Few individuals would argue with the thought that “fresh” food generally is considered to have the highest quality. However, there are certain limits to the advisability of getting as close to the “raw” source as possible.

Since the early 1900s pasteurization has improved the safety of milk by eliminating pathogenic bacteria. Recently, pasteurization and the continued consumption of raw milk has resulted in controversy in the food safety arena. Currently, the U.S. Food and Drug Administration forbids the interstate trade of raw milk for fluid consumption and derivative products such as yogurt and ice cream. However, individual states have a variety of regulations that span from no sales of raw milk (Michigan) to allowing retail and wholesale sales on and off farm (California). Some dairy farmers, their families and employees continue to drink raw milk from their bulk tank and seem to suffer little if any detrimental effects from this practice. Modern sanitation practices on dairy farms have resulted in most farms, both large and small, producing high quality milk with bacteria counts that are even below the standards for pasteurized milk. However, cases, right here in Michigan, have demonstrated the need for caution.

“In March 2004, six individuals residing or working at a dairy farm became ill after consuming raw milk contaminated with multi-drug resistant Salmonella newport. This particular strain of S. newport matched strains in three 2001 outbreaks associated with raw milk consumption from, and/or working at, dairy farms.” – Mid-Michigan District Health Department.

Also, there are many examples of farm visitors and raw milk-consuming households getting ill after drinking raw milk offered by their hosts. One such incident was documented recently in Michigan with others available through the Centers for Disease Control and Prevention (www.cdc.gov ; Search = raw milk).

“In October 2003, six members of a church youth group became ill after consuming raw milk contaminated with Campylobacter jejuni. The raw milk was provided to the children by a parent, as part of a snack.” – Mid-Michigan District Health Department.

Make Choices Based on Accurate Information
Increasingly, raw foods groups have labeled pasteurized milk as not only less healthful than raw milk but have taken the stand that modern pasteurized milk is nothing less than a “noxious food”(1). While the stand for the freedom to make an informed personal choice to consume raw milk may be acceptable, the use of inaccurate information to spread fear about a product, pasteurized milk, that has proven to be a wholesome, health-promoting food in a balanced diet, is inappropriate. The following is an example of fact and fiction that can become mixed in the raw milk debate.

“Pasteurization kills all the enzymes in milk. In fact, the test for successful pasteurization is the complete destruction of the enzyme phosphatase” (2).

Examining the above statement utilizing current scientific literature as reviewed by P. F. Fox and P. L. H. McSweeney (3), one finds that the activity of alkaline phosphatase (ALP) is destroyed during pasteurization; however, the enzyme may be reactivated during sterilization procedures which expose the milk to even higher time/temperature combinations. Another phosphatase known as acid phosphatase (AP) retains activity in pasteurized milk. Table 1, with information about five of the approximately 60 enzymes known to exist in milk, demonstrates that all enzymes in milk are definitely “not” inactivated by pasteurization.

Raw milk contains some heat-sensitive nutrients and enzymes at higher concentrations than pasteurized milk. However, there is little credible evidence from current scientific literature to indicate a significant difference in the major nutrients of milk or any ill effects from consumption of pasteurized products (4). These small differences should be weighed against the possibility of milk-borne illness from pathogenic disease-causing bacteria. All raw milk contains some bacteria. Most of the time, raw milk will contain a mixture of bacteria that are harmless and may even develop flavor compounds and acid levels that give us products such as yogurt and cultured buttermilk. Some of these cultures may even promote health in the human gastrointestinal tract. The problem is that one cannot easily differentiate the good and the bad (pathogen) bacteria found in raw milk on a given day.

Pathogens May End Up in Raw Milk

Pathogens are found throughout the environment, and despite the best intentions and procedures at the farm they may end up in raw milk. To be fair, pasteurized milk is not pathogen proof either, and food-borne illness has resulted from consumption of pasteurized products. However, one must consider the differences in environmental conditions between a dairy farm and a dairy processing plant. At the farm, openness to the outside environment and the byproducts of animal agriculture (e.g., manure) are facts of life, while in modern dairy plants the watchwords for processors are limited access and elimination of internal and external sources of contamination. Simply, the chances of contamination with undesirable bacteria are inherently greater at even a top-notch farm.

Precautions

If after careful examination of the evidence for risks and benefits on both sides of the raw milk issue, you decide to become a raw milk consumer, there are a few precautions that should be taken.

1. Know your source. As in any vocation, there are a range of talents, ethics and abilities among raw milk producers. Visit the source farm, observe the environment and procedures, inquire about testing, get to know the producer personally, and ask for references.

2. Keep the milk below 40ºF at all times to reduce growth of potential pathogens. Some pathogens, such as Listeria monocytogenes, will grow at refrigeration temperatures so “the colder, the better.”

3. If you are picking up the milk at the farm in your own container, follow good cleaning and sanitation procedures. If the producer is a good manager, he/she will have very clear standard sanitation operating procedures (SSOP) for milk room activities. Training should be offered and the SSOPs should be posted in the milk room. You are as dependent upon your fellow raw milk consumers to keep your milk safe as they are upon you.

4. Avoid providing raw milk to pregnant women, the very young, the very old and any others that might be in a position of having a compromised immune system, such as AIDS or cancer patients. A pathogen causing a mild gastrointestinal or flu-like illness in a healthy person may be deadly to one of these individuals.

5. Never serve your raw milk to uninformed guests. If you are having company and milk is on the menu, be considerate and offer pasteurized milk as an alternative.

You may have developed some immunity to some of the bacteria that you have been exposed to while regularly consuming raw milk, however, your guests will not have the same advantage (5).

Summary

A complete discussion of risks and benefits associated with consumption of either raw or pasteurized milk is far beyond the scope of this article. Advocates on both sides of the “raw” foods movement seem sincerely interested in the health of the consumer. However, as pointed out here, the evidence may not always be clearly or completely presented. The decision to consume raw milk should not be taken lightly and carries with it the responsibility for the health of all those consuming the product based on your decision.

References


<table>
<thead>
<tr>
<th>Indigenous milk enzymes</th>
<th>Enzyme activity</th>
<th>After pasteurization</th>
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</thead>
<tbody>
<tr>
<td>Lipoprotein Lipase (LPL)</td>
<td>Hydrolyzes milkfat releasing free fatty acids</td>
<td>Inactivated</td>
</tr>
<tr>
<td>Plasmin</td>
<td>Splits casein into large peptides</td>
<td>Active</td>
</tr>
<tr>
<td>Ribonuclease</td>
<td>May have bactericidal and antiviral activity</td>
<td>Active</td>
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<tr>
<td>Lactoperoxidase</td>
<td>Bacterial activity when activated with hydrogen peroxide and added thiocyanate</td>
<td>Active</td>
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<tr>
<td>Catalase</td>
<td>Destroys hydrogen peroxide</td>
<td>&lt;50% active</td>
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