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## Pasteurization

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### Why Pasteurize Milk, Juice or Cider?

The list of diseases that may be transmitted by raw or unpasteurized milk, grape juice and apple cider is overwhelming and can include:

*Salmonella*  
*Campylobacter*  
*Yersinia*  
*Brucellosis*  
*Tuberculosis (TB)*

*Shigellosis*  
*E. coli*  
*Q Fever*  
*Streptococcal Infections*

These diseases can cause severe diarrhea (which may be bloody), stomach cramps or abdominal pain, vomiting, fever, weakness and chills.

Some of these diseases are extremely dangerous to infants, young children, the elderly and those who are immunocompromised. Compromised persons may include: those who are receiving multiple steroid, antibiotic or chemotherapy treatments, transplant recipients, and other individuals with immune deficiencies.

Raw milk, juice, grape juice or apple cider that appear clean is not necessarily safe. It may be low in dirt particles, but could still contain disease causing bacteria.

Raw milk, cream, grape juice and apple cider can be rendered entirely safe for human consumption by *Pasteurization*. Effects on the nutritional value are minimal and of no consequence.

### What are the Steps in Pasteurization?

The pasteurization process consists of three essential steps:

1. Heating
2. Holding
3. Cooling Rapidly

### Equipment Needed

- Double boiler (stainless or aluminum)
- An accurate metal stem probe thermometer (cooking thermometer)
- Storage containers (litre size mason jars are suitable)

[www.publichealthgreybruce.on.ca](http://www.publichealthgreybruce.on.ca)

Provided courtesy of Health Protection, Grey Bruce Health Unit  
Offices: Owen Sound - 519-376-9420 or 1-800-263-3456  
Walkerton - 519-881-1920 or 1-800-821-7714

# — *Health & Environment Facts* —

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## **How can Pasteurization be Done at Home?**

1. Sterilize storage containers and lids by boiling in water for 10 minutes. Set aside with tops placed on loosely.
2. Place milk, juice or cider in the top part of the double boiler. Gradually raise the temperature (while stirring frequently to prevent burning) to:
  - A. 63°C (150°F) and hold at this temperature for not less than 30 minutes. Remove the skin that forms on the surface of the milk, **OR**
  - B. 72°C (162° F) and hold at this temperature for not less than 16 seconds. Remove any skin that forms on the surface.
3. To check the temperature of the milk, juice or cider, insert the thermometer into the liquid only 2/3 of the way down (do not rest it on the bottom or sides).
4. Pour milk, juice or cider into the sterilized containers. Place containers into a sink of cold water to cool for 15 minutes.
5. Place the containers in the refrigerator to cool the liquid to a temperature below 4°C (40°F) within 6 hours.

Milk is a highly perishable food and an excellent source of food for the growth of bacteria. Pasteurized whole milk should keep for up to two weeks in the refrigerator.

Do not assume store-bought juice or cider has been pasteurized. Check labels for pasteurization information.

### **Remember:**

The only truly safe milk, juice or cider is that which has been pasteurized and protected from subsequent recontamination.

Commercially pasteurized milk is a safe choice for human consumption. It has the added advantage of being fortified with Vitamins A, D, E or K.

## **Can a Microwave be used for Pasteurization?**

Microwave ovens are not recommended for home pasteurization. It is difficult to achieve the uniform distribution of heat that is required for effective pasteurization.

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## **What about Commercial Pasteurizers?**

Commercial pasteurizers are also available. These are water-jacketed units, heated electrically with thermostatic controls. When the pasteurizing cycle is completed, the pasteurizer will turn off automatically and a loud buzzer will sound which is the signal to commence cooling the product.

Advantages to using a commercial pasteurizer:

- Greater convenience
- Requires very little attention during pasteurization
- Provides greater assurance against under or over- heating the product
- Cools rapidly
- Better taste

For more information on food safety or food borne illnesses, contact your local office of the Grey Bruce Health Unit or visit our website at [www.publichealthgreybruce.on.ca](http://www.publichealthgreybruce.on.ca).