities of beta or gamma rays to foods. Milk is an excellent medium for microbial growth, and when stored at ambient temperature bacteria and other pathogens soon proliferate. The US Centers for Disease Control (CDC) estimates that raw milk that is poorly treated is responsible for almost three times more hospitalizations than any other cause of foodborne disease, making it one of the most harmful food items in the world.

Pasteurization eliminates infections like tuberculosis, brucellosis, diphtheria, scarlet fever, and Q-fever, as well as dangerous bacteria like Salmonella, Listeria, Yersinia, Campylobacter, *Staphylococcus aureus*, and *Escherichia coli* O157:H7. The explanation for the prolonged shelf life of milk is pasteurization. Pasteurized High-Temperature, Short-Term (HTST) milk usually has two to three weeks of refrigerated shelf life, whereas ultra pasteurized milk can last much longer, often two to three months. It can also be kept unrefrigerated for up to 9 months when Ultra-Heat Treatment (UHT) is combined with sterile handling and container technology (such as aseptic packaging). People kept dairy cows even in urban areas before the widespread urbanization triggered by industrialization, and the short time between development and consumption decreased the disease risk of drinking raw milk. Raw milk (often days old) was identified as a source of disease as population densities grew and supply chains lengthened to the distance from country to town.

For example, between 1912 and 1937 some 65,000 people died of tuberculosis contracted from consuming milk in England and Wales alone. In the early 1900s, in Arizona, Jane H. Rider publicized the link between infant mortality and contaminated milk, and finally convinced the dairy industry to pasteurize milk. Pasteurization of milk was introduced in developing countries to prevent disease and death, and milk is now generally recognized as one of the safest foods.