

Show Transcript
Deconstructing Dinner
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Title: Deceivable Dairy I

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Transcript – Jane Logan

Jon Steinman: And welcome once again to Deconstructing Dinner, a syndicated weekly one-hour program produced in Nelson, British Columbia at Kootenay Co-op Radio. I'm Jon Steinman.

Today's broadcast is titled, *Deceivable Dairy*, which as you can probably gather indicates that for the next one hour, we will explore the world of dairy here in Canada. But as this broadcast was researched and prepared, there was a very confident decision made to turn this one hour broadcast into a two-part series that will continue in the coming weeks. There was such a wealth of information gathered for this broadcast that it would be a shame to not share it all with you.

For most Canadians, dairy products are perhaps a staple of almost every meal, whether they be the main course or simply an ingredient making its way into a midday snack. Whether it be milk, cream, butter, yogurt, or ice cream, chances are unless you're a vegan, you're eating plenty of dairy.

Outside of aggressive advertising campaigns, dairy rarely gets a chance to be explored throughout the media, most certainly a result of how easily we as Canadians take this mainstay of our diet for granted. But dairy has been the centre of attention in recent months, following an incident that saw roughly 20 provincial officers raid a dairy farm in southwestern Ontario on November 21st, 2006. It seems terrorist farmers may be among us. Or are they? Using this event as an impetus for this broadcast, we will further explore this recently revived debate between raw and pasteurized milk. But moving beyond this hot topic, we will also explore another issue that is integral to the dairy industry, and that is the food that is fed to cows. As grains such as corn are the staple of the dairy cow's diet, the traditional pasture upon which cows are more naturally accustomed to, seems to be becoming an endangered practice. But there are significant environmental, health, and economic benefits of raising cows on pasture, and we will dive into that topic during this broadcast as well.

But while the media focus remains more on the health concerns of raw versus pasteurized milk, there is of course the health and well-being of the very animals that provide us with this milk. In many cases it seems that the innocent dairy cow has become more of a milk machine than a living and breathing creature, and to add to any new discoveries that may come out of this broadcast, I for one, never realized that veal is a byproduct of a glass of milk.

And to explore these topics and more we will hear from Sally Fallon, the President of the Washington, D.C.-based Weston A. Price Foundation and their Real Milk campaign, Dr. Alan Fredeen, a professor of Plant and Animal Science at the Nova Scotia Agricultural College in Truro, and we will hear from Ric Llewellyn of Jerseyland Organics, located in Grand Forks, British Columbia.

increase music and fade out

For those listeners just catching the beginning of this broadcast and fear perhaps not being able to make it through the next hour, don't forget that this broadcast will be archived onto our website at cjly.net/deconstructingdinner, where a wealth of information on my guests and the topics covered will also be listed.

The title of today's broadcast is Deceivable Dairy. So why such a title? Why is dairy suggested to be deceiving? Well for one, the dairy industry is perhaps one of the most aggressive marketers of any of the agricultural sectors in this country. The image of clean and wholesome milk can be found on public transit, street corners, magazines, newspapers and of course on television. The milk moustache has been made famous by the many celebrity faces that have lent their image to such campaigns.

From an industry perspective, Canada's dairy industry is much different from any other in the world as dairy prices and supply are controlled by what is known as supply management, where farmers produce just enough milk to meet consumer demand, and prices set for that milk are determined to be fair for the farmers. And supply management will be a topic for part 2 of this Deceivable Dairy series.

Also to explore on part 2 of this series will be the consolidation within the dairy industry in regards to that final product, as 70% of all milk in Canada is processed by 3 companies, Saputo, AgroPur, and the largest of them all, Parmalat. Parmalat is an Italian company that is often accused as being the Enron of the dairy world, when in 2003, eight billion Euros was found missing in the company's accounting records. Parmalat filed for bankruptcy protection, and as Canadian media was far more concerned with the measly 100 million dollar Liberal party sponsorship scandal, Parmalat remains as the largest dairy producer in the country.

And so instead of kicking perhaps the most corrupt company on the planet *out* of Canada, provincial authorities in Ontario for one, are funneling *their* resources into shutting down small family farms, such as Michael Schmidt's Glencolton Farms located in Durham, Ontario. On November 21st, 2006, roughly 20 officers of the provincial Ministry of Natural Resources made their way onto Michael Schmidt's farm, charged him for selling raw milk, a process that is illegal in all provinces across the country, and confiscated most of his equipment.

But many Canadians and Michael Schmidt himself don't see this incident as being one that just attacks those who wish to drink raw milk, but as Michael Schmidt indicates, is one that undermines the individual rights as Canadians living in a "free" country to decide for ourselves what we should be ingesting.

soundbite

Perhaps North America's leading proponent for the consumption of raw milk is the Weston A. Price Foundation and their, "Campaign for Real Milk." The president of the Foundation is Sally Fallon. Sally was asked following the raid on Michael Schmidt's farm to present a statement at a rally that took place in Toronto, and her statement read as follows: "The right to healthy food is a basic right of all human beings – mandatory pasteurization takes away that right. The safety argument against raw milk is bogus, based on forty-year-old science, and would not hold up in a court of law."

So why is mandatory pasteurization taking away a basic human right? Well, I spoke with Sally over the phone from her office in Washington D.C. and asked her why.

Sally Fallon: With milk, as with no other food, the government has said that there's a certain kind of milk that you should drink and a certain kind of milk that you should not drink. I mean, I can't think of any other food where this is quite the same. But it establishes a precedent that the government is in charge of your health and can tell you what's healthy and what's not healthy. And, in fact, we've been seeing for a long time this going on in the United States, where the government is saying, "Vegetable oils are healthy, and butter is not healthy." And this starts to show up in a lot of unfortunate ways, such as school lunches. I think making pasteurization mandatory was the first instance of a government doing this, and it's kind of set the precedent for other pronouncements from the government about what we should and should not eat, and other control.

JS: The second part of Sally's statement refers to the safety argument against raw milk as being bogus. As she suggests, the whole bacteria paradigm has shifted.

Sally Fallon: Well 40 years ago, medical science, indeed all science, thought all germs were bad. They thought that the food should be sterile to be healthy, and they thought that pasteurization would get rid of all bacteria. And they did not know anything about the safety systems inherent in milk. Since that time, we've learned a lot of things. First of all, the whole paradigm about bacteria has shifted, to the point that we now recognize that we must have certain types of bacteria in our intestinal tracts or we will die. And that it's always a question of a balance of good and bad bacteria. The other thing that's so interesting has emerged from studies on human milk, and trying to find out why human milk is so protective of the infant; why children drinking human milk – which is raw milk, and which always contains pathogens – don't get sick from these pathogens. And what they discovered is that raw milk from mammals contains numerous bioactive components that either selectively get rid of bad bacteria, or that program the immune system of the suckling infant to be immune for life to whatever bad bacteria they're exposed to. I mean, it's a truly amazing system. These components are virtually completely wiped out when you pasteurize, so the infant is not getting all of these wonderful immune-stimulating properties, and getting the protection. We also know from a number of published studies – these are published studies in the literature – that if you put bad bacteria into raw milk and test it a few days later, those bad bacteria will be gone. They will completely disappear, because the good bacteria and the anti-microbial components get rid of the bad bacteria. So this has all emerged in the last 40 years, and it completely changes the picture about should or should we not pasteurize our milk.

JS: As health remains as a top priority and concern for the Canadian policy makers and general public, it seems as though the responses to health raise more concern than the determinants of health. And Sally Fallon explains what kinds of micro-organisms are destroyed by pasteurization, that are seen to be of benefit to human health.

Sally Fallon: Yes, well all of the healthy lactobacilli – these are bacteria that produce lactic acid, lactic acid being named after milk, actually, Latin for milk – it was very important to have these in the gut, because they help break down food, and they help absorb nutrients. And they keep the pH at the proper level in the intestinal tract, and raw milk is the best source out there. In fact, raw milk that's actually gone off a little, gotten a little sour, is an even better source.

JS: Perhaps one of the most prevalent health concerns surrounding milk today is that of allergies. As there are increasing incidents of allergies to milk, Sally Fallon does provide insights as to why this is.

Sally Fallon: We know why pasteurized milk creates allergies. It's because when you pasteurize, which is a very rapid heat treatment, the fragile proteins in milk become warped and distorted and break up, and the body does not recognize these proteins any more. They think they're foreign and harmful proteins, and the body mounts an immune response. So this is why more and more people simply cannot drink pasteurized milk. The market for fluid milk declined 1% every year. It has relentlessly for the past 30 years. It's a big problem for the dairy industry, you know? Their customers are disappearing. And at the same time, we've had more and more articles in the literature linking commercial pasteurized milk to things like asthma, allergies, rashes, even things like diabetes. What's so interesting to me is one of the most recent studies on allergies and asthma found that the biggest correlation with not having asthma was having starting off life drinking what they call farm milk; that is, raw milk. And that's exactly right, because these components build in protection, protection for life in the infant.

JS: And you're tuned in to Deconstructing Dinner as we hear clips from my conversation with Sally Fallon of the Weston A. Price Foundation on the topic of raw milk versus pasteurized milk. As pasteurization is seen to destroy harmful bacteria that Sally suggests is untrue, yet another argument by the dairy industry and public health officials is that pasteurization encourages longer shelf life. Increasing in popularity is the new form of ultra-pasteurization or UHT, allowing milk to remain on the shelf for up to three months. But is this such an achievement in technology and health?

Sally Fallon: Well, there's an old saying, "Long shelf life equals short human life." Yeah, this milk is completely sterile, and doesn't support life. Now, by the way, ultra high temperature pasteurization takes the temperature above the boiling point, which is totally unnatural. I mean, when you cook something, when you boil something, it remains at the boiling point. But the ultra high temperature pasteurization is a very rapid treatment that takes it from room temperature to the boiling point within a few seconds. This is a very drastic violent process, and the proteins get even more warped and destroyed and I know people who can drink pasteurized milk but not ultra-pasteurized milk. It makes them violently ill. Raw milk has a longer shelf life than you think. The raw milk that I get, if you keep it nice and cold, keeps for two weeks at least. It's nice and fresh after two weeks. So you can't use this argument about shelf life. Raw milk lasts quite some time.

JS: Continuing on the topic of nutrition when comparing raw milk versus pasteurized milk, how many of us have ever questioned the prevalence of added vitamins to many of the milk products we see on grocery store shelves? I asked Sally Fallon if this is an indication of the vitamins that are lost through the modern processing of milk.

Sally Fallon: Well the vitamin that is being added that I know of, at least in the States, is vitamin D. Vitamin D is added for one thing because the cows are no longer outside on pastures, so they're not producing vitamin D and putting it in the milk. And secondly because they take some of the fat out, even in full fat milk they take some of the fat out, so they need to add this vitamin D. And because of government guidelines, people are eating fewer and fewer foods that naturally provide vitamin D, so the thinking is, "Well, we'll just put it in the milk, and everybody will get vitamin D." But people allergic to milk certainly aren't getting that vitamin D.

JS: Perhaps one of the most important benefits of pasteurization as perceived through the eyes of the current industrial food system is that destroying all known pathogens within milk that are

dangerous to humans quite simply allows for the factory style production of milk to operate on the scale that it does. As will be discussed later on the program, unhealthy cows can lead to unhealthy milk and thereby lead to unhealthy humans. And pasteurization is perceived as an insurance policy so to speak for such a factory style system of food production. But as Sally Fallon points out, even the pasteurized dairy system is not without its risks to human health.

Sally Fallon: Well the pasteurization was made mandatory to allow this industrial system, because the milk wasn't safe from the industrial system unless they pasteurize. But the irony is that it's still not safe, even if they pasteurized it, because there are heat-resistant bacteria, like the Johne's bacteria, for paratuberculosis, which is found in 19-20% of all pasteurized milk samples, and that has been linked to Crohn's disease. Also the spore of parasites in bacteria: they survive pasteurization. Those are what spring to life sometime after pasteurization, because they're not destroyed. It's not what we've been told. It's no guarantee of safety to pasteurize the milk. And then the other problem is, if there is post-pasteurization contamination, because the whole safety net has been destroyed, and the milk becomes a perfect medium for the breeding of these pathogens.

JS: Here in Canada the sale of raw milk is prohibited, whereas a large number of US States, do allow the sale of raw milk. And Sally explains.

Sally Fallon: Well in eight states, you can buy raw milk in stores, and in about 28 total, it's allowed to be sold from the farm. Then we have another 7 or 8 states where the milk is either available through cowshare programs, like Michael Schmidt has, or it's widely available as pet milk. So in 35 out of 50 states it's very easy for people to get raw milk in the United States. In Europe on the continent, it's pretty much allowed. I don't know of any continental country where you can't get raw milk. It's banned in Scotland and Ireland, but you can get raw milk in England, because the royal family drinks raw milk. And as a matter of fact, the Queen has refused to sign a bill outlawing the sale of raw milk, because it'd be totally hypocritical. Their whole family has always consumed raw milk. In fact, the Prince of Wales said recently, "Look at my grandmother. She lived to be 100 years old, and she drank raw milk."

JS: Sally Fallon additionally pointed to one example of a raw milk dairy in California that has served over 40,000,000 servings of their milk with not one person falling ill, while by comparison, during the same period, there were 19 recalls of pasteurized milk or milk products in that state.

But the existence of raw milk producers within the rural communities of Canada would not just increase the health of the population as Sally Fallon suggests. The care surrounding the production of raw milk would simply not allow such a product to be produced on an industrial scale. With that said, raw milk production really does represent the creation of local food systems, as in places like Washington State, it is mandatory that the milk be bottled on site where it is farmed and produced. This mandatory local processing thereby keeps more money within the local economy, and keeps the product itself within the towns or cities in the vicinity.

Sally Fallon: It's the engine for a real renaissance of rural life, because the farmers can make a decent living from raw milk. Now the quota system in Canada has kept milk prices pretty high for dairy farmers, but in the United States, those in the conventional system are going out of business at the rate of 16 farms a day. They're only getting about \$10 or \$11 per 100-weight for their milk, which is the same price they got in World War II, whereas if they sell raw milk they can get anywhere from \$50 to \$200 per 100-weight for their milk, and really make a decent living. And

that's one of the wonderful side effects of the raw milk movement. It's revitalized rural life. It has the potential to completely revitalize rural life.

JS: In wrapping up my conversation with Sally Fallon of the Weston A. Price Foundation, she left me with these comments on the incident involving Michael Schmidt and his dairy farm in Durham Ontario that was raided by armed provincial officers back in November 2006.

Sally Fallon: Well, as a matter of fact, I visited Michael Schmidt's farm several years ago, and I wrote an article about what he's doing, and posted it on our website: rawmilk.com. So Michael and I are old friends. I did not actually go to his farm on this last visit. I saw him in Toronto. And what a wonderful hero Canada has in Michael Schmidt. He is going to change a lot of things, not just make it better for consumers, but make things better for farmers. And he deserves the support of every citizen in Canada, whether or not you drink raw milk, you've got to applaud what he's doing. He is a pioneer, not just in making the raw milk available, but also in his farming methods, his views about the place of the farm in society. You know, they take in troubled children to work on the farm, which turns out to be extremely therapeutic, getting these young people in touch with the land and the animals and so forth. There's many aspects to what he's doing that have very favourable outcomes for our entire society.

JS: And that was Sally Fallon, the President of the Weston A. Price Foundation and their Campaign for Real Milk. I spoke with Sally over the phone from her office in Washington D.C. You can find out more about their campaign by visiting www.realmilk.com, and links to information on Michael Schmidt will be listed on the Deconstructing Dinner website.

soundbite

JS: And you're tuned in to Deconstructing Dinner, a weekly one-hour radio broadcast produced at Kootenay Co-op Radio in Nelson, British Columbia. If you miss any of today's show you can tune in to an archived version on our website at cjly.net/deconstructingdinner.

While the Weston A. Price Foundation promotes the sale and consumption of raw milk, they do also promote the raising of dairy cattle on pasture that is thereby grass-fed. As the dominant system of dairy production sees cows raised in what are known as confinement systems, their feed is understandably a mixture of grains, such as corn, oats, perhaps some dried hay and nutritional supplements, supplements that would otherwise come from grasses.

Perhaps one of the most significant differences between grass-fed dairy and grain-fed is the impact these systems have on our environment. According to a new report published by the United Nations Food and Agriculture Organization, the livestock sector generates more CO₂ greenhouse gas emissions than transport. It is also a major source of land and water degradation. The FAO predicts that milk output will increase from 580 million tonnes to 1,043 million tonnes by 2050.

As Canadians are no doubt becoming more and more concerned over the issues of climate change and what it is we can do about it, according to Dr. Alan Fredeen, the dairy you choose to consume can play a significant role.

Dr. Fredeen is a researcher in the Plant and Animal Sciences Department of the Nova Scotia Agricultural College in Truro, Nova Scotia, and his research has explored the environmental comparisons of dairy systems. I spoke to him over the phone from his research centre, and he first introduces his research, and its importance.

Alan Fredeen: Well, the environmental impact of confinement systems, and if we go beyond that, industrial systems, is largely hidden to the average person and to the average producer as well. And that is largely because there are a lot of expenditures on the fossil fuel side that are not counted in the production system currently. And I guess this is what has led us down the path toward greater intensification, this huge discounting of any effect of the use of the fossil fuels in the system.

JS: As the dominant conventional system of producing dairy is one that represents a far cry from being a natural system, Dr. Fredeen suggests that the pasture system is far more of a natural one.

Alan Fredeen: The pasture system is really a form of biomimicry, where we are using the natural systems to produce food for us. It's not obviously entirely natural, but we're headed towards that. So we're looking at the animal itself, harvesting its own feed, and spreading its own manure, and really the only input that is needed is a bit of fencing, and a bit of labour on the farmer's part.

JS: From an environmental perspective, the factory style system of simply *processing* milk has its own environmental impact, but Dr. Fredeen's research has focused on other aspects of the dairy industry that retain their own impacts. And he describes some of the benefits of raising dairy cows on a diet of grasses.

Alan Fredeen: The benefits of a pasture system are probably not obvious to anybody. When one thinks of a pasture system, they think of more animals out using more land area to produce milk, compared with a conventional system, where often we don't even see the animals, and they're often confined on a very small bit of land. When you think about it, though, the cows that are on pasture are getting, again, most of their feed themselves. We don't need expensive machinery to gather it for them. We don't have the transportation costs of importing it for them. In our studies the cow on pasture uses about 60% or less of the grain that would be going into cows in a conventional system. So there's quite a reduction in grain, and then we have measured the methane production from pastured cows, and it's if anything a little bit less from cows in confinement. We've used a variety of methods to test this. But methane is not the only greenhouse gas, it's not the only environmental impact from cows. So even if we can picture more cows in a pasture system to produce the same amount of milk as cows that are in an intensive system, we have to realize they're not producing any more methane per animal, they are consuming less grain, which requires less fossil fuel for transportation, less fossil fuel to produce, and then it goes right down the line. There's less soil erosion, there's less nitrous oxide emission because the soils are not being tilled.

JS: The topic of animal waste was discussed in depth during the March 23rd broadcast of Deconstructing Dinner, one that explored factory hog production here in Canada. One concern raised during that broadcast was in regards to the vast quantities of medication that are used to either treat illness or prevent illness in farm animals. As antibiotics for one pass through animals virtually unchanged, the environmental pollution of these antibiotics leads to concerns over the emergence of antibiotic-resistant bacteria that could thereby limit the effectiveness of antibiotics in humans. While Dr. Fredeen has not studied this himself, he does refer to simple evidence from farmers who indicate that such environmental pollution of medication is far less of a risk on pasture dairy systems.

Alan Fredeen: There certainly is a lot of evidence, coming mostly from farmers themselves, because there really have not been a lot of studies on this, to suggest that cows are healthier when they're in pasture and they do have fewer problems that would require medication. Also, there's

the benefit of them being detected in heat naturally, so their reproductive performance is potentially better without drugs in a pasture system. It really all comes down to the nutritional state the cows are kept in, so if cows are allowed to be in poor condition, in a pasture system, just like they may be in a confinement system, then their performance will not be as good. So the trick in any dairy system is to try to keep the cows in good condition, and if we're looking at environmental impact, to try to have most of the condition built upon the use of good-quality pasture and not grain. We see fewer rumen disturbances, fewer lameness issues, and as I was saying, potentially better reproductive performance.

JS: Continuing on the topic of health, it is often suggested that pasture raised dairy cows produce far more nutritious milk than do the conventional systems we see today. Dr. Fredeen has authored a study that extends from his research titled, "Nutritional Impact on Milk Quality". And his findings were, as he puts it, quite startling.

Alan Fredeen: We have looked at the benefits, and a number of others have looked at the benefits of fresh forage on milk quality. The most obvious difference is that the pasture produces milk with higher CLA level (conjugated linoleic acid), which is beneficial in terms of preventing cancer. The differences are quite startling between cows that are fed inside and cows that are fed on fresh forage outside. The amount of CLA in milk can also be increased by simply adding supplements to the diet of cows in confinement, but if you want to have a natural CLA level, then pastures is higher. The other difference that we're just looking at now is that of the antioxidant content. We're looking at the source of forage in the cow's diet on the antioxidant intake and subsequent level of oxidation occurring in the milk. Many people have found there are higher levels of vitamin E and also the beta-carotene.

JS: Dr. Fredeen referred to earlier the level of energy and fossil fuels required to grow, process and transport the feed for dairy farms. He also referred to the level of inputs for the grass-fed systems are virtually non-existent, as the grasses they have studied do not require seeding nor any fertilizers to grow.

But fossil fuels aside, one concern that would engulf any dairy farmer presented with an alternative farming system would be that of milk production and whether such a system would be as economically viable. Dr. Fredeen describes his findings that address these concerns.

Alan Fredeen: We have a pasture research facility that is right adjacent to our confinement barn, so we can compare cows in confinement and cows in pasture. The first study we did was to see whether there was any difference in level of milk production, and in that study the cows averaged 9,000 litres per year, and there was no difference. There are many ways that a pasture system could reduce costs. First of all, as I've mentioned, there's less grain required in a pasture system to get an equivalent amount of milk, so that's a saving on feed. The forage itself, pasture forage, because you're not using as much mechanical operations to produce it, you will find that there's a difference there. There's also a difference in feed storage requirement, because if the cows are getting pastured for half the year, you only need to put in for half of the forage storage, for example. But then, we talked about health a minute ago, and probably the veterinary costs would be lower. Probably the insemination costs would be lower.

JS: Yet another concern that faces any transition from a conventional dairy system to a pasture system is that of access to land. As incredible tracts of land have already been cleared for agricultural use, such a demand for pasture would seem to have a significant environmental impact. But perhaps the least obvious of such a transition is that a pasture system of dairying would decrease if not eliminate the need for grain, which, is of course reliant on vast tracts of

land to grow. Dr. Fredeen further points out how pastures for dairy to graze on can equally be used for other purposes and lead to greater biodiversity.

Alan Fredeen: That's a really interesting question, because that was the next question in our sequence of questions that we are now addressing in some research. Any land can be multifunctional, and by that I mean that in the case of pasture, it can provide not only feed, but other functions as well, such as habitat for biodiverse wildlife. How does such a pasture system affect biodiversity? You can imagine in a monocrop agriculture system, which is employing a lot of pesticides and herbicides, you can imagine that the biodiversity is not that great. But in a pasture system where you don't use those things, and you have control over the height of the grass, then you can both create habitat for wildlife and you can potentially increase the biodiversity that is in an agro-ecosystem. We have looked at following the cows with chickens. One of my former grad students is utilizing a very diverse kind of pasture-based farming system to produce pork and chickens, as well as beef, and turkeys, and eggs. But here what we have looked at on a research level is following the cows with egg-laying birds, in what we can call a hen-mobile, which we simply move along behind the cows a day after they've been on a particular paddock. And the potential benefit of birds is that they do scratch up the manure paddies, in search of larvae, and that spreading of manure is extremely important in the pasture system, because cows will avoid any area that has excrete on it. Either you have to rake those areas, or you could use chickens to do that for you.

JS: Another concern that has been raised here on Deconstructing Dinner with respect to the factory-style systems of food production is that of farming skills. As agriculture and food become more and more reliant on energy-dependent technologies, those that currently dominate the dairy industry, the human energy and skill that has traditionally been associated with farming and production is disappearing. In the case of animals, animal husbandry is integral to understanding the needs of, in this case, dairy cows. I presented this concern to Dr. Fredeen, given any shift to raising livestock on pasture would require more of these husbandry skills that have been lost. And Dr. Fredeen provided an example where this has already taken place.

Alan Fredeen: Around the time of the Soviet breakup, Cuba was having to become self-sufficient. Cuba found it very difficult, because the systems that they had been using to produce milk had been the conventional systems, high-input systems, that had been subsidized by the Soviets. The systems that they were converting to were the pasture systems; not entirely, but that was certainly an element. But the knowledge of how to do that was gone. It had been lost. So we had been involved in some consultation with them, and actually I had a graduate student do some work down there, looking at improving pasture management. When I visited farmers that do a lot of pasturing, I realized that they had so much skill that it would be very difficult for newcomers to understand.

JS: As I neared the end of my conversation with Dr. Alan Fredeen of the Nova Scotia Agricultural College, he ended with these remarks.

Alan Fredeen: One important aspect of a farm is its resilience to change. We can see a number of fairly substantial changes coming along including fossil fuel costs rising and climate change. The ideal system is going to be one that is resilient, that is going to change depending upon the way some of these issues go, and that ideal system is different from one end of the country to the other. When we looked at areas of Canada where pasture production systems could be possible, we identified certain pockets, but it certainly wasn't the entire dairy industry of Canada. So I'm certainly not promoting pasture systems for the entire dairy industry. Cows do need to express their natural behaviours; they do need to get exercise – we cannot raise couch potatoes; so I guess

the resilience of a farm is important, and I think a pasture system does give some resilience. The dairy system becomes a little bit fragile, because there's so much invested in producing milk in just one particular way. I think the industry is aware of this, but we need to be sure that we maintain the diversity of production systems in the dairy industry, so that there always is a large segment that can make the adjustments that are needed.

JS: And that was Dr. Alan Fredeen, a Professor of Plant and Animal Science at the Nova Scotia Agricultural College in Truro Nova Scotia. More information on his research will be available on the Deconstructing Dinner website.

soundbite

JS: You're tuned in to Deconstructing Dinner, produced at Kootenay Co-op Radio in Nelson, British Columbia. And you can learn more about this program on our website at www.cjly.net/deconstructingdinner.

On today's broadcast, titled *Deceivable Dairy*, we are exploring many of the unknown aspects of the dairy industry here in Canada. From health to environmental impacts, we now arrive at the topic of animal welfare. This will be discussed in more depth on part 2 of this series. But here on part 1, we will explore what can only be considered as an alternative dairy farm located in Grand Forks, British Columbia. As the number of dairy farms in Canada decreased by 85% between 1970 and 2003, the volume of milk per farm has increased by 550% in that same period. With such an increase in the size and production capacity of farms, Jerseyland Organics acts as somewhat of an oasis, through which Canadians can see how dairy farms are more traditionally operated. Creating the business in 1985, Ric and Vickie Llewellyn continue to operate the first organic dairy in Western Canada, using a small herd of less than 100 cattle.

Jerseyland Organics produces cheeses, yogurts, sour cream and butter, and their cow of choice is the Jersey, as the milk from this breed yields 30% more cheese than the common Holstein that comprises 93% of all dairy cows in Canada.

My conversation with Ric Llewellyn covered a wide range of issues from the practices on his farm to those found within more conventional systems. And he further touched on organic standards for dairy production, which only exist in Quebec, Ontario and British Columbia.

To better imagine what Ric's farm looks like, he first describes the housing conditions for his animals at Jerseyland Organics.

Ric Llewellyn: Our dairy cattle are housed in coverall barns. What you want to picture is a large tent. These are a metal frame with a plastic covering over them that is translucent: it allows light in and out. We prefer these as during the daytime it provides natural light within the barn, so they're not dark and gloomy. The bedding for the animals in these barns are what are called free stalls, which are individual stalls with a pipe just dividing the stall right beside the cow beside them. But it's not a wall, it's just a pipe so that when one animal lays down, another can't come in and sort of push her out of there. It just gives them a bit of a pecking order, if you want to call it, as far as where they like to lay. These free stalls, what we use for bedding underneath for the animals to lay in is clean sand. We've tried different bases for them to sleep on and the sand is their preference over anything else that we've ever tried. In really cold weather, we will put in chopped straw on top of that, or if we can access it, some sawdust, just on top, because the sand gets a bit stiff when it's cold. But the cows prefer the sand, and it's a very clean, healthy bedding for them to lay on. Another reason we like the free stalls is they can come and go as they like.

Our cows in their barns are never confined. They can come out 24/7, 365 days of the year. It's up to them when they come out of the barn and when they go outside to eat or to go to pasture, or just to walk around and socialize with their herdmates. That is the normal behaviour for cattle. They do not like to be confined as does no animal. And they're a herd animal. They don't like to be by themselves. They want to be with others.

JS: Ric Llewellyn has had plenty of experience visiting the more conventional dairy farms that dominate Canada's dairy industry, and in providing a comparison to his operation, he describes the housing systems of these more conventional operations.

Ric Llewellyn: Well if you walk into a conventional barn, whether it be in British Columbia or whether it be in Saskatchewan or in Ontario, the first thing that will affront most people as they walk in is ammonia. When you confine large animals that produce tens if not hundreds of kilos of manure and urine every day, and confined among concrete, whether you scrape it once or 100 times a day, there will be concentrations of these by-products from the cattle being concentrated in these barns. The downside to that is that these animals never get out. You can walk in, you can look at it and think, "They look clean and I guess that's okay." You walk outside and get fresh air. This poor animal has to live its short life inside this barn and never gets out. Everybody within this province at some time in their life has probably driven down to the Fraser Valley. The Fraser Valley has in excess of 600 commercial dairy herds. Drive around there and see if you ever see a cow outside. I'll guarantee you you won't see a milking cow outside in the Fraser Valley.

JS: While Jerseyland Organics does operate under BC Certified Organic Standards, many of his practices do go above and beyond the standards themselves, and Ric clarifies as to what the standards are in BC.

Ric Llewellyn: The standard provides that the cattle must have access to outdoors. Unfortunately, on many larger organic dairies, they can interpret this to an exercise area outside, through the inclement weather in the winter. I mean, ours have the access to the farm. I mean, if they want to wander around in three feet of snow in the winter, well, that's up to them. And they'll choose where they want to go. We don't confine them to a little, "poke their nose out the door and okay that's your exercise, back in you come." It does unfortunately happen on many organic dairies that I've been to. Conventional dairies, they don't care. I mean, they confine them. The organic standards provide that you must supply pasture for milking cows, I believe it's five months of the year. And they must get the substantive portion of their feed from pasture during that period of time.

JS: Jerseyland Organics does take advantage of the environmental and health benefits of raising their animals on pasture, and I asked Ric Llewellyn to further explain why it is he chooses to do so.

Ric Llewellyn: Well cattle are by designation within the mammal species ruminant, which means they have multiple stomachs. Their stomach system, digestive system, is designed to take in large quantities of low quality or low protein feed, process that, digest it in a manner that is most efficient and get the most out of these grasses and such, and then expel what is left, which is primarily just the cellulose and such. That is the nature of cattle. I mean, that is how nature has designed them, is to eat forage, is to go outside and walk along and eat what they need for the day. To confine them and feed them silage, which is basically pickled feed, corn quite often in this province, is not natural for them, and they have to feed them buffers so that they don't burn their stomachs out. And it just isn't right. They will, for a short period of time, produce more milk on that kind of a diet, but I mean they won't last.

JS: While in some parts of North America it is possible to raise cattle on 100% pasture, it becomes rather difficult in many parts of Canada for a number of months of the year. And Ric describes what then comprises the diet of his animals.

Ric Llewellyn: We feed 100% hay, we don't feed any silage. Their stomach produces everything that is needed to digest dry cellulose. If you look out at the wilderness and see what other undulants and ruminants such as deer and these sorts of things are eating is dried up grasses and they do just fine on it. It's very healthy for them. You provide them dry hay, and water, and a little bit of grain if they're milking, and they'll do just fine.

JS: As research for this broadcast was undertaken, one of the most startling norms that can be found on the conventional dairy farm in Canada is how soon after birth newborn calves are taken from their mothers. While the standard between organic dairy and conventional dairy does not differ in this respect, the practice on Ric's farm is a far cry from the more common one.

Ric Llewellyn: The standard for organic and inorganic is a little bit deceptive in some respects, in that newborn calves aren't left with their mothers. What they do is they receive their mother's milk. They'll be taken away immediately and put into a pen, and fed the colostrum – the first milk – from that baby to that mother, hopefully for 72 hours, quite often it's less in conventional dairies. But they do not stay with the cow. I don't think I've ever been on a conventional dairy, or a large dairy, where they leave the calf with the cow for even an hour. We just feel that that isn't right, I mean we raise our own babies from birth until they finish school. And the more nurturing a baby has, whether it be a calf or a human, the more balanced they come out. Our calves are born to a cow, a milk cow has to have a calf every year to produce milk. That calf will stay with that mother until the colostrum is clear, which is generally about three days. If the cow has more milk than the calf needs, which most milk cows do, what we will do is we keep adoptive mothers, or – “Old Grandmas,” we call them – or nurse cows, and they will raise actually one or two calves. And that will be their job. They will raise and they will nurture that calf just like it's their own. They're just so good at it. They socialize them and the calves are in group housing with other calves and other mums. So everybody, if you want to call it, has these adoptive mums, or in some cases their own mum, stay with them until they're weaned, which is usually around 6 months old. But even when they're taken away at six months old, we will often leave them with old grandma cows, just so they're in with other adults.

JS: You're tuned in to Deconstructing Dinner, produced at Kootenay Co-op Radio in Nelson, British Columbia. I'm Jon Steinman. On this first part of the two-part series titled Deceivable Dairy, we are currently hearing from organic dairy farmer Ric Llewellyn of Jerseyland Organics located in Grand Forks, British Columbia.

As Ric most recently referred to the difference in how newborn calves are treated on dairy farms in Canada, he was only referring to the female calves. So what about the male calves? Well, when the dairy industry is of course reliant on cows to constantly be pregnant and lactating, there is understandably a surplus of baby male calves, who are otherwise of little worth to the dairy industry. As would come as a surprise to many, the veal industry here in North America is quite simply a byproduct of the dairy industry. Close to 270,000 male calves are slaughtered every year in Canada. Essentially, supporting the dominant dairy systems here in Canada is also in support of the veal industry. This will be discussed in more detail on part two of this Deceivable Dairy series, but Ric briefly explains this system and how male calves are handled on his farm.

Ric Llewellyn: In many cases, bull calves on dairy farms are destined for the baby veal industry. It's a nasty business out there right now with baby bull calves. Sometimes the bull calf prices fall so low that on many, many dairy farms – and this happens to not just conventional but organic too – they'll knock them on the head at birth, because it isn't worth the money to ship them to auction to get what they feel is the value out of the calf. I mean, we just look at that as so unethical. You're responsible for bringing this baby calf into the world; whether it's a bull calf or a heifer, they both deserve to live. All our bull calves are raised on farm, and we raise them both on organic and on SPCA standards. We raise those bull calves right through to their adulthood, and we also operate an organic beef herd, and the bull calves become the substantive portion of our beef herd.

JS: Continuing on the topic of animal welfare in the dairy industry we arrive at one of the more controversial practices that although isn't prevalent, is nevertheless still in use, and that is the practice of tail-docking. And Ric explains.

Ric Llewellyn: Tail docking is quite controversial in all dairy industry. In organics it's prohibited. There's nobody that can tail dock. In conventional dairy, most people don't like it. Some feel that it's necessary. What that means is you essentially, at a young age, cut the tail off the calf. They have several different ways of doing it, none of which seem to have much purpose other than convenience of the milker, so he doesn't get swatted with possibly a dirty tail. There have been some arguments that taking the tail off the cow keeps the udder clean, which reduces mastitis, which is inflammation of the udder. The research doesn't bear this out, mind you. I've seen many, many – and I believe UBC has even done research on this. I don't think tail docking is supported there.

JS: Two of the more common health conditions that can fall upon a dairy are mastitis and lameness. As has been mentioned by both of my previous guests, animals raised on a diet of grass and who spend their lives on pasture are healthier than those raised using the more conventional system. And you will be amazed to hear what the veterinary bills are at Jerseyland Organics as Ric describes the prevalence of mastitis on dairy farms.

Ric Llewellyn: It sort of covers a multitude of topics, when you get into this. Mastitis by definition is an inflammation of the udder, usually caused by an infection, generally caused by bacteria getting in through the end of the teat, into the milk gland. You can imagine how wonderful bacteria thinks this udder full of milk is. It's an ideal situation for them to grow. Ideally you want to keep that udder as clean as possible. Now that's a simplified form. Where it gets complicated is if the animal is under stress, their immune system isn't as strong to deal with these bacteria that will, from time to time, challenge the udder. So if you have cows that are under stress by eating too much grain, or by being confined in dirty concrete barns, or if they're just not feeling good about things because there's too many of them in a pen, you will end up with less resistance and more mastitis. As I mentioned earlier, there's this huge following starting on grazing cattle, where you have normal socialization, normal feeding habits, and as such, less stress. The animals are healthier. They're able to resist diseases such as mastitis and infertility – and stress is a disease too – so much better than these poor confined animals. On our farm, definitely this is borne out. I was looking at some of our records, and our veterinary bills for a year, on a dairy of 60 cattle, will be somewhere around \$1,000 or \$1,500. Well that works out to \$30 a cow. I mean, it's phenomenally low. And the majority of that \$30 a cow is their vaccinations, for some of the more prevalent cattle diseases out there, not sickness.

JS: The second condition mentioned just moments ago is lameness. Lameness is a physical ailment affecting the hooves of cattle and thereby their ability to stand. I asked Ric if lameness is a common condition within the dairy industry.

Ric Llewellyn: It's very common in the industry. Two reasons: one, confinement on concrete, and two, hot feet, too much grain, and too much silage, very bad for feet. And laminitis, they call it, very hard hooves, they don't wear properly. We, as do most dairies, have a hoof trimmer that comes right to the farm every year. And we get him once a year. Many dairies have them come every 3 months, when they're confined on concrete. He has remarked – and we've had the same company come for probably 10 years – he loves to come here, because we have no problems. He comes, and he kind of chuckles and says he comes for a clip and a buff, and that's because the hooves are in such good shape. And that comes from walking on ground. We have zero problems with lameness. Absolute zero.

JS: As I neared the end of my conversation with Ric Llewellyn of Jerseyland Organics, we spoke about the average lifespan of dairy cows here in Canada. His answer was one that truly illustrates how most of the dairy cows in this country, are treated no differently than machines. And Ric describes what it is that determines the average lifespan of animals on dairy farms.

Ric Llewellyn: Really, it's borne out by the general health of the animal. A recent statistic in the United States was – and this is from the US Holstein Association – was the average lactations of Holstein cattle – in other words, how many times they milk, so they usually milk for a year, and then they have another calf, and they milk for a year again – the average lactations in the United States right now for Holsteins is 1.9. So in other words, they have their first calf at 2, they milk not quite two lactations. So at under 4 years old, they're butchered, usually because they're non-profitable, in their opinion. That, again, goes back to them pushing them too hard. And they just burn them out. Our average lifespan of milking cows, that they're still milking, is between 12 to 15 years. So it's about five times the national average for the Holstein Association in the States. I mean, they just don't get burned out when they're on pasture. We don't push them. And we're quite an oddity. When our old girls at the age of 12 to 15 years old, when they're no longer able to continue milking, we just retire them. They just wander around, and either raise baby calves, or in some cases, they just sort of wander around and smell the roses, as we say.

JS: While organic dairy production receives very little press here in Canada, given it currently only represents 1% of total dairy production, it has been receiving quite a bit of attention south of the border. The Organic Consumers Association and the Cornucopia Institute have launched an aggressive campaign against the largest producers of organic dairy in the US, where organic standards there do not appear to be so appetizing or adhered to. One organic farm houses a herd of 4,000 cows.

With the organic dairy label in the US seeming to have lost its organic appeal to many consumers, I spoke with Ric about whether or not *he* believes the organic dairy industry in Canada is susceptible to such factory style methods of organic production.

Ric Llewellyn: Oh, it's here now, in the Fraser Valley out in Vancouver. Their sole producer now is milking a thousand-cow herd. I mean, we are not talking about, "What if this could happen?" We're not talking that, "organics is the little family farm." I mean, this is corporate size. Organic Meadows out in Ontario, I mean they're a cooperative corporation. They don't even own a cow, and they're supplying dairy products from coast to coast. Stonyfield out of the U.S, I mean, they're trucking yogurt to Canada by the semi-load, and they're the fifth largest dairy in North America.

JS: On the next broadcast of *Deceivable Dairy* here on *Deconstructing Dinner*, we will explore the supply management system that governs the production and pricing of milk products here in Canada. As the practices used at Jerseyland Organics sound far more appetizing than conventional ones, I was curious as to why it is they only produce cheese, yogurt, butter and sour cream, and not any fluid milk products. His answer was one that reemphasized the inability for many Canadians to purchase food that embodies their own values and principles. I asked Ric Llewellyn why it is he does not produce fluid milk.

Ric Llewellyn: It's our curse. They're called marketing boards. We're not licensed by the marketing boards for fluid milk. That's their – not to use the pun, but that's their sacred cow. They at the time in their infinite wisdom decided that we shouldn't be allowed to produce and sell fluid milk, so we're restricted to cheese. Nothing more than politics.

JS: And that was Ric Llewellyn of Jerseyland Organics located in Grand Forks, British Columbia. You can check out their website at www.jerseylandorganics.com.

In closing out, I'll remind listeners that this broadcast marks the first of a two-part series here on *Deconstructing Dinner*, titled *Deceivable Dairy*. Among other topics, we will explore the consolidation within the industry, what regulations and laws are in place to ensure animal welfare standards are adhered to and how veal is a byproduct of your glass of milk, and we will explore the benefits and downsides of Canada's supply management system

ending theme

JS: That was this week's edition of *Deconstructing Dinner*, produced and recorded at Nelson, British Columbia's Kootenay Co-op Radio. I've been your host Jon Steinman. I thank my technical assistant Dianne Matenko. The theme music for *Deconstructing Dinner* is courtesy of Nelson-area resident Adham Shaikh. This radio program is provided free of charge to campus/community radio stations across the country.

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Till next week.