



Western Dairy News

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What's so good about raw milk?

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Farm families drink a lot of raw milk. Many say they don't like drinking milk from retail stores, and I remember I enjoyed it when I milked cows some years ago. But today there is a lot of hype about the "right" consumers have to raw milk because of its supposed health benefits and the damage that is allegedly caused by pasteurization.

Generally, the milk industry and food safety professionals try to minimize risk to markets and consumers from the occasional disease outbreak caused by bacteria in raw milk. They tout the elimination of disease-causing bacteria through pasteurization and having the "safest milk supply in the world."

On the other side, groups and individuals supporting small farms, healthful eating, and rights of consumers advocate the benefits of "real" milk. They claim unprocessed milk is healthier because pasteurization destroys nutrients and the enzymes necessary to absorb calcium, it kills beneficial bacteria, and it is associated with allergies, arthritis, and other diseases.

To a degree, both sides stretch facts . . .

So who's right? To a degree, both sides stretch the facts to make their point.

I recently had a discussion with a friend who lives in the Northeast. She and her husband have a small farm and sell raw milk to neighbors thanks to a new state law that allows sales of raw milk in small quantities. I made the comment that I have had

no problems drinking raw milk, but it is likely because I have spent most of my life around cows and manure. I went on to say that I support pasteurization of milk for most consumer sales because of the damage caused to the Oregon industry by several milk illness outbreaks in the 1980s, the liability to vendors, and the trauma to families suffering through food-borne illnesses.

She challenged me quickly by explaining what she knew about pasteurization. She believes there is a lot that changes when milk is pasteurized. According to her sources:

- Less than 10 percent of the enzymes present in raw milk survive the pasteurization process.

- 22 amino acids are available in raw milk (8 of which are essential), and lysine and tyrosine are altered by heat.

- Fatty acids are not altered by pasteurization, but lipase (an enzyme vital for fat digestion) is destroyed.

- All fat and water soluble vitamins

are 100 percent available in raw milk, while pasteurization (heat) can cause losses in vitamin availability by 30 to 60 percent.

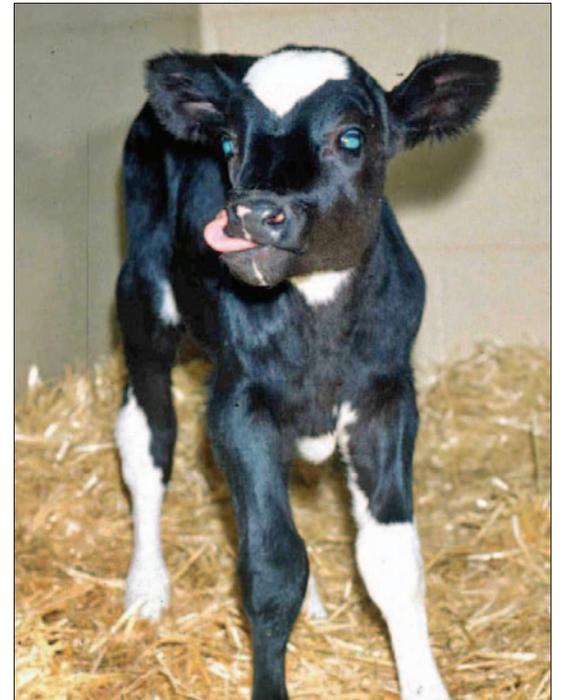
- Calcium availability can be decreased by up to 50 percent when pasteurized.

Other minerals are also less available because they work synergistically, and if one is deficient it affects the others. Also, enzymes serve as a catalyst for the assimilation of minerals.

- While pasteurization kills bad bacteria, it also kills good bacteria.

She granted that she would not buy raw milk from just any farm. She said milk

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must be high quality and cleanly produced from cows reared in a comfortable, grass-based environment – or a high forage diet when on stored feeds.

This sort of set me back, so I decided to look into what authorities might say about the effects of pasteurization on milk.

First, I found a little history of Louis Pasteur and pasteurizing America's milk that I thought was interesting:

1856 – As a young professor Pasteur sought to prove a theory he had that spoilage in French wines was due bacteria from the environment and not from the bugs appearing magically through "spontaneous generation." He eventually proved his theory by controlling the bacteria using heating and cooling.

1890 – Tuberculosis testing of cows began in the U.S. to control the food-borne spread of that

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Raw milk . . .

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disease.

1895 – The first commercial pasteurization machines were sold; the same year Louis Pasteur died.

1908 – Pasteurization became compulsory in the Chicago market.

1924 – The Food and Drug Administration, then a new agency, formed a group to help advise states on regulations and to promote milk pasteurization. That group later became the basis for the Pasteurized Milk Ordinance (PMO), which governs interstate milk production and processing today.

1938 – The equivalent of the Centers for Disease Control estimated 25 percent of food-borne illness was caused by milk and dairy products. Today, about one percent of reported cases are traced to dairy.

1948 – Michigan became the first state to require pasteurization of all milk – over 50 years after pasteurizers became available.

The Food and Drug Administration has some strong words about the new health food drive for drinking raw milk. According to John Sheehan, director of the Division of Dairy and Egg Safety, drinking raw milk or eating raw milk products is “like playing Russian roulette with your health. We see a number of cases of food-borne illness every year related to the consumption of raw milk.”

No significant nutritional difference . . .

According to Sheehan, research has shown there is no significant difference in the nutritional value of pasteurized and unpasteurized milk. Caseins, the major family of milk proteins, are largely unaffected, and any modification in whey protein that might occur is barely perceptible. It occurred to me as odd that raw milk drinkers largely oppose the use of rBST, a milk protein hormone, yet claim that pasteurization alters all the proteins in milk.

“Milk is a good source of thiamine, folate, B-12, and riboflavin,” adds Sheehan, “and pasteurization results in losses of anywhere from zero to 10 percent for each of these vitamins, which most would consider only a marginal reduction.”

Many of these vitamins continue to oxidize in raw and processed milk. Pull-date milk will have little or no vitamin C left regardless of processing. Vitamin D, which enhances the body’s absorption of calcium, is not found in significant levels in raw milk so it is added to processed milk. Other fat-soluble vitamins and minerals, like calcium, are unaffected by pasteurization temperatures.

“Pasteurization will destroy some enzymes,” says Barbara Ingham, Ph.D., associate professor and Extension food scientist at the University of Wisconsin-Madison. “But some of the enzymes that are destroyed, like lipase, hasten rancidity in milk if not treated.”

She went on to explain that lipase works to break the fat globules in milk, but has no effect on how they are broken down and ab-

sorbed in our bodies. “Most of the native enzymes of milk survive pasteurization largely intact,” says Sheehan, “including those thought to have natural antimicrobial properties and those that contribute to prolonging milk’s shelf life.”

Other enzymes that survive are thought to play a role in cheese ripening. However, Ingham cautions that, “Enzymes in the food we eat and drink are broken down in the human gastrointestinal tract. We rely on our own native enzymes to digest and metabolize food.”

Ingham says pasteurization will destroy some bacteria that may be helpful in the fermentation of milk into products such as cheese and yogurt, “but the benefit of destroying the harmful bacteria vastly outweighs the supposed benefits of retaining

Pasteurization is not the whole story to milk safety. At least half of the illnesses attributed to dairy products come from post-processing contamination where pathogens get into the milk or dairy product after the heating and cooling cycle.

those helpful microorganisms. Plus, by adding the microorganisms that we need for fermentation, we can assure a consistently high quality product.”

Science has not shown a connection between drinking raw milk and disease prevention. “The small quantities of antibodies in milk are not absorbed in the human intestinal tract,” says Ingham. “And there is no scientific evidence that raw milk contains an anti-arthritis factor or that it enhances resistance to other diseases.”

Fans of raw milk often cite its creamy rich taste. In fact it may be creamier because it is not made according to the standards for processed milk. If you go to a grocery store and buy fluid milk, it’s been standardized for a certain percentage of fat, such as 2 percent. Raw milk is potentially creamier because it has not been standardized and has a higher fat content.

It is a violation of federal law enforced by the FDA to sell raw milk packaged for consumer use across state lines (interstate

commerce). But each state regulates the sale of raw milk within the state (intrastate), and 24 states allow it to be sold. This means that in some states dairy operations may sell it to local retail food stores, to consumers directly from the farm, or at agricultural fairs or other community events, depending on the state law.

In states that prohibit intrastate sales of raw milk, some people have tried to circumvent the law by “cow sharing” or “cow leasing.” They pay a fee to a dairy producer to lease or purchase part of a cow in exchange for raw milk, claiming that they are not actually buying the milk since they are part owners of the cow.

Wisconsin banned cow-leasing programs after 75 people became infected with *Campylobacter jejuni* bacteria in 2001 from drinking unpasteurized milk obtained through such a program. Washington had an outbreak in 2005 from a share dairy. Some of the “partners” recovered damages from the farm owner.

But pasteurization is not the whole story to milk safety. At least half of the illnesses attributed to dairy products come from post-processing contamination where pathogens get into the milk or dairy product after the heating and cooling cycle. Pasteurized or not, milk must be handled carefully to protect it from bacteria still in our environment. Like my friend in the Northeast said, raw milk should come from clean, well-managed farms and be handled like a precious commodity. That’s good advice for either side of this controversial fence.

Remember the risks . . .

For a producer thinking of selling raw milk, remember the risks. Food-borne illness is covered by strict liability laws. This means if someone gets sick and proves the illness came from your milk, you will pay. Warning labels, signed liability waivers, and selling only to best friends doesn’t matter to the court.

Human illness reaps big bucks as you can see from the growing list of new law firms pursuing and defending large food litigation cases. I spoke to a large farm insurance underwriter and he said their insurance suppliers limit coverage to dairy producers or processors who follow state law and the PMO.

Some farm families have begun pasteurizing their drinking milk or started buying retail milk, but there are many still drinking milk right from the bulk tank. Can one become resistant to these disease bugs by being exposed to a few all the time? No one is advocating that yet, but research continues on whether we “live too clean a life.”

This is an era of consumer choice. We have a wide array food and consumer goods to enjoy. Not many will argue against the opportunity to choose the goods we like to consume. Raw milk might be one of those products.

As a consumer, we also have the responsibility to judge these products as we perceive them and to accept the consequences personally. Unfortunately, when a family member becomes ill, few are willing to blame themselves.

Western Dairy News is published as a service to people interested in the health and welfare of the Western dairy industry. Archives of this publication may be found at:

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