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A Mom and a Dairyman Plead: Don't Feed Children Raw Milk

Kylee Young was a healthy two-year-old when she contracted an E. coli infection from drinking raw milk, an illness that caused a stroke and culminated in a kidney transplanted from her mom.

By Cookson Beecher | February 18, 2014

Two years ago, when Oregon parents Jill Brown and Jason Young met Brad and Tricia Salyers, the families had no idea that they would eventually be sharing in a tragedy that sickened four of the Salyers' children and left Brown and Young's youngest child, Kylee – 23 months old at the time – with such severe medical complications that she would need a kidney transplant from her mother.

All of that and more happened beginning in April 2012 when the children were among 19 people – 15 of them under the age of 19 — who fell ill with E. coli O157:H7, a potentially fatal foodborne pathogen. Soon after, Oregon health officials determined that the outbreak was caused by raw milk from Foundation Farm near Wilsonville in Western Oregon — the Salyers' family farm. Four of the sickened children were hospitalized with kidney failure.

Foundation Farm had been providing 48 families with raw milk. Raw milk is milk that hasn't been pasteurized to kill harmful and sometimes deadly foodborne pathogens such as E. coli, Listeria, Salmonella and Campylobacter.

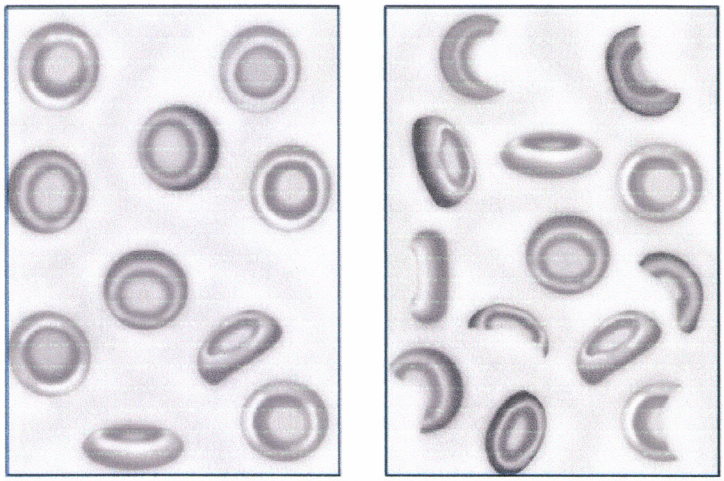
While many raw milk advocates say it has inherent nutritional advantages and even helps cure or ease the symptoms of ailments such as asthma and various allergies, most food-safety experts discount those claims as anecdotal, saying they're not based on science. They also warn of the serious risks to human health associated with drinking milk that hasn't been pasteurized.

The symptoms of E. coli O157:H7 infection typically include bloody diarrhea and other digestive-tract problems. In some people, this type of E. coli may also cause severe anemia or hemolytic uremic syndrome (HUS), a complication in which toxins destroy red blood cells, which are typically smooth and round. The misshapen or deformed blood cells can clog the tiny blood vessels in the kidneys, causing them to fail.

Statistics from the Centers for Disease Control and Prevention (CDC) underscore the potential dangers of raw milk. According to the agency, between 1998 and 2011, 148 outbreaks due to consumption of raw milk or raw milk products were reported. In those outbreaks, there were 2,384 illnesses, 284 hospitalizations and two deaths. Estimates from the agency put raw milk consumption at 3 percent of total milk consumption.

Currently, 29 states allow some form of on- or off-farm raw milk sales, but only a few allow sales in grocery stores. In Oregon, it is against the law to sell raw cow's milk, although there is an exemption for very small herds (no more than three cows on the premises, with no more than two of them being milked). Under that exemption, the milk must be sold on the farm and no advertising of the product is allowed. CDC has documented fewer illnesses and outbreaks from raw milk in states that prohibit sales.

Goals in common



Healthy red blood cells (left) are smooth and round, while blood cells damaged by E. coli toxins are misshapen and may clog the blood vessels in the kidney, causing HUS.

The irony of this story is that the two families shared a common goal to provide their children with nutritious food. Now they share another goal: to warn people that raw milk can be dangerous to drink, or even deadly. As parents, they want to let other parents know that they shouldn't feed raw milk to their children, no matter what some raw-milk farmers and advocacy organizations might say.

"There might be some benefits of raw milk, but there are huge risks," Jill Brown, Kylee's mother, told **Food Safety News**. "There needs to be more public awareness that this is a high-risk food. If I had known what I know now, I would never have fed it to my daughter."

Despite formerly selling raw milk, the Salyers agree.

"The people who bought our milk thought it was the healthiest choice for their kids," said Brad Salyers, co-owner of Foundation Farm. "But I see things differently now. By far, it's the most dangerous food you can feed them because of the chance it can be contaminated with E. coli or other harmful pathogens."

Knowing he fed raw milk to his children, Salyers' thoughts on the topic now veer into the emotional:

"It breaks my heart that anyone would give it to their children," he said. "What's even more troubling is that some of our friends who saw what our kids went through are still feeding raw milk to their children."

Salyers rankles at what he says is the proliferation of too much misinformation about raw milk's purported health benefits.

"It's duping people into thinking you can safely drink raw milk," he said.

The worst part of this, he added, is that children are especially vulnerable to contracting E. coli or other pathogens from raw milk, primarily because their immune systems are still developing.

According to a recently released statement from the American Academy of Pediatrics, the health claims related to drinking raw milk have not been verified by scientific evidence, and, therefore, do not outweigh the potential health risks that raw milk poses to pregnant women and children.

"Children depend on their parents," Salyers said. "They don't make the decision to drink or not to drink raw milk. They're at the mercy of their caretakers."

"We definitely want to get the word out about the dangers of raw milk," Tricia Salyers said.

Sold their cows

Once the Salyers saw what Brad Salyers refers to as the "devastation that HUS can cause in children," they immediately sold their cows.

"We didn't want to put kids at risk," Salyers said, pointing out that four of his family's five children came down with E. coli, with one of the four developing HUS.

"She fought for her life for 27 days," he said.

He objects to conspiracy theories that paint the government and food-safety scientists as "the enemy" when it comes to restrictive raw milk laws and the information they provide to customers (and farmers) about the potential dangers of raw milk.

"They're so cynical that they can't see straight," said Salyers. "They put their trust in some organizations with myopic agendas — places that glorify raw milk as 'miracle' food. That's nonsense. It's based on a lot of misinformation."

So why do people ignore warnings about the potential dangers of raw milk? According to a 2011 study that looked at what motivated people in Michigan to drink raw milk, cynicism about government surfaced. The study's authors told **Food Safety News** that they were surprised to find that only a small percentage of those surveyed trusted public health officials regarding which foods are safe to eat or drink.

The survey respondents also took issue with some of the survey's other statements, once again revealing sharp differences of opinion with official government views on the potential health hazards of drinking raw milk. For example, when asked if they agreed or disagreed with the statement that, "Drinking raw milk increases your risk of getting a foodborne disease," an average of 44 (or 78.6 percent) disagreed. Only six respondents agreed with the statement, and another five (or 8.9 percent) respondents said they weren't sure.

As for those who think that "knowing your farmer" is safeguard enough, even raw-milk dairies with high sanitation standards and licensed and inspected by states that allow raw milk sales – California and Washington state are two of these – have been subject to recalls due to the presence of pathogens such as E. coli and Campylobacter in their milk. Those recalls are typically triggered by foodborne-illness outbreaks that have sickened people.

According to CDC, while adherence to good hygienic practices during milking can reduce contamination, it cannot eliminate it.

"The dairy farm environment is a reservoir for illness-causing germs," CDC says. "No matter what precautions farmers take, and even if their raw milk tests come back negative, they cannot guarantee that their milk, or the products made from their milk, are free of harmful germs."

Logistics come into the picture here. There's no way to test every part of every batch of milk 365 days a year. While testing will provide important clues about whether things are being done right, it doesn't ensure that all of the milk a farm produces will be safe.

Or, as Dr. Tim Jones, epidemiologist with the Tennessee Department of Health, puts it: "Those who consume raw milk are playing Russian roulette with their health; the glass they drink today may not have deadly microorganisms, but the one they drink tomorrow may cause serious health problems or even death."

Germs such as E.coli, Campylobacter and Salmonella can contaminate milk during the process of milking dairy animals, including cows, sheep and goats. Animals that carry these germs usually appear healthy.

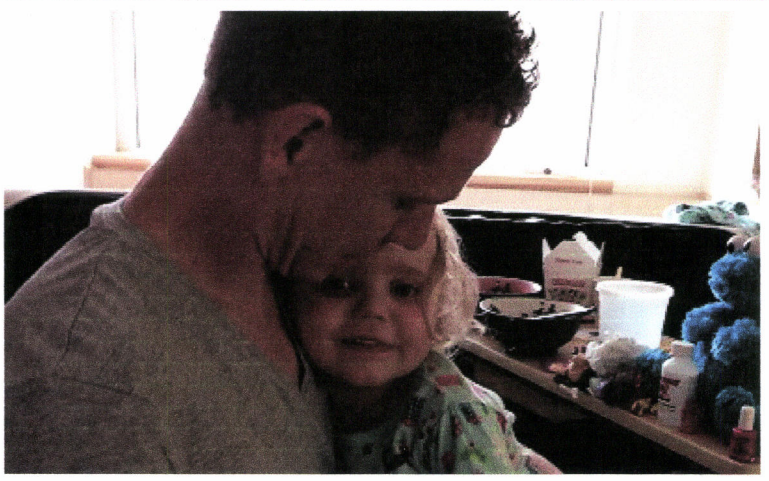
Brad Salyers said that a health official who visited his farm after the outbreak told him that it's not just about making sure the cow's udder is clean. Contamination could

occur from something as simple as one drop of rain containing some E. coli O157:H7 bacteria picked up from the cow's hide trickling down the side of the cow. Not only are these germs extremely tiny, it takes only one or two of them to replicate inside the milk and make someone sick. And, unlike earlier strains of E. coli, this toxin-releasing strain, which wasn't identified as a cause of human illness until the 1980s, is far more virulent.

This chronology can confuse people. They don't understand how their grandparents who drank raw milk all of their lives never got sick from E. coli. But scientists believe E. coli didn't pick up the genes that cause human illness until late last century. Now that this disease-causing strain of the bacterium is commonly found in most cowherds, people can, and do, become ill from drinking contaminated milk.

Even more confusing for some is that cows that have this strain of E. coli in their systems generally don't show any signs of being infected with it. Then, too, it can come and go on a farm. It can be present in some of the cows or in water tanks or the soil for awhile and then disappear from one or all of these possible "harboring" places, only to return again.

What happened?



Like most mothers, Jill Brown wanted to feed her family the best food possible. For her, that meant growing a garden, buying as much food as she could from local farmers, and eventually buying raw milk for her toddler, who was an avid milk drinker.

Her quest to find raw milk was in large part triggered by her desire to steer clear of "industrial agriculture" and buy from a local farm instead. She saw it as a good fit with the philosophy of the "local food movement," which her family and many of their friends embrace.

"I wanted to know where the milk I was buying was coming from," she said. "My research led me to believe that raw milk from a local farm would be healthier than the milk I bought at the store."

After finding Foundation Farm through an Internet search, Brown became a herd-share member. Under a herd-share arrangement, people can buy a share of the herd, or even an individual cow, with the understanding that they are not customers of the dairy but rather owners of the herd and the milk produced by the herd. Some refer to this arrangement as a "legal loophole." In Oregon, herd shares have not been challenged in court, according to information from the state's agriculture department.

Foundation Farm was providing raw milk to 48 households under a herd-share arrangement. On the legal front, the families couldn't sue the Salyers after the outbreak because the Salyers didn't have insurance, and they were leasing the land where they were farming. In short, they had no assets that could be taken and sold to raise money for the aggrieved families.

While it was a commitment to go to the farm once a week to get the milk, Brown believed it was well worth it, despite the inconvenience and additional cost.

"It felt good to know that we were getting 'real, actual milk,'" she said. "[The Salyers] seemed to be doing everything right."

In talking with them, she had learned that, before setting up a herd share, they had visited other raw-milk dairies and had improved on what they saw.

Even though, for the most part, no one in her family except Kylee drank milk, the toddler loved it and thrived on the raw milk from Foundation Farm. But it was short-lived. Brown said that Kylee probably only drank it for three months before things went wrong.

"It was pretty sudden," Brown said. "We went to the farm to get some milk on Friday, the last day of spring break."

The following Wednesday, Kylee was sick, an "exploding diaper" the first sign of problems to come. On Friday, her dad stayed home with her and took her to the pediatrician, who said she had a stomach bug.

By Saturday, she couldn't keep food down and was becoming dehydrated. They took her to the emergency room, where she was put on an IV, with oral rehydration administered every 10 minutes.

They chose to take her home that night, and, on Sunday, she was starting to feel better. But, on Monday night, they were called back to the hospital.

When Brown stood Kylee up, she was dismayed to see her walking backward, apparently disoriented. She rushed Kylee to the emergency room and was told that her kidneys had shut down. Kylee was admitted to the pediatric intensive care unit, and, the next day, she received the necessary set-up lines to start dialysis.

"That's when our whole life changed," Brown said. "From there, every step of the way, things got worse and worse. Each day brought more bad news."

Kylee developed edema, was having a hard time breathing, and her eyes were crossing.

"She had had a stroke," said Brown.

Once a happy, energetic toddler, Kylee now couldn't walk or say words, although for the first couple of days she did say "mama," "papa," and "no."

Even though test results from a stool sample submitted on Monday were not back yet, Kylee was diagnosed with HUS.

Brown went to work researching the medical problem.

"When you're Googling 'bloody stool or vomiting,' one of the top things that comes up is raw milk," she said.

Several days after Kylee had been admitted to the hospital, another child with E. coli was admitted. By April 21, a total of 19 people were confirmed ill with E. coli traced to raw milk from Foundation Farm. Of those, 15 were under the age of 19. Four of the Salyers' five children were among those ill, with one of them among four children suffering from HUS.

It's Not Your Grandfather's E. coli

Many farmers and old-timers believe that E. coli illness outbreaks are caused by the "over-pampered" immune systems of city and suburban dwellers.

"We drank raw milk all of the time and never got sick," they'll say.

Kylee was on a ventilator, but she wasn't getting better. Before long, the other children who had been hospitalized were talking about going home. But that wasn't in store for Kylee.

The lab results came back and showed that her bowels were necrotic and that she needed surgery. Her heart stopped while she was in surgery and she had to be brought back to life.

"That was probably the hardest part," said Brown.

But then suddenly, Kylee started doing much better. They took her off of dialysis in early June. She had been on dialysis for eight weeks.

Or: "No one we knew ever got E. coli."

But the potentially fatal form of E. coli that's causing the outbreaks today weren't around 35 years ago.

As explained in simple layman's terms by microbiology food scientist Karen Killinger of Washington State University, what led to "the birth" of E. coli O157:H7 was a disease-causing form of E. coli that absorbed some genes from another pathogen to produce a virulent toxin and adjust to acidic environments. The new form of pathogenic E. coli that emerged was many times more virulent than its weaker cousins.

After five weeks of rehab in the hospital, Kylee could go home, and Brown started going to work two days a week. November and December were good months. Kylee was getting stronger and sitting up on her own.

But then in January, lab tests came back that didn't look good. By February, the toddler had to go to the dialysis center in the hospital three times a week for three hours a day. She was also admitted frequently throughout 2013 for multiple staph infections and other issues related to her kidneys.

Brown quit her job in May to stay home, finding it too hard to manage a household with two other children and be at the hospital for Kylee. In the meantime, Kylee struggled. Being on dialysis, she had only 15 percent kidney function and didn't have the energy for weekly physical therapy sessions.

The doctors decided that the toddler needed a kidney transplant. Brown and Young started the donor "work up" for a kidney transplant in June and July and were scheduled for the transplant on Sept. 9.

"She'll get 120 percent of her kidney function from this," Brown told **Food Safety News** several days before the surgery. "The hope is that she'll feel better and have the energy for therapy."

Kylee's father Jason Young told videographer Terry Tainter that when they realized that their toddler was going to need a kidney transplant, the word "now" took on new meaning.

"One of the biggest things that went through my mind at that point is that this is now," he said. "This is now a lifelong thing. There is no full recovery from this anymore. And there never will be. It's always going to have to be someone else's organ that keeps her alive."

People who have kidney transplants often have to have another in future years, something that both Brown and Young know.

All in all, the little girl has spent close to 200 days in the hospital since she was admitted in April 2012, with her mother by her side much of the time. The good news is that, as of mid-February 2014, the last time she had to be hospitalized was September 2013.

Before the transplant surgery, Tricia Salyers started a fundraiser. After the operation, she let Facebook readers know that Kylee was making "HUGE" strides forward in her recovery.

"What a miracle this transplant has been," she said, adding that all sorts of bills have been coming in from, among them, the insurance company, the hospital, and pharmacies. Salyers said that the $7,500 fundraising goal would get Brown and Young through the end of the year and pay off current medical debts.

On Jan. 26, Brown was happy to report that the goal was met, although medical bills will burden the family for years to come.

Through all of this, Brown and Tricia Salyers became friends.

"I'm so glad I chose to move on and forgive," Brown said. "It's so easy to blame the farmer. But they were just as much blindsided as we were. They fed all of their kids the milk. I do believe they thought they were doing things right."

Kylee will continue to need physical therapy and speech therapy for a long time, only part of which insurance will cover. But the family recently received some good news. The Wheel to Walk Foundation has approved Kylee for a grant to help cover the cost of her intensive therapy that insurance doesn't cover. Even so, there are still a lot of

uncovered expenses, including medical equipment and medications such as immunosuppressants to prevent her system from rejecting her mother's kidney.

Although Kylee is for the most part stable medically, she still can't speak words, can't walk, uses a special table to stand, and eats through a special tube. Because she understands what's going on around her, she experiences a lot of frustration in not being able to express her thoughts and feelings in words.

With limited insurance and no chance of getting a settlement to help pay the bills, and with their two-story house no longer suitable for a child with Kylee's disabilities, Brown and Young have had to sell their home. The sale is expected to close in mid-March.

In another unforeseen bond tying the two families together, Tricia Salyers, who went into real estate after she and her husband sold the cows, handled the sale of Brown and Young's home.

The farmer's perspective

"We were foodie-type people," said Brad Salyers. "We felt the food system in this country was messed up. We were trying to get back to basics."

That led them to information that extolled the benefits of raw milk from grass-fed cows.

"We believed all the hype about its benefits," he said.

They started buying raw milk from a farm but eventually decided to buy their own cow, thinking they could improve on what they saw at the farm. Once they had their own cow, they quickly realized they were going to have a surplus of milk. Thinking that they could find people who would want it, the Salyers visited other farmers known for their dedication to cleanliness and learned from them.

"I felt I had enough information to put the necessary safeguards into place," Brad Salyers said. "I'm not one to take shortcuts or wing it."

Once they started making their raw milk available, demand grew and soon there was a waiting list.

"It snowballed," he said. "We got more cows. Before long, we had five and were milking three."

Now when he hears people talk about the safety of raw milk from grass-fed cows, he warns them not to jump to conclusions.

"Cows aren't like horses," he said. "Cows like to lie down a lot. Their udders and hides can be in manure. It's dangerous because that's where E. coli can be."

But he said he also thinks there can also be problems with an imbalance of nutrients and bacteria in their digestive system. He thinks that's what happened when he switched the cows from dry forage to pasture too quickly.

He called the vet because one of his cows wasn't acting quite right. When the vet came, he found an improper pH balance in the urine. He told Salyers he was pretty sure he'd find some bacteria.

David Smith, a veterinarian and professor at Mississippi State University College of Veterinary Science, told **Food Safety News** that it's possible that the switch in diet resulted in the cows' shedding E. coli O157:H7 in their manure, but he also said the diet change "did not make it appear out of nowhere."

"It was on the farm," he said, pointing out that this strain of E. coli is common to all beef and dairy herds and that it should be assumed that it is present in some cattle on all cattle farms.

It was while the vet was there that Tricia Salyers came out to the barn and told her husband that the doctors at the hospital had confirmed that Kylee was ill with E. coli O157:H7.

When Salyers walked back into the house, the phone was ringing. It was a state official asking him if they had informed their customers about the problem. Tricia, meanwhile, had already e-mailed their customers the information.

"It was the scariest time of our lives," he said.

Why did they do it?

"I blamed myself for the longest time," Brown said about the devastating effects raw milk had on her daughter. "But I know that I'm an amazing mom who was trying to do the best for my family."

When doing research on raw milk, she discovered that "it's a two-edged topic with no middle ground between. On one side are government and dairy industry representatives pointing to the inherent risks of raw milk. On the other hand are the raw-milk advocates who fervently believe that locally grown and produced foods, including raw milk, are healthier than foods produced on what they refer to as 'industrialized farms.'

"I do follow their philosophies about local foods, and since raw milk was part of what they believed in, I went along with it," Brown said.

The fact that she did still baffles her, especially since she considers herself to be levelheaded. She was on debate teams in high school and college and knows how important it is to gather objective information and not to be swayed by emotion.

"Debate is all about being well-researched," she said. "You learn to look at every side. That's why I get so frustrated about what I did. I know now that different choices could have been made."

It discourages her that despite continuing news about E. coli outbreaks caused by raw milk, so much of the information spread about raw milk praises its health benefits.

The Weston A. Price Foundation is a good example of one such information source. Its website shows a happy, healthy-looking family with this headline above the photo: "They're happy because they eat butter." Under the picture is some more information: "They also eat plenty of raw milk, cheese, eggs, liver, meat, cod liver oil, seafood, and other nutrient-dense foods that have nourished generations of healthy people worldwide."

Brown doesn't think that raw-milk dairy farmers are dishonest or "sleazy," and she thinks that they're trying to offer the community what they believe is a "valuable resource."

"But many of them are not educated enough," she said. "Our farmer didn't know the risk. I do believe that they thought they were doing it right."

Like Brown, Brad Salyers also has misgivings about his experience with raw milk. Describing himself as a Christian, he said he trusted in the Lord to help him deal with what he describes as "the guilt and shame that was mentally devastating."

"I had to believe that in my heart I was making the best decision for my children with the information I had," he said.

Salyers said he would like to see farmers be more educated about raw milk. As a contractor, he had to take classes to get his license, and he believes something similar should be put in place for raw-milk producers.

He also believes that raw-milk producers should be required to carry liability insurance.

"It's just part of running a business," he said. "I don't see why a farmer producing such a potentially dangerous product shouldn't have to have insurance."

In retrospect, he said he wouldn't hesitate to support legislation that would safeguard children from raw milk, even though he knows it goes against the principle of "freedom of choice."

"It's just too dangerous for the children," he said.

What about locally produced, 'gently pasteurized' milk?

Buying milk from a local farm conjures up scenes of contented cows grazing on lush green pastures, complete with a farm family dedicated to the health of the cows and the quality of the milk.

For the most part, but not always, this is "raw-milk country"— small-scale dairy farmers who can sell their milk at higher prices than milk sold in the stores. Those higher prices are based in part on the higher expenses that come with producing milk on such a small scale but also on the willingness of raw-milk customers to spend more money for what they consider to be a premium product.

Raw-milk farmers and raw-milk customers alike extoll this business model, saying it helps keep family-scale dairy farmers in business instead of being pushed off the map

by ever-expanding dairy operations that depend on what's referred to as "efficiency of scale" to stay in business.

"It used to be that the only alternative to conventional mass-produced milk was raw milk," said Steve Judge, founder of Bob-White Systems and developer of the LiLi (Low Input-Low Impact) Pasteurizer. "But our goal is to give people the choice of either raw milk or farm-fresh 'gently' pasteurized milk."

The LiLi pasteurizes the milk without homogenizing, separating or standardizing its nutritional value and farm-fresh flavor, according to the company's website.

Judge said that in designing the LiLi Pasteurizer, he wanted a small machine that would allow small-scale farms to sell farm-fresh pasteurized milk direct to consumers.

With the LiLi Pasteurizer, the milk gets heated to 163 degrees F and held at that temperature for 15 seconds, after which it is immediately cooled to less than 60 degrees F. After the milk is pasteurized, it's sent to a cooling tank where it can be cooled to 38 degrees F in less than an hour. This allows for a pasteurization speed of two gallons a minute.

"I believe that the minimal damage done to milk by properly done, high-temperature, short-time pasteurization is a worthwhile compromise if it also expands the availability of locally produced farm fresh milk," he said.

Although the LiLi can work for small dairies of four to 10 cows, Judge said it could handle milk from up to 100 cows. Bottom line, he said, "Anywhere you grow grass, you can do this." Better yet, it meets all state and federal regulations.

While raw-milk proponents say that pasteurization kills many of the healthful components such as vitamins and enzymes, Judge said that he sent samples of raw milk and milk pasteurized with the LiLi to a food-safety lab for a comparison of 50 different nutrients. While there was a drop in lactic acid colonies and a slight drop in Vitamin B-12 in the pasteurized sample, other vitamins did just fine, including vitamins C and D.

"There was minimal damage," he said.

That pretty much lines up with a recent rundown of a nutrient comparison between raw and pasteurized milk provided by the Purdue University Extension.

As for flavor, Judge said that one taste of milk pasteurized with the LiLi would convince anyone that it's indistinguishable from raw milk. "It has a bright, clean, fresh flavor," he said.

Other farms offer vat, or batch, pasteurized milk, which they also describe as "gently pasteurized." In this method, the milk is heated to 145 degrees F and held at that temperature for 30 minutes and then cooled as quickly as possible. Proponents of this method also say that it provides a good option to raw milk.

In contrast, said Judge, most conventional milk bottlers use a method that heats milk to 170 degrees F and holds it at that temperature for no less than 15 seconds. Proponents of this method say that it destroys most bacterial pathogens, while largely protecting milk proteins from degradation.

"Ultra-pasteurized" refers to milk heated to at least 280°F for not less than two seconds.

Unfortunately, said Judge, as of yet, there is no association of dairy farms that produce "gently pasteurized milk," although an Internet search will yield some farms in various locations that do.

Of course, for those whose main reason for buying raw milk is that they want to support local farms, there's always the option of pasteurizing the milk at home.

What about those allergies?

Many parents who buy raw milk for their children do so because their children have allergic reactions to pasteurized milk. Many say that their children do better on raw milk. Some go so far as to say that raw milk can cure allergies, eczema, asthma and other ailments.

Like other raw-milk farmers, Brad Salyers said that many of his customers had children with allergies.

It's not surprising that milk comes into the picture. According to the U.S. Food and Drug Administration (FDA), milk is at the top of the list of the eight major food allergens that account for 90 percent of food-allergic reactions.

And, even though most food allergies cause relatively mild and minor symptoms, some food allergies can cause severe reactions and may even be life-threatening, says FDA.

Also, according to the agency's site, there is no cure for food allergies. And the agency recommends strict avoidance of food allergens and early recognition and management of allergic reactions to food.

Following this line of thinking, Mike Tringale, an official with the Asthma and Allergic Foundation of America, told **Food Safety News** that raw milk isn't a cure for an allergy to pasteurized milk.

"The milk protein in pasteurized milk is in raw milk, too, so anyone with a milk allergy would still be affected," he said. "Allergies in general are caused by a chronic disease of the immune system, and it's genetic – you inherit a hypersensitive immune system."

Interestingly enough, though, people don't inherit specific allergies. For example, a person's mother can be allergic to cats and the dad to dogs, yet the child can develop an allergy to peanuts, or other triggers.

Tringale describes allergies as "what happens when a person's body misinterprets the foods or pollens in his or her environment."

Speaking specifically about milk, he said that pasteurized or raw milk doesn't eliminate the allergenic protein in milk, which is what makes milk white.

He discounts assumptions such as the idea that getting back to simple agrarian life makes the body more defensive against allergies, calling them "old wives' tales."

He does say, however, that some research is turning up evidence that babies raised on farms or with cats and dogs may have a lower prevalence of allergies later in life.

"But the jury is still out on that," he said.

But when it comes to raw milk, he pointed out that it is not going to change your immune system.

"The thought that this can cure allergies is actually a dangerous thought," he said.

As for doing "their homework" on milk allergies, Tringale said that parents need to work with their doctor to make sure they're on the right path. If they don't do that, they haven't done their homework.

And, when all is said and done, it doesn't come down to deciding in favor of either pasteurized or raw milk.

"The real question is, 'How do I supply nutrition for my children if I can't feed them milk?'" he said.

Fortunately, said Tringale, this doesn't have to be hard – at least if a child has only one or two allergies. There are ways to make sure that children have nutritious diets. He recommends an interactive website, kidswithfoodallergies.org, which allows parents of kids with allergies to talk with one another for support, to find recipes and share ideas.

However, parents with children who have more than one or two allergies need to work with a nutritionist to make sure their children are getting all of the necessary nutrients.

"Getting as close to good health as possible is what people should be aiming for," he said. "It's important that in trying to do that, they're not making poor choices."

Updates on Kylee's progress can be found on her Facebook page.

***Food Safety News** will feature a video interview with Kylee's parents on Wednesday, February 19.*

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