News about Pasture-Based Farming

Most of the information in this section comes from newly published studies or reports. But some is "old news" that comes from findings recently unearthed from textbooks and journals.

Grazing lambs control insects and increase crop yield

Insects can take a toll on alfalfa in the winter months. The usual procedure is to spray the fields with insecticides. A group of forward-thinking California scientists decided to try lambs instead. They found that letting lambs graze the winter stubble increased the hay crop by 14% over untreated land and 24% over fields treated with the insecticide Lorsban. Let little lambs eat ivy *and* alfalfa.

(J.N. Guerrero et al. *J. of Animal Science* Vol 80, Supplement 2, p. 126. "Grazing lambs control insects in alfalfa."

News articles featured below:

Synthetic CLA may be hazardous to some people's health.

Tens of thousands of people are now taking synthetic **conjugated linoleic acid** (CLA) in the hopes of reducing their body fat and increasing lean muscle mass, effects that are well documented in animal studies. But one of the ingredients in commercial supplements may cause health problems for overweight men, one of the groups mostly likely to purchase the supplements.

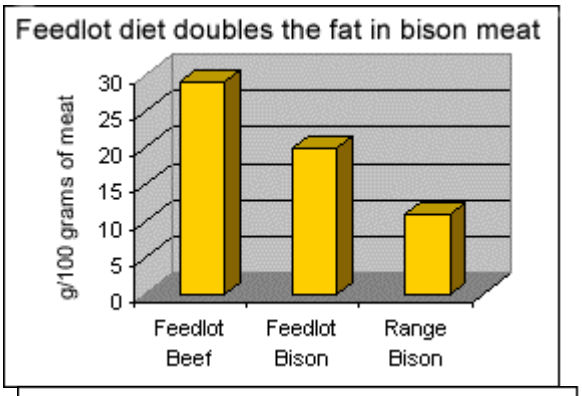
In a recent study, overweight men were given tablets containing a type of CLA (trans10, cis12 CLA) found in significant quantities in most commercial supplements. To the researchers' surprise, the supplements lowered the men's "good" HDL cholesterol, raised their blood sugar, and made them more resistant to insulin---changes that are linked with a greater risk of diabetes, obesity and heart problems.

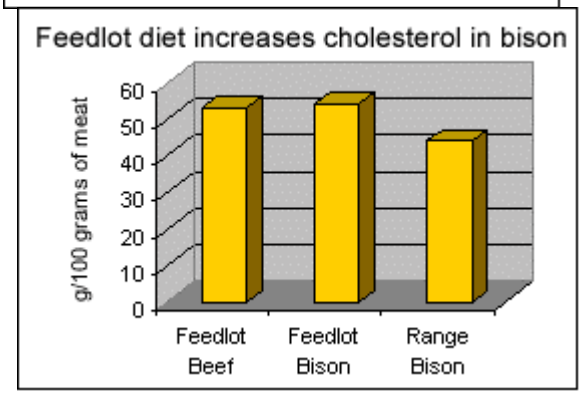
These health problems are *not* associated with the natural CLA found in meat and dairy products. Once again we learn that it is not wise to fool Mother Nature.

(*Riserus, U et al. Diabetes Care*, 2002. "Treatment with dietary trans10cis12 conjugated linoleic acid causes isomer-specific insulin resistance in obese men with the metabolic syndrome") 25: 1516-21.)

Feedlot diet reduces the health benefits of bison meat.

Most of the bison meat sold in the United States comes from animals that have been confined to a feedlot and fed grain for the last 6 months of their lives. Substituting grain for grasses has the same effect on bison as it does on cattle—the meat becomes lower in omega-3s, higher in total fat, and higher in cholesterol.



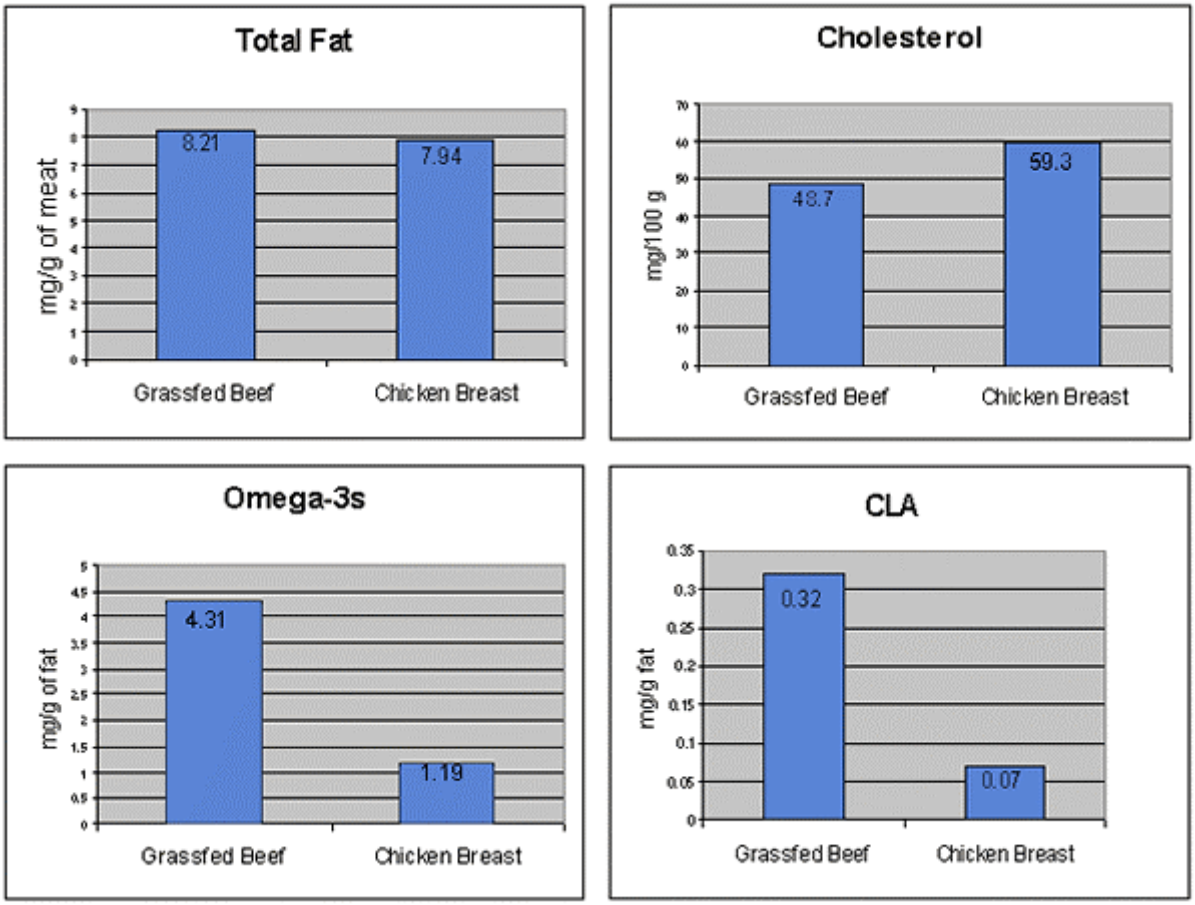


(D.C. Rule et al, "Comparison of muscle fatty acid profiles and cholesterol concentrations of bison, beef cattle, elk and chicken."*J Anim Sci* 2002. 80:1202-11)

Move over chicken. Grassfed beef is best!

What is the healthiest meat you can eat? A nice, lean chicken breast from your supermarket? Think again. Meat from a pasture-fed cow has about the same amount of total fat as the chicken breast, but more omega-3 fatty acids and CLA and less cholesterol. It's a healthier package overall.

These findings come from a comprehensive study published just this year in the *Journal of Animal Science*.



(D.C. Rule et al, "Comparison of muscle fatty acid profiles and cholesterol concentrations of bison, beef cattle, elk and chicken." *J Anim Sci* 2002. 80:1202-11)

Latitude and altitude — hidden factors that influence omega-3 and CLA levels in milk.

The amount of beneficial CLA and omega-3 fatty acids in a cow's milk is influenced by a host of factors in addition to diet, including her breed, individual genetics, age, and even the time of year. Now one more factor has been added to the list: prevailing temperatures. Milk and cheese from alpine grazers or cows raised in colder climates appear to have the omega-3 and CLA edge.

The reason? It has to do with plant antifreeze. Omega-3 fatty acids stay fluid at colder temperatures than other, more saturated fats. A plant that has to withstand the cold needs more of this natural antifreeze to keep its cell membranes fluid. Cows that graze on this cold climate grass ingest more omega-3s, which they then convert to another good fat—CLA. In a recent study, cows that grazed in alpine meadows had more than twice the amount of CLA in their milk as similar cows that grazed down in the valley.

(*"Composition of milk fat and correlation with fodder plants"* Marius Collomb, Jacques-Olivier Bosset, Ueli Bütikofer, Robert Sieber, Hans Eyer, Email: **marius.collomb@fam.admin.ch**)

Want to reduce global warming? Plant a cow.

It's a well known fact that trees draw carbon dioxide from the air and store it as carbon, thereby slowing the rate of global warming. But a new study from Duke University reveals that restoring native grasslands might be a better solution than planting trees in wetter areas of the country. "Grasses are deceptively productive," says lead investigator Robert Jackson. "You don't see where all the carbon goes, so there is a misconception that woody species [such as trees and shrubs] store more carbon. That's just not the case." Grasses store vast amounts of carbon in their underground root mass.

Raising cattle on grass is one way to make it financially feasible to expand our native grasslands. Although cows generate their own greenhouse gasses, the net effect of raising ruminants on pasture is to slow global warming. (For more information about grassfed cattle and greenhouse gasses, refer to Grassfarming and the environment).

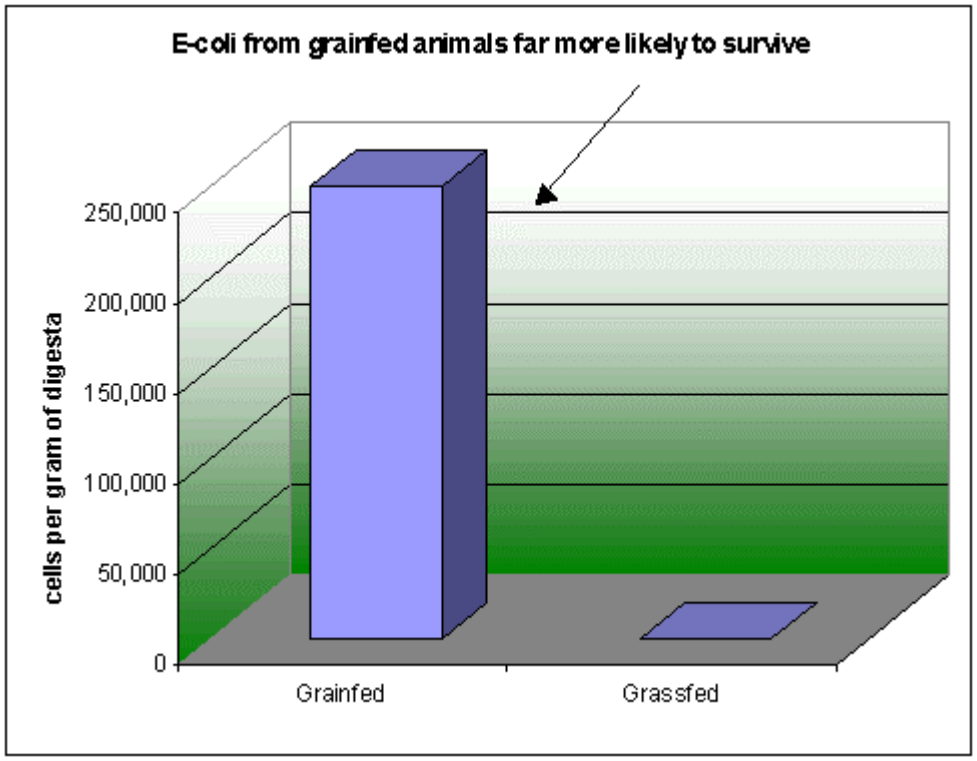
(Jackson, R. B., J. L. Banner, E. G. Jobbagy, W. T. Pockman, and D. H. Wall. "Ecosystem Carbon Loss with Woody Plant Invasion of Grasslands." *Nature 418*, no. 6898 (2002): 623-6.Robert Jackson.)

Irradiate or Pasture-ize?

On July 19th, 2002, ConAgra Foods Inc. recalled 19 million pounds of ground beef that could be contaminated with the deadly form of E. *coli* bacteria. To date, at least 16 people have become ill from the meat.

The National Cattleman's Beef Association recommends preventing similar outbreaks by irradiating meat. (Irradiation uses electrons or gamma rays to sanitize the meat.) New research suggests a more natural cure: keep the cows on grass. When cattle are fattened on their natural grass diet, they have far fewer E. *coli*. Furthermore, the small amount they do have is much less likely to survive the acidity of our digestive tracts. (See charts below.)

The reason? Cornell University researchers have discovered that grassfed cows have a less acidic digestive tract than grainfed cows, so their E. *coli* does not have a chance to become acclimated to an acid environment. If we should ingest E. *coli* from a grassfed animal, our digestive juices would destroy 99.99 percent of them.



(Russell, J. B., F. Diez-Gonzalez, and G. N. Jarvis. "Potential Effect of Cattle Diets on the Transmission of Pathogenic Escherichia Coli to Humans" Microbes Infect 2, no. 1 (2000): 45-53.)

More proof that grassfed cattle are healthier than grainfed cattle.

A typical feedlot diet can cause liver lesions in cattle. Livers were examined from 5,647 grain-fed and 621 grass-fed cattle of similar breed, age and weight, killed at a Queensland abattoir. Eleven percent (11%) of the grainfed animals had liver lesions compared with only 0.2 percent of the grassfed animals. When all the losses from the various illnesses were tallied up, the loss to the producers was $2.25 a head for grain-fed steers versus $0.90 for grass-fed steers.

(*Aust Vet J* 59 (5) 129-32, 1982)

Does it taste any good?

With all the fanfare about the health benefits of grassfed meat, one has to wonder—does it taste any good? Thousands of Hawaiians will tell you that the answer is yes. This June, residents of the Big Island of Hawaii flocked to Kamuela for the 7th Annual "Taste of the Hawaiian Range," a food fair featuring all-grassfed products. Dozens of chefs from Hawaii's best hotels randomly assigned portions of meat ranging from the tenderloin to the soup bones. Later that day, fair attendees wandered from table to table, sampling their wares.

Sponsors of the event say that some mainlanders are beginning to plan their vacations to coincide with the fair. (For more information, call Gene Erger 808/885-0018)

Meet tomorrow's chicken.

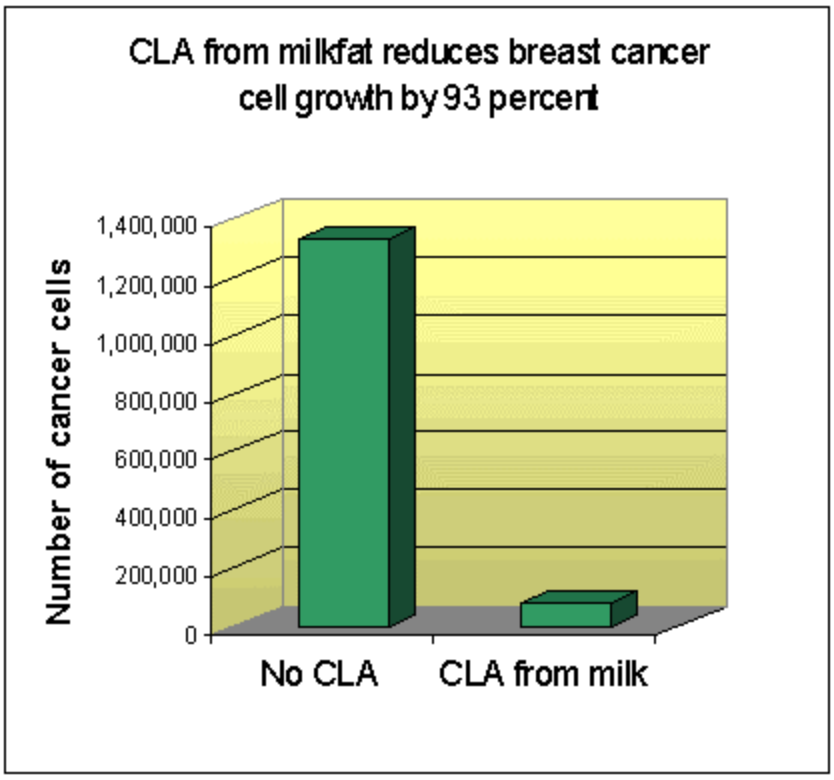
Yes, the chicken is real. It's a new featherless hybrid designed to cut the cost of raising chickens in confinement. A major problem with raising 10,000 birds in very close quarters is that they generate a lot of heat. If the fans and air conditioners fail, the chickens can die within a matter of hours. The new featherless birds dissipate heat more easily because they have been relieved of their down comforters. As a result, they direct more of their energy towards growing bigger and faster.

A scientific breakthrough or a very bad idea? Time will tell. But the poultry industry does not have a very good track record. At the present time, our standard chickens are hybridized birds that have been raised in confinement, fattened on genetically-modified grain, and, more often than not, been treated with growth-promoting compounds and antibiotics. The known consequences of this factory system are: 1) less nutritious meat for consumers, 2) the creation of antibiotic-resistant bacteria; 3) inhumane treatment of animals, and 4) environmental problems caused by the concentration of millions of tons of poultry manure.

More evidence that milk from grassfed cows may reduce breast cancer risk.

The most common dietary advice given to women who want to lower their risk of breast cancer is to eat less fat. But there is one fat that may prove to be an excellent cancer-fighter--- CLA or conjugated linoleic acid. Dairy products from 100 percent grassfed cows are the richest natural source of CLA. In a recent study, Irish researchers extracted CLA from the milk of pastured cows and added minute amounts (20 ppm) to human breast cancer cells that were growing in test tubes. After 8 days, the CLA had killed all but 7 percent of the cancer cells.

Until the 1950s, all dairy cows were raised on pasture. The modern practice of raising animals in confinement and feeding them large amounts of grain lowers the CLA content of the milk and, as a direct result, could be increasing our risk of breast cancer.



(Catherine Stanton et al, "CLA - A Health-Promoting Component of Animal and Milk Fat," *The Dairy Products Research Center No. 26*. ISBN: 1 84170 118 1)

Confirmation of the health benefits of pasture-finished cattle.

Researchers Loren Cordain from Colorado State University and Bruce Watkins from Purdue University have determined that meat from grassfed animals is very similar to meat from wild game animals. This is not true for grain-fed animals. Compared to elk, deer, and antelope, for example, feedlot beef has more total fat, saturated fat, and omega-6 fatty acids, but fewer health-promoting omega-3 fatty acids. According to the research team, "... pasture-fed cattle are closer to values found in wild ruminants, and from a health perspective, the meat from these animals would probably be superior to meat from grain-fed cattle."

(L. Cordain, et al., "Fatty acid analysis of wild ruminant tissues: evolutionary implications for reducing diet-related chronic disease." *EJCN*, 2002, 56:181-191.)

Women who eat dairy products from grassfed cows may have a 60 percent lower risk of breast cancer.

Finnish researchers compared the serum levels of CLA (conjugated linoleic acid) in women with and without breast cancer. They found that the higher a woman's CLA levels, the lower her risk of breast cancer. The women with the highest levels had a 60 percent lower risk than those with the lowest levels. According to the research team, "A diet composed of CLA-rich foods, particularly cheese, may protect against breast cancer in postmenopausal women."

What the researchers failed to mention is that cheese and milk products from pastured cows have 500% more CLA than products from grain-fed cows. Simply switching to dairy products from pastured cows would place women in the lowest risk category.

(Aro, A., S. Mannisto, I. Salminen, M. L. Ovaskainen, V. Kataja, and M. Uusitupa. "Inverse Association between Dietary and Serum Conjugated Linoleic Acid and Risk of Breast Cancer in Postmenopausal Women." *Nutr Cancer 38*, no. 2 (2000): 151-7.)

It was only a matter of time.

According to a recent edition of the New England Journal of Medicine, pigs raised in factory farms in Taiwan are harboring a dangerous type of salmonella that has become resistant to one of our newest and most potent antibiotics—fluoroquinolone, a drug that is critical to human medicine. When people become infected with this resistant strain, doctors will have few drugs in their arsenal to combat it.

The reason that the salmonella became resistant to fluoroquinolone is that the pigs were dosed with the drug on a regular basis. The bacteria that were vulnerable to fluoroquinolone died off, allowing the few that were naturally resistant to flourish.

According to a study in Preventive Veterinary Medicine, Pigs raised on pasture are healthier than ones kept in confinement and rarely require drugs of any kind.

(*The New England Journal of Medicine* 2002; 346:413-419. *Preventive Veterinary Medicine.* 1983. Vol. 1. p. 357-369.)

The low tech solution to preventing shipping fever? Don't ship them!

Around six months of age, virtually all the calves being raised for the meat market are rounded up and shipped to distant feedlots. About a week after arrival, a high percentage of them come down with "shipping fever," a viral infection that is the biggest killer of beef cattle. The disease costs U.S. and Canadian producers more than $1 billion a year. The cause of the disease is simple. The shipping ordeal stresses the animals, which compromises their immune systems. Then they are thrown in with calves from other ranches, exposing them to a host of new viruses.

To combat shipping fever, the USDA's Agricultural Resource Service (ARS) developed a genetically engineered vaccine, which the ARS then licensed to pharmaceutical giant Schering-Plough. Soon, there will be yet one more drug in the feedlot arsenal and yet more revenue for Schering-Plough.

A better way to fight the disease, say producers of pastured products, is to keep the calves home on the range. Calves that stay on pasture live such low-stress lives and are exposed to so few viruses that they rarely get sick.

Cipro's sister drug, Baytril, is being wasted on chickens.

Infected poultry are now being treated with Baytril, a drug very similar to the anthrax-fighting antibiotic Cipro. The FDA, health advocates, and an editorial in The New England Journal of Medicine have all urged Bayer, the producer, to withdraw the drug from the poultry industry. Bayer, veterinarians, and commercial poultry producers are in strong opposition. If Baytril is withdrawn, they argue, the United States will have to alter its poultry-raising practices.

That is exactly what needs to happen. It makes no sense to raise chickens or any other animals under conditions in which infection is routine, requiring the routine use of antibiotics.

Bayer officials say they need more proof of damage to humans before they will stop supplying Baytril to chicken producers.

Mad cow disease infiltrates Japan

"I think there is a problem with our inspection system." With those understated words, Japanese Agriculture minister Tstuome Takebe apologized to stunned Japanese consumers for allowing a cow infected with mad cow disease to be ground up and converted into animal feed, potentially spreading the deadly disease to other animals and consumers.

How did this happen? The underlying problem is rarely discussed. Cows are not designed to eat cows or other animals. They are herbivores. In recent decades, however, they have been fed a bewildering array of "feedstuff," including the ground-up carcasses of other ruminants. One of the unforeseen consequences has been the transmission of bovine spongiform encephalopathy or BSE, commonly known as mad cow disease.

When animals are taken off pasture and fed an unnatural diet, stringent regulatory measures must be in place to ensure that they are not given contaminated products. Unbelievably, Japan continued to import feed containing animal byproducts until January of this year, despite the threat of BSE. Stranger still, some of the imported feedstuff came from the European Union, which has the highest reported incidence of BSE. (The United States banned the feeding of meat and bone meal to cattle in 1997, 11 years after BSE was first diagnosed in Europe.)

Early this year, the European Commission issued a warning that Japan is one of 70 countries at risk for an outbreak of BSE because it has been importing large quantities of meat-based animal feed from Western Europe. According to the EU, the Japanese Government blocked the publication of the report when it was made available in June.

In August, a 5-year-old Holstein in Japan showed signs of having some type of neurological disorder. Samples were taken to see if the animal had BSE. What happened next is unfathomable. Before the test results could come back, the animal was slaughtered and rendered for fertilizer and animal feed. The tests results turned out to be positive, confirming the first diagnosed case of BSE in Japan. Unfortunately, the diseased carcass had already been rendered and sent back into the food chain.

According to Hironobu Naito, managing director of the Japan Livestock Industry Association, "I thought it was something that could never possibly happen in Japan."

Natural CLA from milk products is a better cancer-fighter than CLA pills.

Many people are not aware that there are many types of the cancer-fighting fat CLA, depending on minute differences in molecular structure. It now appears that, in test tube studies, the kind of CLA found in butter and animal fat is the most potent cancer-fighter. Human breast cancer cells were incubated in milk fat high in CLA or in an isolated form of CLA without any milk fat. The high CLA milk fat decreased cancer growth by 90 percent but the isolated CLA decreased it by only 60 percent. When the cells were incubated in linoleic acid, the kind of fat that is most abundant in grain and grain-fed animals, cell growth increased by 25 percent.

Milk products from 100 percent grassfed cows are as much as seven times higher in cancer-fighting CLA than ordinary milk and far lower in cancer-promoting linoleic acid.

(*Cancer Letters* 1997;116:121-130)

Why pay more for pastured poultry?

Recently, one of the suppliers in the Eatwild directory wrote to say that she either had to stop raising broilers or raise her prices. I suggested that she poll her customers. She did, and her customers said, "Keep them coming!" She is now selling her chickens at $2.25 a pound and can't keep up with demand. Why does it cost more to raise chickens and turkeys on pasture? And why are some people willing to pay the added price?

To begin with, people who raise 500 or fewer birds cannot take advantage of the economy of scale. Unlike people who run large confinement operations, they don't get price breaks on their chicks, feed, or equipment. Also, raising 200 birds on pasture requires a lot more labor than raising 10,000 birds in a building outfitted with automatic feeders and waterers and where the chickens never have to be moved daily to fresh pasture. In those enormous buildings, the birds spend all their lives on the same litter, breathing in air that becomes more and more polluted with ammonia as they grow.

Finally, people who raise pastured poultry don't take shortcuts like the large confinement operators. For example, they do not put arsenic or antibiotics in the birds' feed to stimulate their growth. They don't use special lighting to force the birds to grow faster. They don't feed ground up chicken or chicken litter to their chickens just because it's cheap and available. The supplier mentioned above finds that she makes very little profit even though she now charges 50 cents more per pound than she did before. She considers the poultry a "loss leader" for the other grassfed products she offers.

Although it takes an educated consumer to understand all of the benefits of pastured poultry, a quick glance at the two photos below tells much of the story.

An Oregon commercial poultry operation.

An Oregon pastured poultry operation.

Above news articles are compliments of ***www.eatwild.com*** *The Clearinghouse for Grass Fed Products*