

Wise Traditions

IN FOOD, FARMING AND THE HEALING ARTS

A PUBLICATION OF

THE WESTON A. PRICE FOUNDATION®

Volume 9 Number 1

Spring 2008

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President's Message

When Dr. Weston Price embarked on his worldwide investigations of nonindustrialized peoples, he did so with an open mind. When his patients asked him that all-important question, “What is a healthy diet?” he did not know the answer. He knew that a healthy diet produced freedom from dental decay, attractive facial structure, protection against disease and ease of reproduction, but he could not, before his investigations, tell his patients with assurance what to eat.

Dr. Price was a highly spiritual individual with leanings towards vegetarianism. He had hoped to find healthy peoples whose diets contained only plant foods. What he discovered instead was that all so-called primitive cultures consumed animal foods in one form or another. In some cultures, such as native tribes in Alaska and northern Canada, animal foods comprised almost 100 percent of calories; in others, such as the agricultural tribes in Africa, animal foods comprised only a small portion of the diet. However, all of the cultures he studied valued certain foods as sacred, necessary for healthy reproduction and the optimal growth of children, and these sacred foods were always animal foods. This discovery has been called “Dr. Price’s greatest disappointment.” He did not, as he had hoped, find a single vegan culture.

This issue of *Wise Traditions* examines the various arguments for vegetarianism and veganism, especially the proposition that avoidance of animal foods will make us healthier and will benefit the environment. Unfortunately, many people—especially young people entering the childbearing years—believe these arguments and adopt a vegetarian lifestyle, a decision that can have severe adverse consequences for the next generation. The Weston A. Price Foundation has consistently issued strong warnings about the dangers of veganism. Some individuals may do well on a lacto-ovo vegetarian diet if the eggs and dairy foods they consume are of very high quality (and the dairy foods should be raw). However, most people need other sources of animal protein, especially seafood. Those born with a very high requirement for zinc and vitamin B₁₂ will need to consume liver and red meat frequently.

The question of whether or not to eat animal foods is highly charged with emotion and often involves tenuous arguments about spirituality. The most spiritual act of all is to put one’s ideals into practice, to be active for beneficial change in the physical world. Without the good health and mental clarity that comes from a healthy diet, one that includes animal foods, this is very difficult if not impossible to do. And the responsibility for imparting this good health and mental clarity to the next generation rests on the shoulders of all those who would be parents. We hope that the articles in this issue will provide future parents with the requisite understanding well before their children come along—and not as a tragically disappointed aftermath. 

Letters

OUTSTANDING CONFERENCE

I have been implementing a healthy traditional diet in our family since 2003. I have had chronic fatigue for over ten years. I don't know whether I'll ever be completely recovered but this way of eating has been a lifesaver. Thank you for all your work.

I just attended my first WAPF conference and it was outstanding. First, the friendliness of the people and children overwhelmed me. Meal after meal, the conversations were as exceptional as the food. Complete strangers could discuss amiably about the wealth of information they had just experienced in the talks. Natasha Campbell-McBride's was the best presentation that I heard, but others were excellent, including those by Vicki Braun, Chris Masterjohn, Dr. Mary Megson, Dr. Veronica Doggett, Kathy O'Brien, Kathryn Pirtle and Dr. Phillip Incao.

Mary Claire Robinson
Rileyville, Virginia

Dr. Campbell-McBride will conduct an all-day seminar at this year's confer-

ence, to be held in San Francisco. All of the talks from the 2007 conference are available on CDs and DVDs. Visit westonaprice.org for ordering information.

SUCCESS LIST

Please add my name to the WAPF success list—I was researching nutrition for bones (to avoid taking Fosamax) when a friend told me about the WAPF guidelines. I had news in July, 2005, from my NP that I was very close to osteoporosis.

Forward to today. I have to go see my NP to get the actual numbers, but her recent note (result of a scan on December 10, 2007) indicates bone density "improvement." I joined our local chapter and have been buying local raw milk and other farm products for about 18 months.

Tish Cotter
New York, New York

AGILE AND ALERT

My daughter Isabella is now one year and nine months old. Even though

she came into the world with many risk factors, including an obese 43-year-old mother with a previous infant death, preeclampsia, a low birth weight of four pounds, and a difficult cesarean post-op period, she has turned out to be exceptionally strong, smart and is catching up physically to other healthy full term babies. People are amazed at how agile she is. She started talking fully at one year and five months. Her constant ear infections have stopped and so has her eczema and asthma that the doctors feared she would develop at a later age. Now she rarely gets colds.

This is all thanks to a religious following of all the principles of a nourishing traditional diet and feeding for a baby and toddler. She not only has the raw milk baby formula, but I give her lots of live yoghurt, kefir, organic eggs, sea salt, raw liver, raw tuna, meat stocks and whey.

Leesa Khalid
Dhaka, Pakistan

LED ME TO WAPF

I first came across your website



LEFT: Isabella Khalid came into the world as a low birth weight baby with many risk factors.

RIGHT: Today Isabella is a plump and perfect picture of health on a nourishing traditional diet.



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while researching online. I was actually looking for the best brand of commercial baby formula as my own milk was drying up. It's a long story but the main thing is that I found WAPF and my daughter, once a two-pound, three-ounce preemie, thrived on raw milk and bone broth formula, and is now a very vibrant, healthy, unvaccinated two-year-old.

My health has improved as well because of the website, links, books, etc. My life has changed dramatically and for the better. I now raise free-range pasture-fed chickens and eat as much as I can according to the dietary principles. Everyone I meet who I feel is really open-minded I introduce to WAPF. I'm getting the membership in my daughter's name to honor her and how she led me to WAPF.

Roxanne Bloomer
Cadiz, Ohio

ANTI-FLUORIDE ACTIVISM

Did you know that the American Dental Association issued a bulletin to their members this year warning parents to avoid using fluoridated water when mixing infant formula? Use of fluoridated water increases the baby's risk of the toxic effects of fluorosis. Only two out of an audience of about 50 at your recent conference were aware of this fact.

I was very pleased that Dr. Phyllis Mullenix was invited to speak at the *Wise Traditions* conference. For those unfamiliar with her story on fluoride research, the details can be found in *The Fluoride Deception* by Christopher Bryson. Her talk titled "Why You Need

to Protect Your Children from Fluoride" highlighted new research on the adverse effects of low-dose fluoride exposure such as we get with water fluoridation. For those who missed the talk you can get more information from a soon-to-be-released book she is co-writing for Second Look, a Tides Center project (www.SLweb.org, www.tidescenter.org), *The Fluoride Illness Handbook: A Guide to Identification and Treatment*.

In the meantime there is something that each concerned reader can do to help bring the practice of fluoridation to an end. Go to the Fluoride Action Network website (www.fluorideaction.com) and select the link to send a message to your congressional representatives asking for a moratorium on fluoridation and full congressional investigation. It takes many voices to force Congress to action. If you are a medical, dental, health, science, or water professional you can also select the link to sign the professionals' statement.

Shirley Jacobson, RN
Bellingham, Washington

RAW MILK STOPS SEIZURES

I am 29 years old and have suffered from epilepsy for 11 years now. I had my first seizure when I was 18. Medical doctors immediately put me on anticonvulsant medications. Aside from a few tests (MRI and Sleep Deprivation EEG), they never investigated what was going on in my life for possible causes or cures.

In these past 11 years I have had a few miscarriages due to the medication Dilantin that I was on, and I also almost

lost one of my children due to fetal hydantoin syndrome. This syndrome is a rare disorder that is caused by exposure of a fetus to the anticonvulsant drug phenytoin (Dilantin).

When I was 16 weeks pregnant with my son Elisha, my water broke and I found out that doctors had no hope that my baby would live through the pregnancy. It was then that I began looking for an alternative way to deal with my epilepsy during pregnancy. The only thing I found out at that time was that the amino acid taurine could help reduce epileptic seizures and for the duration of the pregnancy, that's all I used, but still had seizures, although at a much lesser degree.

Once my body got used to the Dilantin, it wouldn't work any more. I tried a few other anticonvulsants and the last one threw me over the edge; I became anorexic, was constantly sick and wanted to commit suicide. (These side effects were all listed on the drug's website.) That's when I got desperate and began really searching. Thankfully I have found several natural healers!

I have been going to a chiropractor twice a week, and I eat almost exclusively all organic food. I take fish oil, amino acids L-tyrosine and taurine, a very high quality multivitamin, coconut oil and raw milk! When I am out of the raw milk for a few days, I begin to have some auras and seizures. It is essential for me to be able to keep my supplements and milk around so that I can live a normal life.

Since eating a healthy diet that includes raw milk, I no longer need medi-

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cation in the day time. I have reduced my dosage from 400 mg a day to just 100 mg at night. Now I am no longer sleepy, I have my memory back, I am not at a loss for words, and therefore my job of home schooling five kids (four of my own and one fantastic niece!) is much easier. I hope and pray that we will continue to have the freedom that our forefathers dreamed of when they gave their lives for us to be able to think for ourselves and make our own wise decisions!

Thanks for all you are doing to help Mark McAfee and Organic Pastures Dairy. I'll be checking out the website to see what is going on and how I can help.

Jill Price
Discovery Bay, California

SLOW COOKING AND AGEs

Concerning the article on Slow Cookers, in the box "Preventing AGE-Related Effects" on page 54 of the Winter 2007 *Wise Traditions*, the author is to be congratulated for bringing to our attention the damage that can be caused by advanced glycation end products (AGEs) from cooking at temperatures higher than boiling and cooking without liquids.

However, there are some errors. Marinating foods is not discussed in reference 6 as noted. The only criterion is temperature; if the temperature is high, then protein- and fat- containing foods are altered to form more of the damaging AGE compounds. Marinades should not be considered protective when food is heated above boiling as the foods can still reach high temperatures in the oven,

skillet or on the grill no matter how much marinade is used.

Also, the article included microwave cooking along with the damaging frying, barbecuing, and broiling methods. This is not correct. Reference 8 explains that "Microwaving was shown to increase AGE content similar to boiling cooking methods..." This is because the microwave energy is absorbed by the water molecules in the food, which cannot exceed boiling temperatures.

An omission by the author is that foods that do not contain substantial protein or fat ingredients make few AGEs when cooked at high temperatures. This group includes baked grain products like bread.

AGE production is a very important topic; we should only boil or microwave foods that contain substantial proteins and fats. Although broiling, BBQ, baking and frying create good tastes, these are at a high AGE cost.

Jay Caplan
Brentwood, Tennessee

We do not recommend the microwave for a number of reasons, including destruction of nutrients and many unknowns. Research indicates that AGEs in food are partially or largely degraded by gut bacteria and/or rapidly excreted via the kidneys and are not harmful to human health (Mol Nutr Food Res 2007, 51, 1085-1090). However, AGEs created in the blood stream when blood sugar is high can have many deleterious effects in the body, although carnosine (from meat) and low levels of polyunsaturated fatty acids provide protection against

formation. Cooked meat and fat are not the only sources of dietary AGEs. They are also found in coffee and crusted and/or toasted bread and cracker products.

ANOTHER VIEW

In regards to the article "The Slow Cooker Rules!" in the winter edition of *Wise Traditions* I thought that I should let you know that slow cooking is contraindicated for MSG-sensitive people. We have received a number of reports from MSG-sensitive people who have experienced adverse reactions from meals prepared in a crock pot.

The extended cooking time associated with slow cooking in a crock pot serves to break down the protein into individual amino acids, at least in part, resulting in some processed free glutamic acid (MSG). That is why foods taste good if prepared in a crock pot. Of course, MSG-sensitive people vary in their tolerances for MSG and only experience adverse reactions when they ingest an amount of MSG that exceeds their individual tolerance for it.

Jack Samuels
San Diego, California

DISAPPOINTMENT

I cannot for the life of me understand what the reason could be for publishing the letter bemoaning organic products imported from China. This is the new xenophobia, spouting hate in the name of "buying local." There is no reason to believe that a third party certification on products from China means less than the same certification on domestic products. I'm surprised and disappointed that the

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Weston A. Price Foundation has published this nonsense.

But my disappointment doesn't end there! In another letter, a mother expresses her relief over her child's grandparents having lived 5000 miles away just because they gave them cookies! Talk about idiocy! I only wish my son had any grandparents at all to offer him home-baked sweets.

Are the above letters really ideals that we want to foster? Is this the message of the Weston A. Price Foundation? If so, I hesitate to commit another dollar in support of your efforts. I have always applauded and applied the principles outlined by Weston A. Price, but I worry that your organization is devolving into a radical, hateful and self-righteous community. I truly hope that you'll put more thought into the words you publish in the future.

Marianne Schmidt
Ida Grove, Iowa

Given the recent problems with products imported from China, consumers have good reason to be skeptical of that country's organic standards and certification procedures. For that matter, given the industrialization of organic production in the US, consumers have good reason to be skeptical of even domestic organic products. "Organic" milk from confinement cows is a good example. The point of the letter on "organic" products from China was to highlight the injustice whereby domestic small farms are subject to economic hardship, intense oversight and even harassment, while farm products (often subsidized) are shipped long distances from overseas where

such oversight is not even possible. Regarding the mother who wished to limit sugar consumption in her children, she faces a dilemma encountered by many modern parents engaged in providing their offspring with a healthy diet. Very often relatives are unsupportive or even hostile to these efforts. The health-conscious parent in this situation walks a delicate line of protecting her children while avoiding remarks that may offend. Sometimes the best solution is limited contact. We would not characterize the sentiments expressed in these letters as "hateful."

OUR MEDICATED CHILDREN

Did you happen to see the recent PBS program entitled "Our Medicated Children"? The program was about all the problems (ADD, ADHD, ODD, autism) affecting our kids, which have ballooned over the last 20 or 25 years. The "solution" is to medicate them and the results are awful. My husband and I were dumbstruck. Can't anyone see that the problem affecting so many kids all over the country must be very fundamental—like the food! If you go to PBS.org you can watch it.

We noticed that the mom of one kid who had lots of problems served him corn dogs, Gatorade and chips for his meal. Most of the moms on the program didn't look healthy either, so they were probably not healthy when they conceived. This is just so, so sad.

Judith Howard
Minot, North Dakota

ANGST AT NEW FOOD REGULATIONS

I've so often wished that I'd had a well-written letter to express my angst to various organizations regarding new food regulations. For example, the institution that gives accreditation to my son's daycare center has a new rule that nothing homemade is allowed on the premises, presumably to prevent any trigger to a student's peanut allergy. The ridiculous part is that there is not one student with a peanut allergy! Their response is that anyone can develop one at any time.

So now, instead of homemade brownies or cookies for a "special snack day," people have to bring in Oreos, Goldfish, and, in essence, foods with high fructose corn syrup, soy lecithin, etc. I've tried to write a letter, but it just doesn't have the authority of one written by someone with all the facts. This isn't the first instance that I found myself wishing that the Weston A. Price Foundation had some sort of resource for its members to draw upon when we need to be vocal but don't have the words! We could also use a letter arguing for full-fat milk. Any thoughts?

Katie O'Neill
New Canaan, Connecticut

We hope you will summon confidence in yourself to write that letter—nothing has more authority than the opinion of a parent concerned about her children! There is plenty of referenced material on our website that you can use. And WAPF is happy to provide free editing once you have put something in your own words!

RAW MILK SAFETY

I have been considering starting on raw milk, but have been unsure as to its safety, so I started some research. These are my results. All of this is based on data from the CDC and USDA. I'm a scientist by training, so I'm always looking at data.

On the CDC website we learn that from 1998 to May 2005 CDC identified 45 outbreaks of food-borne illness that implicated unpasteurized milk or cheese made from unpasteurized milk. These outbreaks accounted for 1,007 illnesses, 104 hospitalizations and two deaths. In most of these reports, raw milk is "implicated," not "laboratory confirmed." But let's assume all these cases are laboratory confirmed. Making these assumptions, we have about six outbreaks a year, with 143 people getting sick each year from drinking unpasteurized milk or consuming cheese made from raw milk. This may seem a very tough sell for raw milk because you can argue that not many people drink raw milk.

The most important piece of data would be the percentage of people who drink raw milk that get sick. I finally did find this info, in a very roundabout way! I compared this info on raw milk outbreaks to the CDC data on overall food-borne illnesses. In 2006, 17,252 laboratory-confirmed cases of food-borne infections were counted in a cohort of 15 percent of the US population. Extrapolating from this, we have about 115,103 cases of food-borne illnesses in the US in 2006 alone, 143 of which came from drinking unpasteurized milk. Note that these are only lab-confirmed cases. According to another CDC website, approximately 76 million Americans suffer from a food-borne illness every year, with 5,000 deaths each year from this cause.

If there are 143 cases of raw milk-borne illness per year compared to a total of 115,103 cases of food-borne illness, then one-tenth of one percent of all food-borne illnesses, or about one in 800, is due to drinking raw milk.

Still, we need to know what percentage of Americans drink raw milk. If 5 percent drink raw milk, then the percentage of illness is very small. If only 1 out of 100,000 drink raw milk, then the percentage of illness is very high. So it is very important to find these data. . . and I finally did! The data I found for what I wanted were for the pathogen *Listeria*. Very interesting information, which also allows me to estimate how many servings of raw milk are consumed in the US per year! Then I can go back to calculate estimates for the above data.

Here's the link. Scroll down to page 25, Summary Table 4 at www.fsis.usda.gov/PDF/Slides_092806_JSofos.pdf. This table gives total cases of *Listeria* in the US as well as their food source. Most interestingly, it estimates the total number of cases per serving of that food eaten. This is the data I wanted. As we can see, unpasteurized milk is actually the fourth highest risk for *Listeria* illness, with 7.1×10^{-9} illnesses per serving. However, take note that the highest risk is deli meats, which have ten times the rate of *Listeria* illness per food serving, at 7.7×10^{-8} .

To put that in perspective, for every serving of deli meat you eat, you have ten times greater risk of getting sick from *Listeria* than from drinking a glass of raw milk. Smoked seafood (like lox) and precooked shrimp have about the same rate as raw fluid milk.

Now, from this data, I can also calculate how many servings of raw milk are served per year in the US. There were 3.1 cases of *Listeria* from drinking raw milk per year, according to that chart. There also were 7.1×10^{-9} illnesses per serving. From this I can reverse calculate that the USDA estimates that there are a total of 437 million servings of raw milk consumed in the US per year. I can also calculate that there are about nine billion servings of pasteurized milk drunk in the US per year. That is 20 times the number of servings of raw milk, which leads me to conclude about 5 percent of the population, more or less, drinks raw milk, and 95 percent drinks pasteurized.

Out of a total of 437 million servings of raw milk in the US per year, 137 people got some sort of illness. On a per serving basis, that is 3.18×10^{-7} . That means you would have to drink 3.18 million glasses of raw milk before you might expect to get an illness of any kind due to that milk. (Actually, you'd have to consume far more glasses than that, because those 137 illnesses also included raw cheese, not just raw milk.)

Just to give some further perspective, 16.5 percent of all broiler chickens tested by the FDA in 2006 contained salmonella bacteria. The rate of human salmonellosis in the US was 14.7 cases per 100,000 people in 2004. This is 4200 cases per year. Since 16 percent of the poultry have confirmed salmonella bacteria in them, one might assume that a lot of those cases come from eating chicken. But we don't hear a big uproar about that, do we? The USDA hasn't banned people from eating chicken.

Greg Bravo
San Francisco, California

When you look at the statistics carefully, you find that virtually all of the Listeria cases from raw milk products occurred in so-called raw soft cheeses. It is impossible to tell whether these cheeses are in fact made from raw milk because the test for lack of pasteurization is based on the presence of the enzyme phosphatase, which is produced by cheese bacteria. In any event, confirmed cases of Listeria from raw fluid milk are essentially nonexistent.

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MOVED AND GRATEFUL

Yesterday I attended the hearing involving the raw milk farmers Barb and Steve Smith and Meadowsweet Farm in New York. They are providing raw milk products through a limited liability corporation, which the state opposes.

So much is in my heart after being present at the hearing. First, how moved and grateful I felt by all who have created the Farm-to-Consumer Legal Defense Fund. How amazing to witness the changes that have been achieved with this organization in place. I remember

the farmers I have known in the past who have been in the situation the Smiths and others have gone through, but without the resources to hire legal counsel provided by the Fund. When I think of the feelings of helplessness, hopelessness, anger, and rage—to be so alone in their plight—and then to witness in person yesterday the fine legal support the Smiths had, I am overcome with a profound sense of pride and joy. I was moved to tears. Never has there been such a representation for farmers, ever!

Thank you, David Cox, for your

passion and commitment. With your integrity and commitment you have restored my belief in our court systems and the law.

I was also moved by the Smiths and the many family farmers like them across the country, as they so courageously do what they feel called in their souls to do, at the risk of losing their meager livelihood!

However, I have to say that I was disappointed by the small number of people from the community who showed up. In part this was due to the hearing's

IS YOUR MATTRESS MAKING YOU SICK?

Imagine sleeping for eight hours per night, all the while breathing in dangerous chemicals that have been proven to be toxic and carcinogenic to human beings. Does this sound far fetched and crazy? Yes, it does. But it is also true.

A new law just put into effect, on July 1, 2007, requires all mattresses sold in the United States to be flame proof. This was spearheaded by the ISPA (International Sleep Products Association) with the stated purpose of making mattresses safer from fires. At least, that is their stated position. But on closer inspection, it appears there is a sinister motive. Fire safety is merely a farce; the real reason is to limit competition by effectively putting smaller mattress companies out of business, as they cannot comply with this new law. There are over 1,000 mattress manufacturers in the United States, and many will have to shut down their operations because it is too cost prohibitive to comply with these new guidelines.

Mattress sales are big business. Over 37 million new mattresses are sold each year, and smaller, specialty mattress manufacturers and imports have been taking away a large share of the big-three sales (Serta, Sealy, Simmons).

The challenge of making mattresses flame proof is that large quantities of harsh chemicals are needed, such as antimony trioxide, decabromodiphenyl oxide, formaldehyde, boric acid, and vinylidene chloride. These are all harsh and toxic chemicals that can have catastrophic health consequences for American consumers.

As you can imagine, this has caused a consumer backlash, as many people are experiencing symptoms such as rashes, itchy skin, runny nose, difficulty breathing and light-headedness. The long-term effects of many of these chemicals have not been determined, and could prove to be deadly by causing various forms of cancer.

There is one piece of good news, however. People who are adamantly opposed to sleeping with these chemicals have a way out. The law allows anyone to claim an exemption, as long as they have a prescription from a doctor. But there are only a handful of mattress manufacturers who will even make such a mattress.

Many mattress manufacturers have been in compliance with this law for the last two years, so if you have purchased a mattress in that time, you could have been affected. Of course, you will never know whether your mattress is dosed with chemicals because there is no labeling requirement. The ISPA made sure of that, as they don't want people to know what they are sleeping with.

The solution is either to live with it (and risk your health), or purchase a toxin-free mattress by getting a prescription from your doctor. For more information, you may visit www.PeopleforCleanBeds.org or contact me at DrK@Technology-Bedding.com, (301) 979-9345.

Masood Kureshi, DC, Germantown, Maryland



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several hour postponement caused by an attorney's plane delays. Many people were driving over an hour to show support but could not stay as they had kids coming home from school and had to leave before the hearing. In the end, there were only about 40 people in the court room.

The journalist David Gumpert made an important comment in our after-court conversations in the parking lot, with subzero wind chills. He said that "this needs to be more of a community issue, not a farmer issue."

Fortunately there will be a new hearing in Albany this summer, which is closer to that part of the state where the number of raw milk drinkers is huge! And we now have lots of time to prepare for a large citizen representation in Albany. Let's hope we can get hundreds of people at the hearing this summer. I am hoping that the low turnout for the Smiths will inspire all of us across the state to show that raw milk is a community issue, not just a farm issue.

Elizabeth Benner
Rochester, New York

COCONUT OIL FOR CRAVINGS

I use coconut oil as medicine for my clients, many of whom are addicts, and see very interesting results with them and on myself.

I have been struggling with my sugar addiction for years and done everything (biochemical repair, 12-step, food changes, etc.) but still have cravings now and then. And I have several clients with terrible cravings and relapses. But once I started them on coconut oil—one tablespoon with a cup of warm water between

every meal—they start feeling great. I also take away all milk products, which is sad but it seems like the amino acids in casein in milk (probably not raw milk but we can't get that here) are somehow creating endorphins and then craving.

The most important observation I have made is that people with chronic muscle and joint pain become pain free! This is not the case when they only remove milk but it happens when they also have been on coconut for a week. If they stop taking it the pain and fatigue in the muscles comes back. I wonder whether the short- and medium-chain lipids in coconut oil are somehow having this effect? I think it is a miracle!

Bitten Jonsson, RN
Sweden

FOSTER YOUR MOSS

Every sunny day at noon I sit on my front stoop and soak up the free vitamin D. My feet rest on the red bricks of my garden path. When we first built the brick path the stone dust between the bricks was "naked." Moss is the protective flora of a brick path. Perhaps our guts are like my path. My path grows weeds.

If I were smart, I would have carefully tended my young path for its first year. I've seen Martha Stewart pour milk over new landscape areas to foster moss growth. I didn't pour milk. I just moved on to the next landscape project. I had a bare yard to fill up.

Our guts are supposed to get seeded with "moss" from our mothers during our early months, and nurtured with their milk. Unfortunately, many mothers don't have moss or milk (or time) to spare. So,

paths can get off to a bad start, like mine did.

Even if a person's gut has a good start, we may choose to kill off our moss with things like antibiotics. It's like spraying the path with weed killer, killing both moss and weeds. The path may look better temporarily, but it is actually more vulnerable (after the smoke clears).

Since I'm a lazy landscape gardener (I prefer my food gardens), some of the walk weeds get tall and even bear pretty flowers. How embarrassing! They block the path. Those weeds put down such big roots they can't be pulled out. We have to "weed-whack" the path. I think weed-whacking is like taking an herbal cleanse to get rid of candida and parasites.

It is possible that heavy metals rain down upon my walk, just as our guts are exposed to heavy metals through pollution, cavity fillings and vaccinations. Certain weeds may be able to tolerate this pollution a lot better than moss. Certain weeds may even thrive on it. But moss needs a pristine environment. This could make fostering moss most challenging. It is quite possible that plants that thrive in pollution might actually capture the pollution inside their bodies. Nature can be smart that way. But if I want moss to grow, I need to remove those full grown weeds from the path area and not let them grow back in. Elimination is important.

After weed whacking (cleansing), for one beautiful moment the path is clear. But the effect is temporary and imperfect. Stumps and low prickly things hurt your bare feet when you walk the newly cleared path. In no time the path



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is exposed to seeds via birds or wind, and baby weeds take root. Whacking controls weeds and discourages them, but doesn't prevent them or clear their roots.

Prevention and clearing only come from moss. Eventually I got smart. I took a small piece of moss from the north side of my house, broke it up into pieces, and put it between the bricks in several spots. Planting moss is like eating live culture foods. If I were really smart, I would plant moss all the time. But as I said, I can be a lazy landscape gardener. Lucky for me, the moss took hold, and is slowly inching its way between the bricks.

My moss is so beautiful in winter, bright green in a barren world. Winter is when the mossy zones slowly encroach on the weedy zones of my path while the weed roots are resting and the weed seeds are waiting for spring. In winter, moss is thriving. Winter is a special niche season for moss. Setting up a niche environment for our human good flora may mean going on a low-carb diet, or raising body temperature, or exercising, or sitting in the sunshine.

It has been ten years since we built the path. I look out over my curving brick walk. The emerald green moss gives a quiet, ordered, ancient feel. There are still some naked spots where weeds will come up this spring. It isn't an easy thing to create a protective flora. It may be a lifelong challenge.

Renee Cyr
Pepperell, Massachusetts

PRISON FOOD

Thank you for sending the WAPF materials including information on the dangers of soy. This will be helpful as I take steps to get the soy removed from our prison food. From past experience, I've found that the authorities usually cave under the weight of overwhelming evidence. I believe that the soy in the prison food is what led to my thyroid cancer and the removal of my thyroid gland.

You might be interested to know that there is no butter at all available for purchase or served to us. The only dairy product we get is skim milk made from powder, or reconstituted. I have had no dairy products other than skim milk in 17 years. The only meat we are served is ground beef loaded with TVP as an extender, pork once every other week, chicken leg quarters once or twice a week, turkey (well, they tell us it's turkey but it could be almost anything because it's all mixed up in some Frankensauce) and fish.

The fish is not like any fish you have ever had. We are served the portion-control scraps. This is the trimmings after the center has been removed for some restaurant. These scraps are seriously dredged in several kinds of flour and fried in soy oil. Because the skin and many truly disgusting parts of the fish are simply left in the mess, most men refuse to eat the abomination. I really love fish and spend most of the time in the chow hall trying to pick the white flesh of the fish from the breasting and skin, etc. The total fish flesh that I am able to consume is about 25 percent of the weight of the

total serving. The soy oil causes all manner of intestinal problems.

We are able to purchase many items from our commissary to supplement the unacceptable diet the state provides for us, but unfortunately, after an analysis of the product ingredients, I find that almost everything contains soy.

Name Withheld

We strongly recommend eating the skin and "disgusting" parts of the fish, which would provide much-needed fat-soluble vitamins in an otherwise deficient prison diet.

VANISHED TINS OF FAT

Now in my 80s, I have eaten butter all my life, not just a little smear, but I have plastered that so-called yellow poison on my bread, my toast, mashed potatoes, you name it, I have always applied it with a heavy hand. And I will not buy meat unless it has fat on it. My blood pressure is normal and I am as active and mentally alert as someone in their 50s.

Back in the 1940s, the doctors told my great grandmother not to eat fat—they were doing it even then. "But I like fat," she said, as she sliced through a rolled roast of beef. She ignored them and lived to an advanced age.

When I was young, fat was never wasted. Drippings from the roast were kept in one tin and fat from the bacon in another. They were later used for frying, smeared on bread and for making suet puddings and many other delicious edibles. We did not use oils, except for cod liver oil. We drank full fat milk and in



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my farming days, we would not consider butchering and dressing a thin animal. And we spread additional fat across the roast before it went in the oven.

A motto to live by: listen to your body, not the dietitians. Enjoy your food and don't be afraid of fat. It's not going to kill you. And keep those tins of fat on hand!

Geoffrey C. Morell
Washington, DC

DISAPPOINTING REVIEW

I read *The China Study* by T. Colin Campbell soon after it was published. The book impressed me for several reasons: the impeccable credentials of the author; his sharing of the conclusions from his research through this book; the carefully reasoned presentation of much data about correlations between nutrients and such epidemic problems as heart disease, cancer, diabetes, obesity, and autoimmune diseases; and finally the understated, academic tone of the book.

Some time later I read the disappointing review of *The China Study* by Chris Masterjohn in *Wise Traditions*. Instead of beginning by giving T. Colin Campbell's impressive credentials to address a book on nutrition to the American public, Mr. Masterjohn began instead with a guilt-by-association attack on Campbell by stating that he is on the advisory board of an organization that has a pro-vegan agenda and has ties with several animal-rights organizations that advocate "terrorist" tactics to disrupt research that uses animals. Mr. Masterjohn also calls the book a "tower

of vegan propaganda." Such polemics divert the reader from Campbell's story of how he became convinced that animal products correlate positively with the serious diseases of Western society, a conviction that led Campbell to take up a vegan diet for himself and his family.

Mr. Masterjohn describes on his website his experience as a vegan, his discovery of the benefits for him of eating meat, and his discovery of and involvement in the Weston A. Price Foundation as a community of like-minded individuals. That's fair enough, but Mr. Masterjohn's personal experience cannot but predispose him to discredit the conclusions of *The China Study* by any means at hand. Thus Campbell is accused of unwarranted generalizations, ignoring data contrary to his thesis, faulty logic, and distortion of the results of the China project as originally published in the research monograph. To what extent these represent careless, or biased, research by Campbell and to what extent they represent his disagreement with the views promoted by the Weston A. Price Foundation is difficult for this layman to determine. The impression given by the review is that *The China Study* is one non sequitur after another, rather than what it really is, a well-told story of the data and logic that led a prominent nutritional scientist to adopt a vegan diet.

In my eyes, some of the Weston A. Price Foundation authors discredit their position by abusing their opponents with insults. I for one am not impressed when the competence and honesty of Colin Campbell are publicly questioned. If the

Weston A. Price Foundation is seeking to engage in serious debate over nutritional questions, a superior rhetorical strategy might be to show respect for those with a differing viewpoint, to speak moderately and reasonably, and to bring forth relevant anecdotal and statistically significant information.

This writer urges readers of *Wise Traditions* to read *The China Study* and decide for themselves whether it is "vegan propaganda" or a reasoned presentation of fifty years of nutritional research. Readers can read Campbell's response to two negative reviews of his book, including Masterjohn's, at http://www.vegsource.com/articles2/campbell_china_response.htm.

Many of us are convinced that nutrition is important to healing and good health, and we are searching for helpful information as to what we should eat. Thus we read about this subject: *The China Study*, *Wise Traditions*, Michio Kushi, *The Maker's Diet*, Dr. Sherry Rogers, and others. I'm sure many join in my frustration with the strong disagreements and dismay over the tone of the debate.

John R. Cogdell
Austin, Texas

We reserve the right to criticize anyone who misrepresents their research findings, regardless of their "impeccable credentials." ☺☺

Gifts and bequests to the Weston A. Price Foundation will help ensure the gift of good health to future generations.

Caustic Commentary

Sally Fallon and Mary Enig take on the Diet Dictocrats

INFANTS AT RISK

The Cornucopia Institute has released a report that questions the alleged benefits of adding “novel” omega-3 fatty acids DHA and ARA, produced in laboratories and extracted from algae and fungus, into infant formulas. Formula makers have been marketing infant formula with the added DHA and ARA as “closer than ever to breast milk.” Pediatricians report that these advertisements make it a lot harder for health professionals to convince new mothers to breastfeed. Hospital nurses have often call it “the diarrhea formula” because of its association with long term serious diarrhea, and there is no evidence that these oils actually confer any long term benefit to the infant’s brain and eye development as claimed. Most disturbing is the fact that these fatty acids are extracted with hexane, a petroleum product that certainly does not exist in breast milk and is not allowed in organic foods. Yet the manufactured DHA and ARA are promoted as key ingredients in organic baby formula. The Cornucopia Institute is urging parents of infants who have reacted negatively to the formula to report these adverse reactions to the FDA’s Safety Information and Adverse Event Reporting Program (www.accessdata.fda.gov/scripts/medwatch/). They are petitioning the FDA for a warning label on formulas containing these manufactured oils. For details visit www.cornucopia.org.

THEY WERE RIGHT

Opponents of fluoridation, often ridiculed as extremists, have been vindicated with the release of a new study in the prestigious *Scientific American* magazine (January, 2008). According to the article, fluoride can “subtly alter endocrine functions, especially in the thyroid” and also lower IQ. The US

Centers for Disease Control lists water fluoridation as one of the ten greatest health achievements of the 20th century. Hard to believe that fluoride provides any benefit at all as pediatric dentistry is the fastest growing discipline in medicine. The American Dental Association has even issued warnings not to mix baby formula with fluoridated water or allow children to overuse fluoridated toothpaste.



PRIZED ELK COWS

An astute member has sent us an article on elk hunting from the *Billings Gazette* (January 27, 2008), which includes a 1910 photograph of elk hunters with the following caption: “In those days, cows were prized more than bulls, because hunters believed that cows usually carried more fat and would yield better meat.” Before the food police came along with their lowfat dictums to spoil the basic act of eating, everyone knew that fatty meat was better.

SEIZURE-FREE

“Diet keeps epileptic children seizure-free” reads the headline of an article posted at theage.com.au. It describes how a high-fat, “ketogenic” diet is controlling seizures in children not helped by medications. The meals are based on fatty foods like heavy cream, bacon and butter with about 90 percent of calories coming from fat. Of course, the “experts” are warning about “risks” and recommend that the diet be instituted only as a last resort, after drug treatment has failed, and then continued no longer than two years. Then parents are urged to increase the percentage of carbohydrates, hoping that the seizures will not return. Of course the sensible thing to do is to try this essentially healthy diet as a first and basic recourse, and continue it for as long as possible, even for life.

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MISLED FOR THIRTY YEARS

The recent publication of results from the ENHANCE trial, which found no benefit from a drug combination that significantly lowered LDL-cholesterol but did not reduce plaque formation in the arteries nor confer a projected reduction in mortality, has received widespread attention in the media, including an article “Do Cholesterol Drugs Do Any Good?” in the January 17, 2008 issue of *Business Week*. According to the article, many researchers now question the wisdom of prescribing cholesterol-lowering statin drugs to the general population—drugs the pharmaceutical industry believes should be taken by 40 million Americans. Growing doubt among the ranks of medical professionals has emerged with the accumulation of reports on serious side effects from cholesterol-lowering measures: muscle weakness, neuropathy, heart failure, memory loss, depression, fatigue, digestive disorders and cancer. Results of the ENHANCE trial have led to the startling revelation that the studies on which the FDA based its approval of statin drugs looked only at surrogate outcomes, namely the lowering of LDL-cholesterol and raising of HDL-cholesterol, as a substitute for a clinically meaningful endpoint, namely the prevention of heart attacks. Up to this point, drug makers have not had to show that statins actually save or extend the lives of patients. Researchers are also re-examining the promotion of soul-numbing lowfat diets. “Dietary fat recommendations. . . may have led to significant and harmful unintended consequences,” wrote the authors of a January 22, 2008 article in the *American Journal of Preventive Medicine*. Official government guidelines have indeed misled Americans into abandoning nutritious whole foods such as butter, eggs and organ meats, foods universally recognized by traditional peoples as necessary for good health and optimal development of children.

STATIN DEATH LINK?

Students and colleagues at University College School, Hampstead (London), were mystified last April when chemistry master Dr. Allan Woolley, 53—described as “immensely popular and inspirational”—was killed while standing on the tracks at North Wembley railway station, holding a note that read: “Just burn my wretched body without ceremony.” Family and friends were so convinced that suicide was out

of character, they insisted that his inquest examine the role played in his death by the statin drug he was taking. “My brother had no history of depression and was in full-time employment,” wrote his sister. “The family believe that Allan did not intend to kill himself. My brother had had nightmares which were so terrible he could not distinguish between them and real life.” Woolley had also suffered 15-minute blackouts when he could not recall his actions. The verdict blamed the drug simvastatin (Zocor) for his death. The National Health Service in the UK has made a major push to ensure that doctors prescribe the drug, claiming that “major studies have consistently found that the benefits of statins. . . massively outweigh the side-effects” (<http://www.medicalnewstoday.com/articles/94642.php>).

MORE NEWS ABOUT VITAMIN D

Scientists are reporting more good news about vitamin D. Researchers at the Harvard Medical School have discovered that low vitamin D is associated with an increased risk of heart disease; those who had high blood pressure and low vitamin D levels were particularly at risk. The study, which began in 1996, looked at over 1700 people with an average age of 59. Those with levels of vitamin D below 15 ng/ml had twice the risk of heart attack, heart failure and stroke compared to those with higher levels (news.bbc.co.uk, January 8, 2008).

The pharmaceutical industry has responded to the spotlight on vitamin D with a twofold strategy: by supporting studies that look into potential harmful effects of vitamin D supplementation and, in studies looking at benefits, by using the plant form of vitamin D—vitamin D₂—which is much easier and less expensive to manufacture but much more difficult for the body to utilize, and possibly detrimental. An example of the latter is a study showing that administration of vitamin D₂ plus calcium to elderly patients resulted in a 23 percent reduction of the risk of falling (*Archives of Internal Medicine*, 2008 Jan 14;168(1):103-108). An example of the former is a paper suggesting that vitamin D supplementation can inhibit gene expression and lead to auto-immune disease (<http://www.medicalnewstoday.com/articles/94642.php>). “We have found that vitamin D supplementation, even at levels many consider desirable, interferes with recovery in these patients,” said J. C. Waterhouse, PhD, executive

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director of Autoimmunity Research, Inc. Waterhouse does not say whether supplementation is with vitamin D₂ or D₃, or whether it is given concurrently with vitamin A, needed to prevent vitamin D-induced deficiency of this fat-soluble, immune-enhancing nutrient. Another recent report blames brain lesions on vitamin D—again without specifying what kind of vitamin D the subjects were taking and whether the vitamin D intake was balanced with vitamin A (http://bacteriality.com/2007/10/24/brain_lesions/print/). With statins under fire and consumers looking for more natural alternatives to prevent heart disease, we predict more confusing news reports on vitamin D in the future.

FORMULA RECALL

You won't read about these things in the newspapers, but there have been many recalls of infant formula, such as the 2002 FDA recall of 1.5 million cans of powdered infant formula. The formula, manufactured by Wyeth and sold under many different brand names, was found contaminated with *Enterobacter sakazakii*, which in rare cases can cause bacterial infection in the blood, meningitis, or necrotizing enterocolitis, a severe intestinal infection (<http://www.fda.gov/bbs/topics/NEWS/2002/NEW00849.html>). No illnesses associated with this recall were reported but they have occurred in the past. The dirty secret of the formula industry is that powdered formula is never sterile. Liquid formula is less likely to contain pathogenic organisms because it is effectively sterilized in the jar, but the downside is that it contains carrageenan as an emulsifier, which can cause severe digestive problems.

DISTILLER GRAIN FOR CATTLE

Back in the 1800s, most milk in urban areas came from the so-called swill dairies, inner city confinement dairies where the cows lived in unimaginable filth and consumed the spent swill from nearby breweries. The death rate among inner city children consuming this milk approached 50 percent, not only because the milk was dirty but also because it lacked nutrients, so thin, in fact, that powdered chalk was often added to make the milk white. Fortunately, the distillery dairies are a thing of the past. . . or are they? A common practice today is to feed cattle—both dairy cattle and beef cattle—what's called "distiller's grains," a byproduct of the ethanol distilling process. Even more ominous is the fact cattle fed distiller's grain have an increased prevalence of the virulent *E. coli* O157:H7 in their hindgut (http://www.biologynews.net/archives/2007/12/04/kstate_researchers_findings_on_e_coli.html). The pathogen ends up on the meat, in the milk and in the runoff water from the farms. Such milk should of course be pasteurized and the meat well cooked—or just avoided entirely by buying from pasture-feeding farmers. But the runoff water ends up on fruits and vegetables and even, perhaps, in the water used in pasteurizing plants.

ASPARTAME AND THE BRAIN

A review paper from South Africa paints a frightening picture of what the artificial sweetener aspartame can do to the brain. The breakdown products of aspartame are phenylalanine, aspartate, diketopiperazine and methanol. Methanol further breaks down into formate, which is cytotoxic and can cause symptoms ranging from fibromyalgia to depression to blind-

VERY SPECIFIC FOOD PYRAMID RECOMMENDS TWO TO THREE SHRIMP SCAMPI SERVINGS PER YEAR

Satire from *The Onion*, January 16, 2008

WASHINGTON—The U.S. Department of Agriculture unveiled an updated, extremely detailed food pyramid Monday, which may redefine the way Americans plan their yearly intake of such food groups as shrimp scampi, garlic bread, and steak tartare with a side of mini grilled corn on the cob.

"Two servings of shrimp scampi per year is absolutely essential, and it is preferable that one be a microwaveable meal from the Contessa frozen-foods line, and the other be eaten at a fancy restaurant, like the Lobster Tail off Route 22, on a nice summer evening with the woman you love," acting Agriculture Secretary Chuck Conner said. "All healthy adults should also incorporate four bowls of Cookie Crisp cereal, 223 to 228 salted pretzel rods, one plate of Hamburger Helper cheeseburger macaroni, six to eight Little Debbie Cosmic Brownies, and no more than two Fla-Vor-Ice-brand ice pops into their yearly diet." The nutrition guide highly recommends taking two bites from an undercooked hot dog on July 12 every year and then throwing the rest away.

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ness; phenylalanine may cross the blood-brain barrier and cause severe changes in the production of very important neurotransmitters. The authors describe the mechanisms by which excessive aspartame ingestion is involved in the development of certain mental disorders and also in compromised learning and emotional functioning. Aspartame changes the levels of dopamine, serotonin and other important chemicals in the brain, resulting in Parkinson's, Alzheimer's, endocrine disturbances, obsessive-compulsive disorders, attention deficit and reduced learning ability. Pregnant women who consume aspartame risk damaging the fetal nervous system and increasing the risk of cerebral palsy, impaired vision, birth defects, lifelong carbohydrate cravings, developmental disorders and mental retardation in the offspring (*European Journal of Clinical Nutrition* (2007), 1-12). It seems that the more we know about aspartame, the worse it gets. But instead of withdrawing this toxic stuff from the food supply, aspartame is slowly making its way into ordinary products used every day, which do not carry any indication of being for people on diets or for diabetics. Thus, if you eat processed foods, you put yourself and your offspring at risk.

MALAYSIAN DIETICIANS ON THE MOVE

Malaysians love to eat, and their diet is full of sugar, but it also contains healthy ingredients like coconut milk, clarified butter, lard, seafood and organ meats. Citing rising levels of diabetes and overweight, dieticians in Malaysia are waging war against “high cholesterol [*sic*] coconut milk, clarified butter and sugar cane.” Thanks to their efforts, “Fattening coconut milk. . . is being shunted aside for nutritious soy milk” and tofu is replacing such native dishes as rice flour noodles fried in lard and curried offal rice. “We need to have more aggressive education and to impart information to the community,” says Tan Yoke Hwa, President of the Malaysian Dietitians’ Association, “getting them to make the change” (www.smh.com.au/news/diet/, December 18, 2007).

SUGAR AND HORMONAL PROBLEMS

Canadian researchers have found an explanation for hormonal disorders in people who eat too much sugar. When we eat too much glucose and fructose, the liver converts it to fat, a process that reduces something called SHBG protein in the blood. SHBG protein plays a key role in controlling the amount of

testosterone and estrogen that's available throughout the body. Lower levels of SHBG protein result in more testosterone and estrogen being released throughout the body, which leads to increased incidence of acne, infertility, polycystic ovarian syndrome and uterine cancer in overweight women (www.sciencedaily.com/releases/2007/11/071109171610.htm).

CANCER AND SUGAR

Even though oncologists administer radioactive sugar to find cancers in the body—the sugar goes straight to the tumor—the cancer establishment has refrained from admitting that sugar feeds cancer cells. The appetite of cancer cells for sugar was announced in 1924, when German Nobel laureate Otto Warburg first published his observations of fast-growing tumors. Unlike healthy cells, cancer cells appeared to fuel themselves by fermentation of sugar. None other than *Time Magazine* (September 17, 2007) has reported on a trial in Germany in which five very ill cancer patients had good results—their condition “stabilized”—with a carb-free, high fat diet. (Unfortunately, many patients dropped out because they found it hard to stick to a no-sweets diet.) Instead of getting energy from sugar, the patients in the trial get their energy from fat—but unfortunately, the fats are “high-quality plant oils such as hempseed and linseed oil” and the protein portion of the diet includes soy. (Perhaps this is why so many dropped out.) We predict even better results—and longterm recovery—on a diet where the fats are butter, lard, egg yolks, coconut oil and cod liver oil and the protein foods include liver, eggs and seafood. This kind of diet not only helps the body recover from cancer, but also cures sugar cravings. ☯

FOR SCIENTISTS AND LAYMEN

Please note that the mission of the Weston A. Price Foundation is to provide important information about diet and health to both scientists and the lay public. For this reason, some of the articles in *Wise Traditions* are necessarily technical. It is very important for us to describe the science that supports the legitimacy of our dietary principles. In articles aimed at scientists and practitioners, we provide a summary of the main points and also put the most technical information in sidebars. These articles are balanced by others that provide practical advice to our lay readers.

An Inconvenient Cow: The Truth Behind the U.N. Assault on Ruminant Livestock

By Matthew J. Rales

In late November of 2006, the United Nations Food and Agriculture Organization released a startling report. Its official title is “Livestock’s Long Shadow: Environmental Issues and Options.”¹ References to this report have been frequent in the last year, especially on environmental and nutrition-related fronts. The report accuses the cow of the worst environmental crimes—land degradation, water pollution, acid rain, biodiversity and habitat loss, desertification, deforestation, and foremost among the headlines, global warming. Cows and other ruminants are responsible for generating 65 percent of anthropogenic nitrous-oxide, 64 percent of ammonia, and 37 percent of the world’s methane, the U.N. scientists declare.

Ancillary reports that expound upon these figures are everywhere. The American media have enjoyed selling the annihilator-cow theme to an audience conditioned by anti-animal foods propaganda and environmental fabrications, such as the “fact” that greedy farmers in the Amazon eradicate rainforest for more and more land to graze their cattle.

Syndicated nutrition columnists present us with lists of environmentally friendly food choices, invariably free of any and all animal products, and environmentalists cite the report as further evidence to keep cattle out of national parks and “protected” public lands.

But it’s not just the mainstream news networks and publications that have circulated these accusations against livestock. Alternative energy and sustainable living magazines have produced a smattering of recent articles: “Eat Less Meat,” “Meat is Methane,” “Save the World; Go Vegan.” These catchy titles sit on the magazine rack at your local natural foods co-op. And so the readership of these publications continues to patronize those trendy pseudo-foods like soy milk and veggie burgers—the production of which is a principle reason for deforestation in the Amazon. The other use for soybeans from these degrading land use practices is feed for confinement animals—beef and dairy cattle, pigs, poultry and fish—for which pastured cows continue to be blamed.

INDUSTRIAL ENVIRONMENTALISM

Make no mistake; rainforests are not cleared in any drastic measure by independent farmers who want to graze a few steers. They are cleared by United Nations-supported corporate giants under the guise of feeding the world and alleviating poverty—all for the production of more of their patented seed. This seed, of which the U.N. and its “green” lobbyists are so fond, assumes the role as displacer of traditional food and farming all over the world. That means health-giving foods like lamb tallow for frying, lard for baking, and real butter, which the industry-led dietitians have condemned from on high, are the foods these GMO seeds are displacing. It is no wonder the U.N. has so urgently launched its campaign against livestock—these animals represent the only food source that can supply the people with enough good nutrition to empower them (both physically and emotionally) to resist the global onslaught of food police, biotech crops and chemicals.

A recent article in *Business Week*² reports that Brazil alone grows over 25 million acres of soybeans—all of which are genetically engineered. The *Wall Street Journal*³ reports that Monsanto’s

stock has tripled in the last year due to Brazil’s demand for Roundup Ready soybeans—a genetically engineered plant that can withstand multiple, frequent applications of toxic herbicide.

Allan Nation, editor of *The Stockman Grass Farmer*, reports back from his recent trip to Argentina that “eight dollar” soybeans for world export are edging out the domestic, sustainable grass-fed beef industry.⁴ Why don’t we hear environmentalists denouncing this supreme symbol of industrial agriculture with the same passion they muster for condemning beef? Why are the green-conscious not boycotting the oilseed plant that literally drinks Middle Eastern oil in the form of petrochemical herbicides? That’s because our society has been conditioned to support a co-opted environmental movement in the name of a chemical-intensive vegetable bypass industry, at the tragic expense of good health to both man and environment via the qualities of grazing animals (those methane-belching creatures that we love to hate) and their products—meat and milk for people, manure for the soil—none of which our society can afford to lose.

DESTRUCTIVE PARADIGM

The real paradox of the report is the way in which it avoids dealing with the twin-conundrum of mass-scale monocultural grain production and confinement animal feeding operations (CAFOs). These are the two destructive pillars of an industry gone wrong, yet the U.N. points its global finger not at bad management practices like feedlots and confinement dairies, but at the cows themselves; not at Monsanto, but at real farmers, who raise livestock in accordance with nature’s principles—on grass.

The U.N.’s accusations ought to be directed at chemical-intensive, industrial CAFO agriculture. Yet the U.N. only presents solutions that fit within the confines of the industrial framework—the framework they are obliged to uphold through the preordained results of taxpayer-funded university research.

Indeed, the solutions have already been written, and at best they are dubious and vague. They include “improved diets for ruminants, which reduce enteric fermentation.” These diets, you can be sure, are grain-based, laced with all kinds of chemical concoctions. No mention of the carbon

Why are the green-conscious not boycotting the plant that literally drinks Middle Eastern oil in the form of petrochemical herbicides?

What we are lacking from an environmental perspective is precisely that which the U.N. would like to annihilate: farmers who use livestock to enhance and embellish landscapes.

released into the atmosphere in the production of these “improved diets,” just as there is never any mention of the petroleum requirements to produce corn-based ethanol. Another U.N. solution is an overarching vaccination protocol also aimed at reducing fermentation activity in the rumen. Aren’t these solutions brilliant? The U.N. cuts a check to the likes of Monsanto for the “improved diets,” and to the likes of Merck and Pfizer for the vaccines, all the while reducing “harmful emissions” so that you can enjoy beef from an animal that’s been pumped full of genetically engineered viruses and aluminum, and has had all of its gut flora eradicated, but at least you can eat that beef without a guilty conscience. This is indeed U.N. science at its finest, and it does not have the best interests of the environment, the cow, or the consumer in mind. Its interest lies in perpetuating consumer fear, so as to further its campaign for global governance and corporate farming all over the world.

NATURE’S SOLUTIONS

Such U.N. research will not yield low-cost, common sense solutions—like freeing the world’s beef animals from their feedlot bondage, and returning them to the world’s grasslands and deserts so that their manure may become a product that gets recycled by earthworms into soil wealth—becoming a healing agent—rather than a product of volatile nitrous-oxide generation. The U.N.-sponsored research will not yield solutions like shutting down our confinement dairy camps and using these animals to return the Midwest’s eroded and degraded cropland to the fertile prairie of yesteryear. That thick layer of black gold upon which a blanket of robust native grasses once grew was a priceless gift to us from the American bison—a gift we have chosen to send to the Gulf of Mexico on the order of millions of tons per year via the erosion caused by mass-scale grain production to feed concentration camp cows—animals not designed to eat grain in the first place.

Indeed, if the U.N. chose to, they could suggest the above solutions, which would sequester carbon and add it to the soil bank, thus reducing this apparently harmful greenhouse gas from the atmosphere. As it currently stands, our farming practices both in the field and in the feedlot

oxidize carbon into the atmosphere causing an historic increase in CO₂ levels. A shift from a carbon-releasing agriculture to a carbon-sequestering agriculture requires nothing more than a shift from CAFOs and monocultures to grain-free, all-grass livestock farming. In the process, we could restore the floral and faunal ecology of the Great Plains to its pre-colonial status—a phenomenal, yet highly achievable prospect.

One of the greatest ironies of this whole scenario is that many of the world’s environmental activists stand behind the U.N. without examining the agenda behind the “green” façade. This is in large part because many environmentalists have no better understanding of nature and its functions than the apologists of industrial agriculture. These seemingly opposing sides share a common vision for the future—a world devoid of farmers and domesticated animals, with fields of monocultures that stretch to the horizon, and token wildlife preservation zones that remain locked up for eternity. These zones will inevitably begin to deteriorate, as most of them already have, for lack of good land management and husbandry by man and livestock.

In short, what we are lacking from an environmental perspective is precisely that which the U.N. would like to annihilate: farmers who use livestock to enhance and embellish landscapes. These are the wonderful people who supply us with raw milk and butter, grass-fed beef and lamb, pastured poultry and eggs. I would argue that these farmers, those sturdy individuals presented with the daily task of managing plants and animals in harmony with one another for the benefit of their land and their patrons, hold the most supreme understanding of ecological processes and are the world’s true environmental activists. The managed landscapes of these pasture-based farms are the healthiest, most biologically diverse places on earth, and the sheer volume of life in their soils proves it. And had it not been for the advent of an artificial support system called chemical fertilizers and farm subsidies, healthy soil—via livestock and their manure—would be the foundational vehicle for our prosperity and propagation upon the earth.

Let’s now examine the U.N.’s foremost accusation against livestock, specifically as it applies to global warming, and determine whether or not

this accusation deserves the merit it is currently receiving in the public arena. Perhaps if we remove the cow from the industrial context within which the U.N. would like her to reside, and put her back into nature's context—where she ought to be and where grass farmers have put her—she will become our best ally for a future free of environmental devastation and an escalating health crisis.

THE WAR ON METHANE

The U.N. claims that “the livestock sector is responsible for 18 percent of greenhouse gas emissions measured in CO₂ equivalent, a higher share than transport. The sector emits 37 percent of anthropogenic methane (with 23 times the global warming potential (GWP) of CO₂) most

of that from enteric fermentation by ruminants.”

Here we have a process as elegantly natural as the fermentation of forage in the rumen, a process that has occurred since time immemorial, probably on much vaster scales than today, being declared an environmental crime. Unfortunately, our society relies on these world police for the most up-to-date scientific data. The fact is that these data have nothing to do with good science, but are instead science manipulated to support the industrial agenda to plant the earth with more GMO soybeans (see sidebar, page 22). Such an agenda sends profits in the direction of the fossil fuel giants and corporate farms.

I would like to ask the U.N. scientists whether the vast herds of wild methane-generating ruminants are also guilty, or if the world's wetlands, gurgling methane from their anaerobic decomposition processes on the order of ten times that of cows, or our politically correct forest trees, now found to emit huge amounts of methane through their leaves, are also charged with crimes against the environment. If methane generation regardless of its origin were the problem, the U.N. would be launching a campaign to

METHANE AND MICROORGANISMS

Methane is a colorless, odorless gas widely distributed in nature. It is the main component of natural gas, and is highly combustible. It is nontoxic if inhaled, but can produce suffocation if abundant enough to reduce the concentration of oxygen in an enclosed space. Current scientific consensus deems methane a powerful greenhouse gas with a global warming potential of 25 over 100 years. According to Wikipedia, “This means that a methane emission will have 25 times the impact on temperature of a carbon dioxide emission of the same mass over the following 100 years. Methane has a large effect for a brief period (about 10 years), whereas carbon dioxide has a small effect for a long period (over 100 years). Because of this difference in effect and time period, the global warming potential of methane over a 20 year time period is 72. The Earth's methane concentration has increased by about 150 percent since 1750, and it accounts for 20 percent of the total radiative forcing from all of the long-lived and globally mixed greenhouse gasses.”

Natural sources of methane occur in water-logged and submerged soil where organisms called methanogens exist in anaerobic conditions. The methanogens use CO₂ for energy and produce methane. Marshes, wetlands and peat bogs account for the greatest source of naturally produced methane, with unknown quantities locked in the soil of permafrost and the ocean floor that may be released as world temperatures rise. Ruminants produce methane as a byproduct of their digestive process, and termites also produce a surprising amount of methane via their digestive systems—a yearly amount estimated to be twice that emitted by wetlands and bogs.

Methane from human activities mainly accrues from losses occurring during oil, coal and gas extraction, waste treatment, landfill sites, rice cultivation (which employs regular flooding of fields) and biomass burning.

Two other recently discovered and surprising sources of methane are manmade dams and . . . trees! Industry groups have described dams as “climate-friendly” compared to coal-powered energy plants, but scientists have now discovered that large manmade bodies of water emit methane as bacteria break down organic matter in the water. And findings reported in the journal *Nature* indicate that a range of plants produce methane, even when oxygen is plentiful, and this source may account for 10-30 percent of the world's methane emissions. “We now have the spectre that new forests might increase greenhouse warming through methane emissions rather than decrease it by sequestering carbon dioxide,” said David Lowe of New Zealand's National Institute of Water and Atmospheric Research.

Last year a methane-eating organism was discovered that lives in the high-temperature, high-acid conditions of geothermal zones. The bacterium is a member of the family of methanotrophs, bacteria that use methane as their only source of energy. Methanotrophs are normally found in abundance in soils where methane is naturally produced, such as oceans, mud, marshes and other underground environments. Climate researchers worldwide are studying the newly discovered, extra-hardy bacterium as it holds promise for reducing the amount of methane entering the atmosphere.

While it does seem that atmospheric carbon dioxide levels are much higher than they have been historically, the long-term trend for methane is unclear. Scientists tell us that atmospheric methane levels have doubled since the industrial revolution but methane levels have stayed nearly flat for the past seven years, following a rise during the two previous decades.

Sources: <http://www.eoearth.org/article/Methane>; <http://www.gns.cri.nz/news/release/20071122methane.html>; <http://www.commondreams.org/headlines02/0612-07.htm>; <http://news.bbc.co.uk/2/hi/science/nature/4604332.stm>; <http://www.cbc.ca/technology/story/2006/11/21/methane.html>.

backfill the earth's wetlands and we would lose these divine mechanisms for water purification and retention, these supremely diverse corridors that bridge terrestrial and aquatic life. My point is that even a standardized, globalist bureaucracy like the U.N. would never dream of launching such a campaign, yet without any qualms, they take the fermentation of plant material in the rumen, a perfectly stable, natural process that somehow is in conflict with their current political agenda, tailor it into an environmental offense, and call for its annihilation. On top of that, they use environmental pawns to vigorously spread the word. PETA, The World Conservation Union, Al Gore and the growing vegan contingency are among the many whistleblowers disseminating a politically correct falsehood.

Rumen fermentation is the process, remember, that gives us fats like conjugated linoleic acid (CLA), and bone-building nutrients like vitamin K. The miraculous conversion process, achieved only by ruminants, that takes grass—nature's most nutritious vegetable but undigestible for humans—and converts it into metabolically available, exponentially superior nutrition for people. With these accusations brought to the table, we can confidently surmise that the rumination

process along with the ruminant are certainly under assault, and we must be prepared to defend these animals and our right to consume their products with the same valiant effort with which we have defended raw milk.

The ploy to displace the products of the ruminant from the world's table is not new. Public relations campaigns from the self-righteous, plant-based diet community have been at work since 1871, when the first butter substitute entered the U.S. marketplace.⁵ In 1984, the Center for Science in the Public Interest began its anti-saturated fat crusade, and by 1990, beef and lamb tallow had been replaced by partially hydrogenated soybean oil as the collective, commercial frying fat in the United States.⁶ I hope we've noticed that obesity, diabetes, cancer and heart disease have all increased since we switched from animal fats to vegetable oils. Yet these public interest groups, despite their addiction to lawsuits and bureaucratic control of our nation's food supply, are not held accountable for the destruction to our nation's health caused by this politically correct charade.

We are currently witnessing the physical, emotional and moral decay that results from living without animal foods. Remember the "displacing foods of modern commerce" that Weston A. Price spoke of? Today many of these are based on soy and its many derivatives, and any of the other rendered vegetable products from the biotech trough, all sanctioned by

the U.N. as the foods that will feed the world and eliminate global poverty. A glance at the status of many of these Third World peoples reveals that we further impoverish these once robust, self-reliant communities with every bag of soy flour we deliver to them.

SIXTY MILLION BISON

In his fascinating recent book, *1491: New Revelations of the Americas Before Columbus*, Charles Mann paints a picture of wild ruminant populations before the arrival of Europeans: "North America at the time of Columbus was home to sixty million bison, thirty to forty million pronghorns, ten million elk, ten million mule deer, and as many as two million mountain sheep."⁷ That's just North America. We have

not even considered the enormous herds pounding the African plains, nearly all of which are methane-producing ruminants including wildebeest, Cape buffalo, giraffes, gazelles, antelope, kudu—you get the point. Even today, these animals number in the hundreds of millions; their numbers were many fold greater in the past. How can it be that we have been able to overlook this perfectly natural scenario and move forward with



casting the blame on the world's 1.5 billion domesticated cattle?

Nature's herds are by no means light on the land. Reports from the travels of Lewis and Clark attest to the fact that the herds of bison left not one scrap of fodder for their horses to eat, and the land was coated with a sheet of manure so thick, it turned vast expanses of prairie black. This manure, with the help of sage grouse, prairie chickens and dung beetles was then quickly recycled into some of the richest soil on the planet; this is the same manure that the U.N. blames for poisoning our atmosphere with nitrous-oxide.

MIMICKING NATURE

Managed grazing, which attempts to mimic

the grazing patterns of these great wild herds, can produce an abundance of nutritious animal foods, while sequestering massive amounts of atmospheric carbon. We are told by the global warming gurus that the earth is heating up due to excess carbon dioxide in the atmosphere. Through specific grazing strategies we can sequester this excess carbon and form rich, productive topsoil in the process. We do this not by planting more trees, or even setting aside more wildlife preserves. We do this with domesticated ruminants—pulsing the landscape with large numbers of animals for short periods of time.

In nature, bison and wildebeest graze in huge mobs, remaining in one location briefly, and then they move on to fresh ground. They keep bunched together tightly for fear of pack-hunting predators. These ruminants are Nature's soil-building and fertility management mechanism. We also know that the soils under which these animals graze are our largest land-based carbon sinks on earth. All we need to do, then, is to mimic these native grazing patterns with our domestic stock, and we have an easily achieved, rapid solution to the excess carbon in the atmosphere.

The hoof action, manure, urine and saliva all act as bio-stimulants on the pasture, encouraging the grass plants to thicken, bare spots to fill in, and species diversity and succession to accelerate forward from simplicity to complexity. The productive grasslands of the world and the massive herds of herbivores that grazed them coevolved together. One cannot exist without the other. The grass relies on the ruminant for its full expression just as much as the ruminant relies on grass. Without ruminants to fertilize the soil and break down cellulose in dry climates, prairies quickly become deserts; and with managed grazing of ruminant animals, deserts can be restored to productive land.

GRASS-FED BUTTER: MOST ENVIRONMENTALLY FRIENDLY FOOD

Grass farmers produce the most ecologically sensible food on earth, food derived nearly in its entirety from solar energy. Grass-fed butter is perhaps the finest example of solar energy converted into nutrient-dense food for people. Grass-fed meat and other grass-based dairy products are equally wonderful, earth-friendly foods. However, I use butter here to illustrate how we can derive pure, nutrient-dense animal energy from solar energy with very few steps in between. Here's how it works: Grass plants convert solar energy (and atmospheric carbon dioxide) into plant biomass, and the cow synthesizes that plant material into her own energy via the cellulose-digesting microbes in her rumen. From this energy she then produces milk, of which the energy-rich portion (the cream) is separated. The cream is then made even more energy-dense through churning into

THE CARBON FACTS

For some hard facts about carbon sequestration through grass-based agriculture, I turn to the pioneering work of Allan Savory, one of the most practical and productive environmentalists of our time. Savory is the founder of Holistic Management International and advocate for a holistic approach to resource management and land healing with livestock. In a recent article published in the *Green Money Journal*,⁸ Allan Savory and Christopher Peck, a principal with Natural Investment Services, LLC, ran the numbers on carbon and how we ought to manage it to halt global warming. If these gentlemen are correct, we can stop global warming in its tracks in the next 15 years if not sooner—this assuming that the U.N. does not stymie the effort with their obstructive anti-livestock policy initiatives. The model documenting the potential for carbon sequestration using grass-based agriculture is presented in hectares, but to make it more user friendly, I've converted it to acres.

To set the stage, we must consider the 180 gigatons of legacy carbon—that's the anthropogenic carbon that's been emitted into the atmosphere since the onset of the industrial revolution. The procedure for removing this legacy carbon load involves cows—lots of cows—and the utilization of the multifaceted behaviors and qualities of these ruminants, described above, to build soil organic matter. Savory and Peck argue that a mere 0.5 percent increase in soil organic matter (defined as atmospheric carbon sequestered as soil carbon) on 75 percent of the world's rangelands, which is roughly 11.25 billion acres, would sequester 150 gigatons of atmospheric carbon. This scenario bars the fact that we can certainly increase soil organic matter by much higher margins within a decade or less. The biggest paradox of course is the fact that livestock—the problem according to the bureaucratic wisdom of the U.N.—are really our best solution.

As evidenced by the above scenario, no terrestrial ecosystem sequesters carbon at the rate and volume of productive grasslands. The tired argument to plant more trees, or designate more national forest land, amounts to a net *release* of carbon. It is another example of a feel-good policy backed by a powerful extreme environmental lobby and bloated conservation funds. Just because a policy is backed by a strong PR campaign does not make it holistically sound. In fact, by clearing more forests and establishing perennial grasslands in their place, we can accelerate the carbon cycle by vast proportions. Trees take far too long to grow and die to have a significant effect on mitigating the excess load of atmospheric carbon. The real solution to global warming is to build deep, fertile topsoil using large herds of domesticated cattle stocked at high densities and moved very frequently.

butter. No chemicals or petroleum required (except electricity for churning the butter); just the sun, the grass and the cow (and her rumen flora) in an elegantly simple process.

Let's run a quick comparison to the production of a food that the U.N. and its whistleblowers tell us has a smaller ecological footprint—the production of vegetable oil. First the soil must be plowed; a process that requires immense amounts of diesel fuel. Then the seed, whether it's rapeseed (canola), soybeans, corn or any other oil-producing seed, must be planted. This is accomplished by a tractor as well, thus more diesel fuel. After the plant begins to grow, the field must be cultivated to kill the invading weeds. Then the fields are sprayed several times by a tractor-mounted rig, dowsing the weeds in oil-derived petrochemical herbicide. If bugs are a problem out comes the pesticide, also derived from oil. Harvest time, and massive combining ensues. The seeds are then trucked cross-country to a factory where a multi-step refining process takes place. The factory is similar in design and practice to a crude oil refinery.

After much chemical and mechanical refining of our seed, we have a product, which is not food, but which the U.N. tells us is the earth-friendly

substitute for our solar energy-derived butter. The average environmentalist pays little attention to these details, turning his back to the truth. He is not really concerned with the details of how our choices about what we eat influence our soil, our landscape, or our environment as a whole. He is ultimately concerned only with saving one more tree, lobbying for one more acre to be locked away from human influence, which is certainly a reductive proposition. And therein lies the problem with the national park mentality: the lobby to spare land from “negative” human influence also denies it positive human influence. Without warm bodies consciously and periodically disturbing the landbase, whether we use livestock, chainsaws, or other land-healing measures, we will ultimately witness deterioration. Ecosystems are meant to be dynamic, with a lively growth and

IS THE WORLD REALLY HEATING UP?

The topic that has defined our decade is Global Warming, used as an argument for vegetarian diets and vast international bureaucracies. The “science” that bolsters the fear-mongering premise of catastrophic climate change is the famous “hockey stick” graph prepared by Michael Mann for the Intergovernmental Panel on Climate Change (IPCC). The graph seems to show that the earth's climate was very stable from AD 1000 to 1900, when temperatures began climbing very dramatically to levels never reached before. The implication is that manmade industrial activities—including, apparently, cattle raising—have caused a rapid increase in global temperatures, which threaten the whole world with famine and suffering. But when mathematicians tried to duplicate Mann's hockey stick graph using his own data (reports of variations in tree ring growth from various parts of the world), they were unable to do so. They found that Mann had used an unusual type of data analysis that allowed him to put greater emphasis—390 times greater—on the few data sets that resulted in a hockey stick graph and thus create the impression that global warming is a unique modern event. (This kind of statistical manipulation will be familiar to those who know about the phony science used to promulgate the cholesterol theory of heart disease.) Furthermore, tree ring data is apparently a poor proxy for temperature. For example, tree rings may be misleadingly wider during cold years that happen to have a warm period in the late spring, when trees accomplish most of their growth.

The real spoiler for the proponents of global warming is something called the MWP—the Medieval Warm Period—when temperatures in Europe were at least 2 degrees C higher than they are today—when it was so warm that wine grapes flourished in England and Chaucer's pilgrims could set out in April, a month of warm showers. Proponents of global warming argue that the MWP was a local event, but worldwide evidence—from cherry blossom festival records in Asia to lake sediment samples in Africa—indicate that the entire planet was warmer during the period. The MWP was followed in about 1500 AD by the Little Ice Age, when temperatures plunged, the Thames regularly froze in winter, and people suffered from famine, plague and political unrest. In Sweden, for example, extremely cold weather 1696 caused harvests to fail and 100,000 people to die. The Little Ice Age ended around 1840, and since that time temperatures have slowly climbed. Another warm period occurred during the time period of the Roman Empire, followed by a cold period corresponding to the Dark Ages. In other words, the earth's climate goes through fluctuations of warm and cold that obviously have nothing to do with man's activities.

The most likely explanation for climate fluctuation is changes in solar activity, which can be monitored by sunspot activity. The Little Ice Age, for example, corresponds exactly with something called the Maunder Minimum, when there were virtually no sunspots at all. Even the smaller 11-year climate variation cycle corresponds with an 11-year sunspot cycle. When solar activity is high, less cloud-forming radiation enters the atmosphere and the planet heats up.

Perhaps what we really should be concerned about is global cooling. Satellite data indicate that the earth's temperature hit a high point in 1998 and has been steadily cooling ever since.

Source: <http://www.john-daly.com/hockey/hockey.htm>

decay cycle, not held in artificial suspension by political boundaries.

A REVERENCE FOR LIFE


What has the world come to when today's young teens contemplate childlessness in order to reduce their carbon footprint, and the U.N. is prescribing "defaunating" agents for ruminants to kill their gut flora, and when the predominant rural landscape consists of endless expanses of corn and soy with not one cow and not one farmer in sight? We are certainly entering the age of sterility, not to mention infertility. A reverence for life and all things that give richness to life has taken a back seat to the idea that we must reduce our "impact" on the planet. Our children are now being brought up to believe that their daily activity is a detriment to the earth, and we wonder why the self-esteem of our young people has hit a record low.

Ironically, the call to reduce our environmental impact has caused more degradation than it has spared. Seventy-five percent of the world's rangelands are considered degraded, not because there are too many cows but because there are too few.⁸ National forests are ablaze because of campaigns to silence the chainsaw—this is fuel that could be utilized and instead it is left to burn out of control. Nevertheless, in the midst of lifeless landscapes all over the world, real farmers and livestock husbandmen are asked to seek jobs somewhere outside the livestock sector—in sterile fields of soybeans, I suppose—what the late Mark Purdey referred to as the "vegan ecological wasteland." What we are witnessing now is our own, modern version of the "Trail of Tears," where both man and beast are forced off the land to toil in confinement houses and feedlots where their activities can more easily be regulated and so that the land can be "freed up" for the production of more "efficient" vegetarian fare.

THE FUTURE

Now imagine a world in which we revere and hold our animals sacred, the soil so sweet and so fertile that our farms become inevitable wildlife corridors—we may even have to hunt to keep these wildlife populations in check. But this just means supplementing our diets with a little wild venison or gazelle now and then. The

vast Great Plains of North America are restored to their original deep black loam by vast herds of beef cattle mimicking their native cousins the bison. African men, displaced from their traditional cattlekeeping by the U.N.-sanctioned call to vegetarian efficiency, return to their native lands to take on the noble pursuit of land healing, leading great herds of cattle through the bush under the thoughtful tutelage of Holistic Management[®]. Parched river beds become vegetated and begin to run again, bare soil heals over with a thick carpet of green, all due to the life-giving forces of the cow in great numbers. Our redemption is not in her annihilation as the U.N. would have it, but in truly understanding her environmental and nutritional restorative traits, and putting those traits to work for us.

These land-healing processes generate a new food supply. This food supply is unique in the fact that it produces grass-finished meat and dairy as a byproduct of innovative land management and carbon sequestering strategies. With these processes, we are not merely sustaining the land but enhancing and embellishing it, turning the deserts green. That should be our goal. While the U.N. continues to dabble in their industrial, government-funded solutions based on tax incentives and negative reinforcement, we will just vote with our food dollars for environmentally enhancing, animal agriculture. Soil building, grass-based farming, utilizing livestock to our environmental and nutritional advantage is the key to our future prosperity. Can you imagine the diversity of traditional foods we could revitalize on a grand scale through a worldwide effort to restore degraded landscapes with cows, sheep and goats? The potential to flood the marketplace with old-fashioned animal fats would be endless. I'm ready to live off the (grass-fed) fat of the land and I hope you are, too. Let's move forward, full speed ahead, with this special life-respecting movement, and instill in the next generation a reverence for life and all that gives richness to it. Our movement to curb climate change will be validated by the beauty of rich soil, green pastures and healthy generations to come. For this, we owe immense gratitude to the ruminant livestock of the world, and their enduring service to mankind. 

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THE SUM IS GREATER THAN ITS PARTS

Whether or not the planet is warming up or cooling down, the fact is that atmospheric carbon dioxide levels are at an all-time high and, with the growth of the middle class in China and India, demands for limited resources are rapidly increasing. In addition, the world's population is experiencing an increasing sense of restlessness as the paradigms of corporate control and industrial agriculture reveal their inherent limitations and dangers. Many commentators have predicted not so much a global change in climate as a global change in consciousness.

It has been suggested that the age we live in now be called the "Anthropocene," indicating that as the dominant species, we humans are capable of changing the planet on a geological scale. It is interesting to note that already in the early 1900s, Vladimir Vernadsky, a Russian geochemist, coined the term "noosphere" to indicate a new era, which he believed the earth was entering. Vernadsky believed that the noosphere, or sphere of human thought, was the third stage of planetary development following the biosphere (biological life) which in turn had transformed the geosphere (inanimate matter). "Just as the emergence of life fundamentally transformed the geosphere, the emergence of human cognition fundamentally transformed the biosphere. In this theory, the principles of both life and cognition are the essential features of the earth's evolution, and must have been implicit in the earth all along."¹ Vernadsky's concept of the noosphere was one of optimism, in which a transhuman consciousness would emerge from the interaction of human minds. The visionary concepts of Vernadsky were not popular in the West, but may be worth reconsidering today. After all, we ourselves are our only real shot at staving off ecological disaster.

A February 2, 2008 *New York Times* article related a story about Ireland's tax on plastic bags and the remarkable aftermath. In 2002, in an effort to rise above the sea of discarded plastic bags in that country, Ireland passed a law taxing the bags at 33 cents each. "There was an advertising awareness campaign," the article continues, "and then something happened that was bigger than the sum of these parts." In a matter of weeks, national use of plastic bags dropped by 94 percent, and today just about everyone uses cloth shopping bags. Using plastic bags became socially unacceptable almost overnight, "on a par of not cleaning up after one's dog."

This sort of mass change in behavior can be viewed as interrupting "business as usual," and it will require many such interruptions on small and large scale to add up to a real difference. From the point of ethics, however, and wanting to see our children alive on a hospitable planet, how can we but do otherwise?

There are many opportunities to positively alter "business as usual" in our daily lives. It has been estimated that every single American generates 12,000 pounds of carbon a year, 39 percent of that from electricity production, 32 percent from transportation. We are conditioned by, and often blind to, our habits and comfort—business as usual—but we know these can be changed. Here are just a few routine behaviors that can be significantly improved with new habits:

- Reduce by half the number of trips you take by car. Take note of how many times you find yourself in your car each day. Let that number sober you up, and then act: consolidate errands, postpone or cancel non-essential trips, commute with others in one vehicle, walk, take public transport, and so on. According to the experts, living close to work so that you can walk or take public transport is the number one way to reduce your energy usage.
- Dry your clothes outside or hang indoors. The clothes dryer is a colossal waste of energy and is hard on clothes, which we tend to wash too frequently anyway. Erecting a clothes line is very simple, and the sun and wind do a beautiful job of drying, disinfecting and whitening laundry. You can also hang clothes outside to dry in the winter—winter air is very low in humidity and clothes dry outside even if they take longer. Damp laundry hung inside in winter helps raise indoor humidity. Hanging clothes to dry also obviates all those collateral laundry "aids" made from petroleum products and toxic, endocrine-disrupting, disgusting fragrances. You don't need any of them!
- Opt out of the commercial, industrial food system. Spend your food dollars with the farmers and producers in your locale who grow most of what you eat. Especially support grass farmers! Choose to eat seasonally, learn to put food by as it comes in season, make or grow as much of your own food as you can. If enough of us take the lead, it will soon become as politically incorrect to consume supermarket food as it is to use plastic bags!
- "There is no bad weather, just bad clothing," goes an old saying, and it's worth taking to heart. We can heat our homes more economically even if we can't afford to install thermal windows or extra insulation by insulating ourselves in layers. Many layers! Try a thin silk undershirt, then a cotton shirt or blouse, then a wool sweater. You may not even need to turn on the heat. Most homes and businesses are overheated, which is enervating and unhealthy. It's especially healthy to breathe cool air at night when we sleep—so turn down the thermostat and wear a cap and socks to bed! In summer, resist using air conditioning as long as possible—install awnings or reflective window shades to deflect the sun. And be sure to make your house temperature friendly. It's not necessary to install expensive double glazed windows. A tube of caulk pays for itself in energy savings as soon as it is applied; and curtains and blinds can be opened and closed according to the weather and position of the sun.

1. http://en.wikipedia.org/wiki/Vladimir_Vernadsky

Vegetarianism and Nutrient Deficiencies

By Chris Masterjohn

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I decided to go vegetarian when I was 18 and vegan soon after, believing I would save the animals, the environment and my health. I thought that my low intake of saturated fat would protect me from heart disease and that my low intake of animal protein and high intake of soy isoflavones would protect me from tooth decay and bone loss. Instead, over the next two years my health took a series of blows: my digestion fell apart; fatigue set in; anxiety took hold; and tooth decay overran my entire mouth—a single visit to the dentist yielded a treatment plan that would take the following year to complete. I was a mess, and I didn't know why.

When I read Weston Price's *Nutrition and Physical Degeneration* about three years after first removing animal products from my diet, I finally understood why my health had fallen apart. I had always associated nutrition with fruits and vegetables. Meat was for protein; milk for calcium; but vitamins were something you got from plant products. Yet the groups that Price studied had a very different idea of nutrition. They valued foods like liver, shellfish and deeply colored butter for their life-promoting qualities. Price used cod liver oil, butter oil and organ meats to supply the fat-soluble vitamins to his patients. These were mostly foods I had never eaten, and the foods with only small amounts of important animal-based nutrients—meat, eggs, and milk—were precisely the ones I had banished from my diet.

Not all vegetarians develop overt health problems in such a short length of time from abandoning animal foods and some—especially those who eat eggs, milk, or occasional fish and shellfish—may maintain good health for decades. A strictly vegetarian diet, however, clearly lacks nutritional qualities that an omnivorous diet possesses. If the people most sensitive to deficiencies of these nutrients suffer the types of problems that I did, those who are less sensitive and not suffering obvious problems may nevertheless fail to achieve optimal health without optimal levels of nutrients from animal sources.

This article will discuss those nutrients, their functions and their sources, starting at the beginning of the alphabet with vitamin A.

VITAMIN A

The roles of vitamin A in vision, growth, immunity, reproduction and the differentiation of cells and tissues are well known.¹ Vitamin A also plays a number of lesser known functions: it is a powerful antioxidant in cell membranes,^{2,3,4} protects against environmental toxins,⁵ contributes to the regulation of bone growth,⁶ protects against asthma and allergies,^{7,8} prevents the formation of kidney stones,⁹ and protects against fatty liver disease.¹⁰

“Fat-soluble A” originally referred to the ability of butter or egg yolks to support weight gain and prevent mortality in laboratory rats. One of the discoverers of vitamin A, Elmer Verner McCollum, initially attributed the ability of cod liver oil to treat both the eye disease xerophthalmia and the bone disease rickets to its content of this vitamin. Eventually, researchers recognized vitamins A and D as two different vitamins because heating cod liver oil destroyed its ability to cure xerophthalmia but not its ability to cure rickets. Although they would determine over time the fact that the vitamin D content of butter depends on the season and the condition of the cows producing it, the observation that both cod liver oil and butter could cure xerophthalmia but only cod liver oil could cure rickets also contributed to the differentiation of vitamins A and D.¹¹ Vitamin A, then, was originally discovered because of the life-promoting properties of three animal fats.

Research conducted soon after, however, showed that the yellow lipid fraction extracted

from yellow-orange vegetables possessed the same activity.¹² These vegetables contain beta-carotene and other carotenoids that humans and animals can convert into retinol, the functional form of vitamin A found in animal products. In 1949, Hume and Krebs induced vitamin A deficiency in three human subjects; they treated one with retinol and treated the other two with a concentrated dose of beta-carotene dissolved in oil. They concluded that 3.8 units of carotene are required to produce one unit of retinol. A similar experiment conducted in 1974 established a conversion factor of two and several others established conversion factors between two and four.¹³

In 1967, the United Nations Food and Agriculture Organization (FAO) and World Health Organization (WHO) released a joint recommendation stipulating that six units of beta-carotene and twelve units of other carotenoids with vitamin A activity should be considered equivalent to one unit of retinol, a recommendation they renewed unchanged in 1988. This led H.P. Oomen, the prominent researcher who first highlighted the problem of vitamin A deficiency in the Third World, to write, “The whole procedure of vitamin distribution would be wholly superfluous if adequate carotene were present in the children’s diet.” Oomen believed that just 30 grams per day of dark green leafy vegetables would be sufficient in and of itself to provide adequate vitamin A to undernourished children.¹⁴

Yet in the 1990s, this view began to change. In 1994, Suharno and others observed that pregnant Indonesian women were consuming enough carotenes to yield three times the recommended amount of vitamin A based on the WHO’s conversion factor, yet large numbers of them were suffering from marginal vitamin A deficiency. Subsequent intervention studies aimed at Indonesian school children and breastfeeding women in Vietnam found that the conversion factor for carotenes to vitamin A in vegetables was 26 and 28 respectively, and 12 when the carotenes were consumed in fruit. In 2002, the U.S. Institute of Medicine (IOM) established a conversion factor of 12 for beta-carotene, 24 for other carotenoids with vitamin A activity, and two for beta-carotene dissolved in oil. West and others criticized the selective use of studies employed by the IOM,

In 2003, Tang and colleagues showed that even the efficiency of beta-carotene dissolved in oil had been grossly over-estimated.

and suggested that beta-carotene from fruits and vegetables in a mixed diet has a conversion factor closer to 21.¹⁴

In 2003, Tang and colleagues showed that even the efficiency of beta-carotene dissolved in oil had been grossly overestimated. The researchers gave a concentrated dose of radio-labeled beta-carotene dissolved in oil to 22 adult volunteers and traced its conversion to vitamin A both in the intestine and after intestinal absorption. The mean total conversion rate for the oil-soluble carotene in this experiment was 9.1, and individual rates varied from 2.4 to 20.2.¹³

Figure 1 compares the vegetables richest in carotenes to the animal foods richest in vitamin A. Eating liver once a week or taking a half teaspoon of high-vitamin cod liver oil per day provides the RDA of 3,000 IU. To obtain the same amount with plant foods, one would have to consume two cups of carrots, one cup of sweet potatoes, or two cups of cooked kale every day. The presumed conversion rate, however, is just an average—by definition, many people will convert carotenes more efficiently than the average and many will convert them less efficiently than the average. People who convert carotenes poorly may suffer from vitamin A deficiency even if they are careful to eat large amounts of carotene-rich foods every day.

Many traditional diets contained much more vitamin A than our government recommends. In 1953, for example, Greenland Inuit subsisting on traditional foods consumed an

average of 30,000 IU per day.¹⁵ Since researchers are still discovering new roles for vitamin A and still poorly understand many of those already discovered, it would be prudent to assume that the ten-fold increase over the RDA found in traditional diets may have some benefit—providing it is accompanied by a rich array of other fat-soluble vitamins, especially vitamin D, which protects against its toxicity.¹⁶

It would be virtually impossible to obtain this amount of vitamin A from plant foods without either juicing or using supplemental beta-carotene. Even these methods may be insufficient, however, since larger doses of carotenes are converted less efficiently than smaller ones.¹³ Massive doses of beta-carotene, moreover, increase levels of oxidative stress and stimulate the production of enzymes that degrade true vitamin A. By inducing a cellular vitamin A deficiency, large doses of beta-carotene cause cancerous changes in lung tissue even worse than those seen from cigarette smoking. For this reason, high-dose beta-carotene supplementation led to increases in cancer mortality and total mortality in two human trials.¹⁷ Although no studies have demonstrated this type of harm from juicing, carrot juice has the potential to raise blood levels of beta-carotene to the extremely high levels found in the aforementioned trials and large amounts of it may theoretically pose a risk.¹⁸ By contrast, the amount of beta-carotene found in a diet rich in vegetables protects against oxidative stress and cancer.¹⁷

Many traditional diets contained much more vitamin A than our government recommends. In 1953, for example, Greenland Inuit subsisting on traditional foods consumed an average of 30,000 IU per day.

FIGURE 1. VITAMIN A YIELD OF PLANT AND ANIMAL FOODS.

All values are derived from the USDA National Nutrient Database for Standard Release 17, except cod liver oil, which is derived from the information provided by commercial manufacturers. All values of vitamin A yield are expressed per 100 grams of food, except cod liver oil, which is expressed per teaspoon. Vitamin A yield values follow West et al. (2002) in assuming that the retinol activity equivalent (RAE) figures for vegetables overestimate the true conversion by 75 percent. These values, however, represent an average conversion factor from a mixed diet and therefore do not represent differences in bioavailability between specific foods—the carotenoids in carrots, for example, are five times more bioavailable than those in spinach.

PLANT FOODS	Vitamin A Yield IU per 100 g	ANIMAL FOODS	Vitamin A IU per 100 g
Sweet Potatoes	1,500	Turkey Giblets	35,800
Carrots	1,145	Beef Liver	25,800
Kale	1,295	High-Vitamin Cod Liver Oil (1 tsp)	5,750
Spinach	997	Commercial Eggs	570
Collard Greens	770	Commercial Butter	330

The best plant source of vitamin A is red palm oil. Its oily matrix makes its carotenes more readily converted to vitamin A and its high content of vitamin E and low content of the polyunsaturated linoleic acid further augment the convertibility of its carotenes and also protect against their potentially destructive effects. It is pure speculation, however, to suppose palm oil can be considered functionally equivalent to vitamin A-rich foods such as liver and liver oils. Vegetarians should use red palm oil, but those who are willing to include liver or liver oils in their diet would be better off for doing so.

VITAMIN D

Vitamin D is best known for its relation to calcium metabolism. By supporting the absorption of calcium from food, it prevents and cures the childhood bone disease rickets and its adult counterpart osteomalacia. It also protects against tetany, convulsions and heart failure in newborns, helps prevent osteoporosis in the elderly, prevents the development of type 1 diabetes, and is believed by some researchers to have additional roles in protecting against cancer, heart disease, high blood pressure, obesity, arthritis, multiple sclerosis and various other diseases.¹⁹

Vitamin D was originally associated with cod liver oil and exposure to ultraviolet light. It is found in the highest amounts in fish livers, the flesh of fatty fish, and the blood of land animals; and in smaller amounts in butter and lard from animals raised with plenty of exposure to sunshine. Skin contains a precursor to cholesterol called 7-dehydrocholesterol that converts to vitamin D upon exposure to sunlight in the UV-B range, which is available year-round in the tropics but absent during an increasing portion of the year with increasing distance from the equator.¹⁹

While humans and animals synthesize vitamin D₃, a second form of the vitamin called vitamin D₂ is found in some vegetarian foods, especially mushrooms that have been exposed to ultraviolet light. Although the rela-

tive safety and efficacy of the two forms is still controversial, vitamin D₂ appears to be five to ten times less effective at supporting long-term nutritional status.¹⁹

The RDA for vitamin D is 200 IU for infants and adults through the age of 50, 400 IU for adults between the ages of 50 and 70, and 600 IU for adults over the age of 70. Evidence strongly suggests, however, that the true requirement is far higher. Supplements of 2,000 IU per day in infants under the age of one nearly obliterate the life-long risk of type 1 diabetes while supplements of 800 IU or higher are required to reduce the risk of fracture in the elderly. Nebraskans need to supplement with 1,000 IU per day during the coldest six months of the year to achieve blood levels that maximize calcium absorption and with almost 5,000 IU per day during the same period of time to achieve blood levels similar to those achieved in sun-rich living conditions without supplementation. These amounts of vitamin D should only be consumed in the context of a diet rich in vitamin A and vitamin K₂ for maximal efficacy and safety.¹⁹

Figure 2 shows the distribution of vitamin D in foods. The easiest way to obtain dietary vitamin D is to eat fatty fish or supplement with high-vitamin cod liver oil. Obscure mushroom products can provide large amounts of vitamin D₂, but the safety and efficacy of this form is

FIGURE 2. VITAMIN D CONTENT OF SELECTED FOODS

These figures are obtained from Reinhold Vieth's chapter in the second edition of the textbook, *Vitamin D*, edited by Feldman and others, except cod liver oil, which is taken from information provided by commercial manufacturers, and pork or bovine blood, which is estimated based on blood concentrations expected in a sun-rich environment. All values are assumed to be vitamin D₃ unless otherwise specified.

FOOD (100 g unless otherwise specified)	Vitamin D (IU)	FOOD (100 g unless otherwise specified)	Vitamin D (IU)
Dried Woody Ear or Silver Ear Fungus	16,000 (D ₂)	Grunt and Rainbow Trout	600
Anglerfish Liver	4,400	Eel	200 - 560
Summer Pork or Bovine Blood (1 cup)	4,000	Cultured Red Sea Bream	520
High-Vitamin Cod Liver Oil (1 tbsp)	3,450	Mackerel	345 - 440
Indo-Pacific Marlin	1,400	Salmon	360
Chum Salmon	1,300	Canned Sardines	270
Standard Cod Liver Oil (1 tbsp.)	1,200	Chicken Egg	120
Herring	1,100	Common Mushroom	100 (D ₂)
Cultured Bastard Halibut	720	Pork Liver	50
Fatty Bluefin Tuna	720	Unfortified Summer Milk (1 liter)	40
Duck Egg	720	Beef Liver	30
Dried Shitake Mushroom	640 (D ₂)	Pork	28

questionable. For most people living outside 35 degrees latitude from the equator, animal foods supply needed vitamin D in the diet.

VITAMIN K₂

Vitamin K is the king of the fat-soluble vitamins. Vitamins A and D cooperate to tell cells which proteins to make; vitamin K is responsible for activating these proteins and making them functional by conferring upon them the ability to bind calcium. In addition to its classically understood role in blood clotting, vitamin K is necessary for the deposition and organization of calcium salts in bones and teeth; the protection of blood vessels, kidneys and other soft tissues from abnormal calcification; and the synthesis of important lipids involved in brain metabolism.²⁰

Vitamin K comes in two forms: K₁ and K₂. Vitamin K₁ is found in green plants, while vitamin K₂ is found in animal fats and fermented foods. Vitamin K₁ is preferentially used for the activation of blood clotting factors, while vitamin K₂ is preferentially used for all of vitamin K's other functions. The two K vitamins are therefore not interchangeable. The clearest demonstration of this is the fact that only vitamin K₂ is associated with a reduced risk of heart disease. In the Rotterdam Study, subjects consumed nearly ten times more K₁ than K₂; a high intake of K₂ reduced the risk of severe arterial calcification by 52 percent and reduced heart disease mortality by 57 percent, while a high intake of K₁ had no effect.²¹

Figure 3 shows vitamin K₂ contents of selected foods. Animal products dominate the

list—especially goose liver and goose meat, cheeses and egg yolks—but natto, a strong-tasting fermented soy food common in Eastern Japan, actually has the highest amount. Natto contains a specific form of vitamin K₂ called menaquinone (MK-7), rather than MK-4, the form found in animal products; the relative efficacy of these two forms is currently unknown. It is therefore possible for a vegetarian diet to be rich in vitamin K₂. Most vegetarians do not consume natto, however, and most vitamin K₂ consumed by participants in the Rotterdam Study came from meat, eggs and cheese.

VITAMIN B₁₂

Vitamin B₁₂ is required for the synthesis of new DNA, the degradation of certain amino acids, the production of energy, the formation of red blood cells and the formation of myelin, the sheath that insulates neurons. Its deficiency occurs in four stages, beginning with declining blood levels of the vitamin (stage I), progressing to low cellular concentrations of the vitamin (stage II), an increased blood level of homocysteine and a decreased rate of DNA synthesis (stage III), and finally, pernicious anemia (stage IV). Irreversible nervous system degeneration also occurs in cases of severe deficiency.²⁴

Pernicious anemia is a condition in which red blood cells are immature, oversized and cannot function properly. Because DNA synthesis is compromised, the cells do not divide as they should. The disease was first identified in 1824 and was considered incurably fatal until the 1930s when physicians discovered that it could be treated with liver. Soon after, they found that stomach juice could be used in conjunction with the liver to enhance its effect.²⁵

Conventional nutritional wisdom considers vitamin B₁₂ as the one vitamin found exclusively in animal products. There are some bacteria in the small intestine that synthesize absorbable B₁₂, but their presence is unreliable and they face competition from bacteria that synthesize inactive analogues that compete with B₁₂ for absorption.²⁶ Most supplements supply cyanocobalamin, in which each molecule of B₁₂ is attached to a molecule of cyanide. Since vitamin B₁₂ detoxifies cyanide by binding it

FIGURE 3. VITAMIN K₂ CONTENT OF SELECTED FOODS

Values taken from references 22 and 23. MK-4 is the type of vitamin K₂ synthesized by animal bodies from vitamin K₁. Whether it has special value apart from other forms of vitamin K₂ has yet to be determined.

FOOD	Vitamin K ₂ (mcg/100g)	FOOD	Vitamin K ₂ (mcg/100g)
Natto	1103.4 (0% MK-4)	Chicken Liver	14.1 (100% MK-4)
Goose Liver Paste	369.0 (100% MK-4)	Salami	9.0 (100% MK-4)
Hard Cheeses	76.3 (6% MK-4)	Chicken Breast	8.9 (100% MK-4)
Soft Cheeses	56.5 (6.5% MK-4)	Chicken Leg	8.5 (100% MK-4)
Egg Yolk (Netherlands)	32.1 (98% MK-4)	Ground Beef (Medium Fat)	8.1 (100% MK-4)
Goose Leg	31.0 (100% MK-4)	Bacon	5.6 (100% MK-4)
Curd Cheeses	24.8 (1.6% MK-4)	Calf Liver	5.0 (100% MK-4)
Egg Yolk (US)	15.5 (100% MK-4)	Sauerkraut	4.8 (8% MK-4)
Butter	15.0 (100% MK-4)	Salmon	0.5 (100% MK-4)
		Mackerel	0.4 (100% MK-4)

Since deficiency can take decades to fully develop, the proportions of vegans and vegetarians who develop deficiency over time if they stick with the diet is probably close to 100 percent.

and causing its excretion in the urine, this form might have very poor bioavailability in many people. Cyanide can also be detoxified in the liver by the enzyme rhodanese or by the amino acid cysteine,²⁷ so people with a low activity of this enzyme or a low intake of animal protein to supply the cysteine might be especially unable to derive any benefit from cyanocobalamin. Thus, even vegetarians who supplement with standard B₁₂ supplements could be at risk for deficiency. Those needing B₁₂ supplements should take methylcobalamin, dibenzozide or hydroxycobalamin, forms that are more easily utilized by the body; additionally, some people with certain genetic defects or heavy metal toxicity may require methylcobalamin specifically.

The role of vitamin B₁₂ in DNA synthesis and red blood cell production is primarily to recycle folate. A high intake of folate, however, can compensate for insufficient folate recycling. Unfortunately, this means that a high-folate diet can forestall the development of anemia, which is easily detectable with a simple blood test, while potentially irreversible nervous system degeneration progresses without warning. Vegetarians who consume large amounts of folate-rich green leafy vegetables could therefore be at risk for a form of vitamin B₁₂ deficiency that is not considered severe until it is too late.²⁴

A recent study using a biochemical blood test for B₁₂ deficiency—a test that is not vulnerable to the confounding effect of a high-folate diet—found that 16 percent of the elderly, 43

percent of lacto-ovo vegetarians and 64 percent of vegans are deficient in B₁₂.²⁸ Since deficiency can take decades to fully develop, the proportions of vegans and vegetarians who develop deficiency over time if they stick with the diet is probably close to 100 percent.

Some vegetarians and vegans maintain that these diets must be *raw* in order to be truly healthy. But raw foodists are no better off. The only large-scale study of raw foodists to date examined the B₁₂ status of over 200 men and women. Although 58 percent of the subjects consumed some meat and fish and only 21 percent were lacto-ovo-vegetarian and only 21 percent were vegan, a full 97 percent of all foods consumed were plant products. Those eating a mixed diet were thus eating very little animal food. Nevertheless, vegetarians were 3.1 times as likely and vegans were 5.4 times as likely to have deficient blood levels of B₁₂. Twelve percent of the subjects, all of whom were vegans, had stage IV B₁₂ deficiency.²⁹ Even though the average length of time the subjects had followed the raw food diet was only 3.6 years, over half the vegans were developing pernicious anemia; if many of them were eating folate-rich diets, the proportion of vegans developing irreversible nervous system degeneration might have been even higher than the proportion the study suggested were suffering from severe deficiency. Clearly, animal foods must be used if even in small amounts to prevent the worst form of B₁₂ deficiency from destroying a person's mental and physical health.

FIGURE 4. VITAMIN B₂ CONTENTS OF SELECTED FOODS

Vitamin B₂ is necessary for the conversion of pyridoxine found in plant foods to pyridoxal, the active form of B₆, which is found preformed in animal foods. Data from the USDA National Nutrient Database for Standard Release 17.

FOOD	Riboflavin (mg/100g)	FOOD	Riboflavin (mg/100g)
Baker's Yeast	5.47	Pork Ribs	0.38
Beef Liver	3.42	Veal	0.35
Chicken Liver	1.99	Boiled Mushrooms	0.30
Pork Liver Sausage	1.53	Boiled Beet Greens	0.29
Turkey GIBLETS	1.50	Boiled Soy Beans	0.28
Chicken GIBLETS	1.05	Boiled Spinach	0.24
Fried Shrimp	0.55	Skim Milk Yogurt	0.23
Enriched White Flour	0.51	Ricotta Cheese	0.20
Eggs	0.48	Milk	0.18
Roasted Duck	0.47	Salmon	0.17
Clams	0.43	Tomato Paste	0.15

VITAMIN B₆

Vitamin B₆ contributes to myriad functions within the body. It is necessary for the production of histamine, which is involved in inflammation in most of the body but is essential to alertness in the brain; the production of dopamine, which is a precursor to adrenaline and noradrenaline in the adrenals, a precursor to melanin in pigmented tissues, and is involved in memory, attention, and problem-solving in the brain; the storage of carbohydrate as glycogen; the production of the elongated versions of essential fatty acids such as arachidonic acid (AA) and docosahexaenoic acid (DHA); the synthesis of cysteine, the precursor to glutathione, which is the master antioxidant of the cell; the synthesis of glycine, which is involved in detoxification in the liver; the synthesis of heme, which carries oxygen throughout the body in hemoglobin and is a component of drug- and steroid-metabolizing, energy-producing, and antioxidant enzymes; the synthesis of carnitine, which helps burn fat for energy; and the synthesis of taurine, which plays important roles in the brain and eye and assists the digestion of fat and assimilation of fat-soluble vitamins in the intestines. The requirement for B₆ is directly proportional to the intake of protein and increases

with the use of oral contraceptives and under conditions of hyperthyroidism, liver disease, trauma and stress.²⁴

Vitamin B₆ occurs in three forms: pyridoxine, pyridoxamine and pyridoxal. Plant foods contain pyridoxine, while animal foods contain a mix of pyridoxal and pyridoxamine. Most reactions within the human body require pyridoxal but some require pyridoxamine. Pyridoxine, by contrast, plays no role in the body whatsoever but can be converted into the other two forms in the liver using vitamin B₂.²⁴

The plant form of vitamin B₆ has three strikes against it, making it inferior to the form found in animal foods: its conversion to the active form depends on B₂ status, and vitamin B₂ levels tend to be higher in animal foods; most plant foods simply contain much less B₆ than most animal foods; and most plant foods contain much of their B₆ bound up with sugars that make it difficult or impossible to absorb. Figure 4 shows some of the foods richest in vitamin B₂. Supplementation with baker's yeast and the use of enriched white flour can boost B₂ intake, but the level found in natural plant foods is much lower compared to the levels in many animal foods. Figure 5 compares the plant foods richest

The requirement for B₆ is directly proportional to the intake of protein and increases with the use of oral contraceptives and under conditions of hyperthyroidism, liver disease, trauma and stress.

FIGURE 5. VITAMIN B₆ CONTENT OF SELECTED FOODS

The richest animal foods tend to be about twice as rich as the richest plant foods. Although not shown in the table, the plant foods contain pyridoxine rather than pyridoxal and pyridoxamine, which must be converted to the active forms in the liver, and contain it in varying amounts bound up to sugars, making it unavailable. Data taken from the USDA National Nutrient Database for Standard Release 17.

PLANT FOODS	B ₆ mcg/100g	ANIMAL FOODS	B ₆ mcg/100g
Buckwheat Flour	582	Fresh Tuna (Dry Cooked)	1,038
Roasted Chestnuts	497	Beef Liver (Pan Fried)	1,027
Canned Chickpeas	473	Beef Top Sirloin (Broiled)	631
Hash Browns	472	Pork Chops (Bone In)	513
Banana (Raw)	367	Pacific Cod (Dry Cooked)	462
Whole Wheat Flour	340	Roasted Turkey	460
Sweet Red Peppers	291	Roasted Ham	449
Brussels Sprouts	289	Halibut (Dry-Cooked)	435
Spinach (Boiled)	242	Rainbow Trout (Dry-Cooked)	435
Soy Beans (Boiled)	234	Chicken Breast With Skin	430
Pinto Beans	229	Swordfish (Dry-Cooked)	381
Prune Juice	218	Haddock (Dry Cooked)	346
Carrot Juice (Canned)	217	Pacific Rockfish (Dry Cooked)	270
Tomato Paste	216	Roasted Duck	250

One striking comparison between lactating Nepalese vegetarian women and their American omnivore counterparts illustrates the low bioavailability of B₆ from plant foods.

in B₆ to the animal foods richest in the vitamin. Tuna and liver are the best sources, and, in general, animal foods contain twice as much as plant foods. Figure 6 shows the proportion of pyridoxine bound to sugars in various plant foods, which ranges from zero percent in almonds to 82 percent in cauliflower.

The sugars that bind to pyridoxine can be broken down by microbial enzymes and the mammalian intestine appears to produce a limited quantity of the enzyme as well.³⁰ Studies conducted with humans suggest that the sugar-bound form has at most fifty percent bioavailability and at worst, none at all. One study conducted in men with a purified form of glucose-bound pyridoxine, for example, examined the urinary output of a B₆ breakdown product and found that roughly half of the pyridoxine was absorbed. A more realistic study conducted in women using whole plant foods, however, examined not only the urinary output of breakdown products, but also the concentration of the active form in red blood cells and the activity of enzymes dependent on it. This study suggested that the portion of plant-based B₆ in the diets bound to sugars had no activity at all.³⁰

Heating destroys vitamin B₆. The effect is

rather mild, leading to only five percent loss in scrambled eggs, ten percent loss after heating of milk for ten minutes and 45 percent loss after heating milk for one hour.³¹ The true effect on the biological activity of B₆, however, is much greater because heat-damaged B₆ can interfere with true B₆ and when fed in purified form can actually accelerate the symptoms of deficiency.³² Cooking most animal foods leads to a 25-30 percent decrease in activity while cooking soybeans leads to a 40 percent decrease in activity.³³ Many plant foods require more extensive cooking than animal products, which could further decrease the yield of active B₆ in vegetarian diets.

One striking comparison between lactating Nepalese vegetarian women and their American omnivore counterparts illustrates the low bioavailability of B₆ from plant foods. The Nepalese women in this comparison were consuming twelve percent more B₆ but had 35 percent lower serum levels of the active form after three months of lactation and 77 percent lower levels after six months. Their breast milk had the same amount of B₆ as that of American women, but a large proportion of it was glucose-bound pyridoxine. Despite the fact that the Nepalese vegetarians were consuming more B₆ in the diet and had

FIGURE 6. PERCENTAGE OF VITAMIN B₆ IN PLANT FOODS THAT EXISTS AS PYRIDOXINE GLUCOSIDE.

Pyridoxine glucoside is the sugar-bound form that has little if any bioavailability in humans. Data taken from reference 33.

FOOD	Percent glucoside	FOOD	Percent glucoside
Cauliflower, frozen	63-82	Peanut butter	18
Carrots	51-75	Whole wheat bread	17
Orange juice, fresh	37-69	Bananas	3-16
Soy beans, cooked	57-67	Peas, frozen	15
Broccoli, frozen	65	Apricots, dried	14
Raisins	65	Rice (white), cooked	14
Green beans, canned	28-58	Whole wheat flour	11
Broccoli, raw	35-57	Green beans, raw	10
Orange juice, concentrate	47-53	Corn, frozen	6
Cabbage	46	White bread	6
Navy beans, cooked	42	Fortified wheat flakes cereal	5
Wheat bran	27-36	Cauliflower, raw	5
Spinach	35	Rice bran	4
Tomato juice	32	Filberts, raw	4
Shredded wheat cereal	28-31	Avocados, fresh	3
Dark rye bread	23	Walnuts	1
Peaches, canned	21	Almonds, raw	0

equivalent levels in their breast milk, their infants had 83 percent lower levels of the active form at four months and 87 percent lower levels at six months.³³

Vegetarians should select plant foods that have the least amount of their pyridoxine bound up in sugar complexes. Bananas are an excellent source because the sugar-bound form is low, their total content is comparable to many meats, and they are typically eaten raw. Most plant foods are relatively poor sources, however, and B₆ intake would be much higher on a mixed diet including muscle meats, seafood and organ meats.

ZINC

Zinc is a cofactor for literally hundreds of enzymes. It is an essential structural component of all nuclear hormone receptors as well as some hormones themselves, such as insulin. It acts as an antioxidant in cell membranes by displacing pro-oxidant metals like iron and mercury and is also a cofactor for the antioxidant enzyme superoxide dismutase. A small sample of its biological functions include cell and tissue growth, cell replication, bone formation, skin integrity, immunity, digestion, glucose tolerance, maintenance of a high basal metabolic rate and taste acuity.²⁴

Figure 7 shows the distribution of zinc in foods. Although present in grains, legumes,

fruits and vegetables, it is found in much lower amounts compared to animal foods and is much less bioavailable. Oysters contain between four and twenty times as much zinc as beef, while beef contains two to four times as much as other meats, four times as much as eggs, ten times as much as milk and four or more times as much as virtually all plant products. Moreover, zinc absorption is inhibited by plant compounds such as phytate, oxalate, polyphenols and fiber, and enhanced by compounds present in meat. Its absorption is greater than 50 percent in the absence of inhibitors but less than 15 percent in the context of a high-phytate meal.³⁴ While a well planned vegetarian diet may escape overt zinc deficiency, it would be virtually impossible to maintain a truly robust zinc status without the inclusion of animal foods.

ESSENTIAL FATTY ACIDS

The essential fatty acids as a group are a double-edged sword. On the one hand, small amounts of them are required for the synthesis of various biologically important hormones and hormone-like molecules; on the other hand, they are highly unsaturated and their multiple double-bonds are highly vulnerable to oxidation. Even fresh, non-oxidized DHA, eicosapentaenoic acid (EPA), and omega-3-rich perilla oil increase

While a well planned vegetarian diet may escape overt zinc deficiency, it would be virtually impossible to maintain a truly robust zinc status without the inclusion of animal foods.

FIGURE 7. ZINC CONTENT OF SELECTED FOODS

The zinc content of animal foods is not only much more bioavailable than that of plant foods, but also much higher. Data taken from reference 24.

FOOD	Zinc (mg/100g)	FOOD	Zinc (mg/100g)
Seafood		Legumes (cooked)	
Oysters	17.0-91.0	All	0.6-1.0
Crabmeat	3.8 - 4.3	Grains and Cereals	
Shrimp	1.1	Rice and Pasta (cooked)	0.3-0.6
Tuna	0.5 - 0.8	Whole Wheat Bread	1.0
Meat and Poultry		White Bread	0.6-0.8
Liver	3.1 - 3.9	Vegetables	
Chicken	1.0 - 2.0	All	0.1-0.7
Ground Beef	3.9 - 4.1	Fruits	
Veal	3.1 - 3.2	All	<0.1
Pork	1.6 - 2.1		
Eggs and Dairy			
Eggs	1.1		
Milk	0.4		
Cheeses	2.8 - 3.2		

There are a number of amino acids and related compounds that are not technically essential, but are useful in the diet, possibly essential under certain conditions, and found exclusively or almost exclusively in animal products.

oxidative stress markers when fed to rats.³⁵

Since it is the elongated forms of the essential fatty acids that are especially important—including AA, DHA, EPA, and dihomo-gammalinolenic acid (DGLA)—and since the conversion of precursors in plant oils is inefficient, it makes sense to consume small amounts of these fatty acids preformed from animal foods so we can reduce the total amount of polyunsaturated fatty acids (PUFA) we need to obtain them. Moreover, some people with particularly low levels of the enzymes that make these conversions may be vulnerable to an actual deficiency of the elongated forms even while consuming plenty of pro-oxidant PUFA from plant oils.

Vegetarians have 30 percent lower levels of EPA and DHA than omnivores, while vegans have over 50 percent lower EPA and almost 60 percent lower DHA. By contrast, vegetarians have 10 percent higher levels and vegans have over twenty percent higher levels of linoleic acid, the omega-6 precursor fatty acid.³⁶ If this situation is characteristic of omnivores eating a standard diet high in polyunsaturated oils, we can imagine what the comparison might look like between vegans and vegetarians with a population that avoids PUFA-rich vegetable oils and consumes elongated EFA-rich liver, egg yolks, and small amounts of cod liver oil. The latter diet allows no deficiency of these fatty acids but provides a minimum of total PUFA, and therefore a minimum of oxidative stress and aging-related damage.

CONDITIONALLY ESSENTIAL AMINO ACIDS

There are a number of amino acids and related compounds that are not technically essential, but are useful in the diet, possibly essential under certain conditions, and found exclusively or almost exclusively in animal products. These include carnitine, taurine, creatine and carnosine.³⁷

Carnitine shuttles fatty acids into the mitochondria, the so-called “power house of the cell,” to be burned for energy, and recycles pantothenic acid, an important B vitamin. Omnivorous diets provide between two and twelve times as much carnitine from meat as the body can produce by endogenous synthesis. Moreover, its synthesis

requires vitamins C, B₁₂, and B₆. Vegetarian diets tend to be rich in vitamin C but poor in these B vitamins, so synthesis could be compromised. A reduced rate of synthesis and little or no intake could lead to an impaired ability to utilize fat for energy and a lower pantothenic acid status.³⁷

Taurine and glycine are both incorporated into bile acids, but those incorporating taurine are absorbable much further down in the intestines and are therefore much more effective at maximizing the absorption of fat and fat-soluble vitamins. Taurine is also involved in preventing drug-induced cardiac arrhythmia, maintaining the electrical activity of the retina and supporting the development of the brain. The developing brain contains three to four times as high a concentration of taurine as the adult brain, so taurine is particularly important for nursing infants. It is found almost exclusively in animal products and its endogenous synthesis requires vitamin B₆. The serum concentrations of vegans and infants nursing from them are lower than that of their omnivore counterparts, which may compromise the development of the nervous system.³⁷

Creatine is necessary for the maintenance of the cellular energy supply, especially during bursts of physical activity, and its supplementation is therefore useful for athletic performance. The endogenous synthesis is one to two grams per day while meat provides one gram per serving, so meat-inclusive diets make a substantial contribution to total creatine status. While vegetarians may not be at risk for an actual creatine deficiency, the additional creatine from meat could be helpful in boosting physical performance.³⁷

Carnosine functions as a neurotransmitter and is a powerful inhibitor of a process called glycation, whereby sugars and PUFA bind up with proteins and produce advanced glycation end products (AGEs), which are believed to contribute to the adverse effects of aging. It is found exclusively in animal products, which may be one reason why vegetarians and vegans have higher levels of AGEs than omnivores.^{37,38}

CHOLESTEROL

Most people make enough cholesterol to fulfill their body’s needs; cholesterol is therefore not considered an essential nutrient. There are, however, millions of people with genetic defects

in cholesterol synthesis for whom dietary cholesterol is likely an essential nutrient.

Smith-Lemli-Opitz Syndrome (SLOS) is the best-understood cholesterol deficiency syndrome. It results from a genetic defect in the enzyme that converts 7-dehydrocholesterol (a common precursor of vitamin D and cholesterol) to cholesterol. Most commonly, it results in spontaneous abortion within the first sixteen weeks of gestation so it shows up in only one in 60,000 live births. Children who are born with the defect may suffer from mental retardation, autism, facial and skeletal malformations, visual dysfunctions and failure to thrive. The current treatment is dietary cholesterol.³⁹

Because both parents must supply a defective copy of the gene in order for SLOS to manifest, and because most pregnancies that would result in an SLOS birth are spontaneously terminated, the number of people who carry a single copy of the defective gene is far higher than the number of people with the full-blown syndrome. One in a hundred North American Caucasians and as many as one in fifty or even one in thirty Central Europeans carry the defective gene. These people, called “SLOS carriers,” have a decreased rate of cholesterol synthesis, but still synthesize enough to escape the severe risks and abnormalities that characterize clinical SLOS.⁴⁰

One small study has examined possible mental health effects in 105 SLOS carriers. Carriers were more than three times as likely to have attempted suicide as those who do not carry the gene, and the methods of committing suicide were more violent. Unfortunately, the study was not statistically powerful enough to conclusively determine whether or not these associations were due to chance, but it was powerful enough to show a conclusive relationship between carrying the gene and having biological relatives who attempted suicide. Carriers were more than four times as likely as controls to have at least one biological relative and almost six times as likely to have a first-degree relative who attempted or committed suicide.⁴¹

It may be the case, then, that dietary cholesterol is an essential nutrient for one to three percent of the population. There may also be additional genetic defects or variations in cho-

lesterol synthesis that may make dietary cholesterol essential. For these groups, animal foods are absolutely necessary.


THE ESSENTIALITY OF ANIMAL FOODS

When Weston Price traveled to the South Sea Islands of the Pacific, he hoped to find “plants or fruits which together, without the use of animal products, were capable of providing all of the requirements of the body for growth and for maintenance of good health and a high state of physical efficiency.” He was disappointed. On the island of Viti Levu, he instead found inland-dwelling groups relying largely on plant products who found it so essential to consume shellfish at least once every few months that they would trade plant foods from the mountains for shellfish with coast-dwelling groups even when these groups were at war with each other.

Shellfish are especially dense in animal-based nutrients. One serving of clams per month provides the same amount of vitamin B₁₂ as two servings of salmon per week. One serving of oysters per week likewise provides the same amount of zinc as a quarter pound of beef per day. People who wish to minimize their intake of animal products would do best to consume small amounts of shellfish to obtain these nutrients. For those who do not wish to eat shellfish, the requirement for animal products might be much higher.

Price’s research led him to the following conclusion about vegetarianism: “As yet, I have not found a single group of primitive racial stock which was building and maintaining excellent bodies by living entirely on plant foods. I have found in many parts of the world most devout representatives of modern ethical systems advocating restriction of foods to the vegetable products. In every instance where the groups involved had been long under this teaching, I found evidence of degeneration in the form of abnormal dental arches to an extent very much higher than in the primitive groups who were not under this influence.”

Thus, we can conclude from Dr Price’s studies and a large body of subsequent research that animal foods should be used throughout childhood development, especially those animal foods that are richest in vitamins and minerals, such as liver, shellfish, egg yolks, bone broths, and high-quality dairy products. Depending on their individual constitutions, adults may have varying needs for animal products and those who object to the use of meat should either consume shellfish on a weekly or monthly basis, or high-quality dairy and egg products on a daily basis. Additionally, red palm oil and bananas would respectively be useful sources of carotenoids and vitamin B₆.

Many people may last a long time on a diet that does not contain optimal levels of animal products, while others like myself may develop health problems very quickly. Given all the nutrients that are so much more easily obtained from animal products, it should not be surprising that some people adopting a vegetarian or vegan diet may develop deficiencies very quickly. Each person has to pay careful attention to his or her own body and give it the nutrients it needs—and for many people this will mean giving up on the myths of vegetarianism and consuming the animal products we require by nature. 

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Twenty-Two Reasons Not to Go Vegetarian

By Sally Fallon

Currently making the rounds on the internet is an article resurrected from a 1999 issue of *Vegetarian Times*, “22 Reasons to Go Vegetarian.”

“Consider making this healthy choice as one of your new year’s resolutions. . .” says the teaser. “Stacks of studies confirm that a diet full of fresh fruits and vegetables and grains is your best bet for living a longer, healthier and more enjoyable life. There are literally hundreds of great reasons to switch to a plant-based diet; here are 22 of the best.”

Leaving aside for the moment the fact that a “plant-based diet” is not necessarily the same as a vegan diet, and that in the US a diet containing fresh fruits, vegetables and whole grains is a marker for prosperity and health consciousness (and therefore would naturally give better results than a diet lacking in these items), let’s look first at the American origins of the premise that a diet composed largely of fruits, vegetables and grains (presumably whole grains) is a passport to good health.

In spite claims to “stacks of studies,” there is actually very little scientific literature that carefully compares mortality and disease rates in vegetarians and nonvegetarians.

The American Vegetarian Society was founded in 1850 by Sylvester Graham (1794-1851), an early advocate of dietary reform in United States and the inventor of Graham bread, made from chemical-free unsifted flour. Highly influential, Graham promoted vegetarianism and a high-fiber diet as a cure for alcoholism and lust. Graham preached that an unhealthy diet (one containing the confounding variables of meat and white flour) stimulated excessive sexual desire, which irritated the body and caused disease.

John Harvey Kellogg (1852-1943) followed in Graham’s footsteps. Inventor of corn flakes and a process for making peanut butter, Kellogg advocated a high-fiber vegetarian diet to combat the twin evils of constipation and “natural urges.” Kellogg preached against sexual activity even in marriage.

Today we recognize the demonization and suppression of “natural urges” as a recipe for the pathological expression thereof; in fact we’d probably label Graham and Kellogg as nut cases suffering from serious insecurities. But the diet proposed to accomplish their goal of character building and social piety is still with us, enshrined, in fact, in the government-sanctioned food pyramid based on grains, vegetables and fruits with the addition of small amounts of low-fat animal foods. Lop off the top of the pyramid and you have the vegan diet, still promoted with religious fervor even though its original dogmatic basis has been forgotten. The language of moral rectitude still lurks in the vegetarian arguments of sexually liberated New Age youth.

With these paradoxes in mind, let’s examine the 22 reasons given for adopting a vegan diet.

1. YOU’LL LIVE A LOT LONGER:

Vegetarians live about seven years longer, and vegans (who eat no animal products) about 15 years longer than meat eaters, according to a study from Loma Linda University. These findings are backed up by the China Health Project (the largest population study on diet and health to date), which found that Chinese people who eat the least amount of fat and animal products have the lowest risks of cancer, heart attack and other chronic degenerative diseases.

Reference please? We haven’t found such

statistics in a search of the medical database.

In spite of claims to “stacks of studies,” there is actually very little scientific literature that carefully compares mortality and disease rates in vegetarians and nonvegetarians. In 1991, Dr. Russell Smith, a statistician, analyzed the existing studies on vegetariansim¹ and discovered that while a number of studies show that vegetarian diets significantly decrease blood cholesterol levels, very few have evaluated the effects of vegetarian diets on overall mortality. His careful analysis (see sidebar) revealed no benefit from vegetarianism in terms of overall mortality or longevity. In fact, Smith speculated on the possibility that the available data from the many existing prospective studies were left unpublished because they failed to reveal any benefits of the vegetarian diet. He notes, for example, mortality statistics are strangely absent from the Tromso Heart Study in Norway, which showed that vegetarians had slightly lower blood cholesterol levels than nonvegetarians.²

Since the publication of Russell Smith’s analysis, two significant reports on vegetarianism and mortality have appeared in the literature. One was a 2005 German paper that compared mortality in German vegetarians and health-conscious persons in a 21-year followup.⁷ By comparing vegetarians with health-conscious meat eaters, the German researchers eliminated the major problem in studies that claim to have found better mortality rates in vegetarians compared to the general population. Vegetarians tend not to smoke, drink alcohol or indulge in sugar and highly processed foods. To compare these individuals to meat-eaters on the typical western diet will naturally yield results that favor vegetarianism. But in the German study, both vegetarians and nonvegetarian health-conscious persons had reduced mortality compared with the general population, and it was other factors—low prevalence of smoking and moderate or high levels of physical activity—that were associated with reduced overall mortality, not the vegetarian diet.

The other was a 2003 report that followed up on The Health Food Shoppers Study in the 1970s and the Oxford Vegetarians Study in the 1980s.⁸ The mortality of both the vegetarians and the nonvegetarians in these studies was low

ANALYSIS OF VEGETARIAN STUDIES BY RUSSELL SMITH

Russell Smith, PhD, was a statistician and critic of the lipid heart theory of heart disease. He is the author of the massive *Diet, Blood Cholesterol and Coronary Heart Disease: A Critical Review of the Literature* (1991, Vector Enterprises), as well as *The Cholesterol Conspiracy* (Warren H. Green, Inc., 1991). As part of his efforts to reveal the flimsiness of the theoretical basis for the lipid hypothesis, he also looked at studies on vegetarianism in the scientific literature.

In a review of some 3,000 articles, Smith found only two that compared mortality data for vegetarians and non-vegetarians. One was a 1978 study of Seventh Day Adventists (SDAs) to which the above unreferenced claim probably refers. Two very poor analyses of the data were published in 1984, one by H. A. Kahn and one by D. A. Snowden.³

The publication by Kahn rather arbitrarily threw out most of the data and considered only subjects who indicated very infrequent or very frequent consumption of the various foods. The author then computed "odds ratios" which showed that mortality increased as meat or poultry consumption increased (but not for cheese, eggs, milk or fat attached to meat). When Smith analyzed total mortality rates from the study as a function of the frequencies of consuming cheese, meat, milk, eggs and fat attached to meat, he found that the total death rate decreased as the frequencies of consuming cheese, eggs, meat and milk increased. He called the Kahn publication "yet another example of negative results which are massaged and misinterpreted to support the politically correct assertions that vegetarians live longer lives."

The Snowden analysis looked at mortality data for coronary heart disease (CHD), rather than total mortality data, for the 21-year SDA study. Since he did not eliminate the intermediate frequencies of consumption data on meat, but did so with eggs, cheese and milk, this analysis represents further evidence that both Kahn and Snowden based their results on arbitrary, after-the-fact analysis and not on pre-planned analyses contingent on the design of their questionnaire. Snowden computed relative risk ratios and concluded that CHD mortality increased as meat consumption increased. However, the rates of increase were trivial at 0.04 percent and 0.01 percent respectively for males and females. Snowden, like Kahn, also found no relationship between frequency of consumption of eggs, cheese and milk and CHD mortality "risk."

Citing the SDA study, other writers have claimed that nonvegetarians have higher all-cause mortality rates than vegetarians⁴ and that, "There seems little doubt that SDA men at least experience less total heart disease than do others. . ."⁵ The overpowering motivation to show that a diet low in animal products protects against CHD (and other diseases) is no better exemplified than in the SDA study and its subsequent analysis. While Kahn and Snowden both used the term "substantial" to describe the effects of meat consumption on mortalities, it is obvious that "trivial" is the appropriate descriptor. It is also interesting to note that throughout their analyses, they brushed aside their totally negative findings on foods which have much greater quantities of fat, saturated fat and cholesterol.

The second study was published by Burr and Sweetnam in 1982.⁶ It was shown that annual CHD death rate among vegetarians was only 0.01 percent lower than that of nonvegetarians, yet the authors indicated that the difference was "substantial."

The table below presents the annual death rates for vegetarians and nonvegetarians which Smith derived from the raw data in the seven-year Burr and Sweetnam study. As can be seen, the "marked" difference between vegetarian and nonvegetarian men in Ischemic Heart Disease (IHD) was only .11 percent. The difference in all-cause death rate was in the opposite direction, a fact that Burr and Sweetnam failed to mention. Moreover, the IHD and all-cause death rates among females were actually slightly greater for heart disease and substantially greater for all causes in vegetarians than in nonvegetarians.

ANNUAL DEATH RATES OF VEGETARIANS AND NONVEGETARIANS

	IHD	All-Cause
Male vegetarians	.22%	.93%
Male nonvegetarians	.33%	.88%
Female vegetarians	.14%	.86%
Female nonvegetarians	.10%	.54%

These results are absolutely not supportive of the proposition that vegetarianism protects against either heart disease or all-cause mortalities. They also indicate that vegetarianism is more dangerous for women than for men.

compared with national rates in the UK. Within the studies, mortality for major causes of death was not significantly different between vegetarians and nonvegetarians, although there was a non-significant reduction in mortality from ischemic heart disease among vegetarians.

As for Colin Campbell's China Study, often cited as proof that plant-based diets are healthier than those containing animal foods, the data on consumption and disease patterns collected by the Cornell University researchers in their massive dietary survey do *not* support such claims. What the researchers discovered was that meat eaters had lower triglycerides and less cirrhosis of the liver, but otherwise they found no strong correlation, either negative or positive, with meat eating and any disease.⁹

In his introduction to the research results, study director Campbell refers to "considerable contemporary evidence supporting the hypothesis that the lowest risk for cancer is generated by the consumption of a variety of fresh plant products."¹⁰ Yet Cornell researchers found that the consumption of green vegetables, which ranged from almost 700 grams per day to zero, depending on the region, showed no correlation, either positive or negative, with any disease. Dietary fiber intake seemed to protect against esophageal cancer, but was positively correlated with higher levels of TB, neurological disorders and nasal cancer. Fiber intake did not confer any significant protection against heart disease or most cancers, including cancer of the bowel.

In a 1999 article published in *Spectrum*, Campbell claimed the Cornell findings suggested "that a diet high in animal products produces disease, and a diet high in grains, vegetables and other plant matter produces health."¹¹ Such statements by the now-famous Campbell are misleading, to put it mildly, and have influenced many unsuspecting consumers to adopt a vegetarian lifestyle in the hopes of improving their health.

2. YOU'LL SAVE YOUR HEART:

Cardiovascular disease is still the number one killer in the United States, and the standard American diet (SAD) that's laden with saturated fat and cholesterol from meat and dairy is largely to blame. Plus, produce contains no saturated fat or cholesterol. Incidentally, cholesterol levels for vegetarians are 14 percent lower than meat eaters.

"Stacks of evidence" now exist to refute the notion that cholesterol levels and consumption of saturated fat have anything to do with heart disease, but this is a convenient theory for promoting vegetable oil consumption at the expense of animal fats. The International Atherosclerosis

Project found that vegetarians had just as much atherosclerosis as meat eaters.¹² Vegetarians also have higher levels of homocysteine, a risk marker for heart disease.¹³

The standard American diet is not, unfortunately, "laden with saturated fat and cholesterol." It is, however, laden with *trans* fats and refined vegetable oils, both derived from plants, and it is these processed fats and oils that are associated with the increase in heart disease, not saturated animal fats.

3. YOU CAN PUT MORE MONEY IN YOUR MUTUAL FUND:

Replacing meat, chicken and fish with vegetables and fruits is estimated to cut food bills.

Some plant foods, such as nuts and breakfast cereals, are very expensive. And any analysis of your food budget must necessarily include medical and dental expenses, and also account for reduced income due to missed days at work, lack of energy and the behavioral difficulties that result from B₁₂ deficiency. A low-cost vegetarian diet that renders you incapable of performing a well-paid, high-stress job—the kind that allows you to put money into a mutual fund—is a poor bargain in the longterm.

4. YOU'LL REDUCE YOUR RISK OF CANCER:

Studies done at the German Cancer Research Center in Heidelberg suggest that this is because vegetarians' immune systems are more effective in killing off tumour cells than meat eaters. Studies have also found a plant-based diet helps protect against prostate, colon and skin cancers.

The claim that vegetarians have lower rates of cancer compared to nonvegetarians has been squarely contradicted by a 1994 study comparing vegetarians with the general population.¹⁴ Researchers found that although vegetarian Seventh Day Adventists have the same or slightly

Speed Bump



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HOW TO PROTECT YOURSELF AGAINST CANCER WITH FOOD

Most of the nutrients that protect us against cancer come from animal sources.

- ♦ **VITAMIN A:** Strengthens the immune system. Essential for mineral metabolism and endocrine function. Helps detoxify. True vitamin A is found only in animal foods such as cod liver oil; fish and shellfish; and liver, butter and egg yolks from pasture-fed animals. Traditional diets contained ten times more vitamin A than the typical modern American diet.
- ♦ **VITAMIN C:** An important antioxidant that prevents damage by free radicals. Found in many fruits and vegetables but also in certain organ meats valued by primitive peoples.
- ♦ **VITAMIN B₆:** Deficiencies are associated with cancer. Contributes to the function of over 100 enzymes. Most bio-available from animal foods.
- ♦ **VITAMIN B₁₂:** Deficiencies are associated with cancer. Found only in animal foods.
- ♦ **VITAMIN B₁₇:** Protects against cancer. Found in a variety of organically grown grains, legumes, nuts and berries.
- ♦ **VITAMIN D:** Required for mineral absorption. Strongly protective against breast and colon cancer. Found only in animal foods such as cod liver oil, lard, shellfish and butterfat, organ meats and egg yolks from grass-fed animals. Traditional diets contained ten times more vitamin D than the typical modern American diet.
- ♦ **VITAMIN E:** Works as an antioxidant at the cellular level. Found in unprocessed oils as well as in animal fats like butter and egg yolks.
- ♦ **CONJUGATED LINOLEIC ACID (CLA):** Strongly protective against breast cancer. Found in the butterfat and meat fat of grass-fed ruminant animals.
- ♦ **CHOLESTEROL:** A potent antioxidant that protects against free radicals in cell membranes. Found only in animal foods.
- ♦ **MINERALS:** The body needs generous amounts of a wide variety of minerals to protect itself against cancer. Minerals like zinc, magnesium and selenium are vital components of enzymes that help the body fight carcinogens. Minerals are more easily absorbed from animal foods.
- ♦ **LACTIC ACID AND FRIENDLY BACTERIA:** Contribute to the health of the digestive tract. Found in old fashioned lacto-fermented vegetables, cultured dairy foods and traditionally prepared cured meats.
- ♦ **SATURATED FATS:** Strengthen the immune system. Needed for proper use of the essential fatty acids. The lungs cannot function without saturated fats. Found mostly in animal foods.
- ♦ **LONG-CHAIN FATTY ACIDS:** Arachidonic acid (AA), eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) help fight cancer on the cellular level. They are found mostly in animal foods such as butter, organ meats, cod liver oil and seafood.
- ♦ **CO-ENZYME Q₁₀:** Highly protective against cancer. Found only in animal foods.

COMPOUNDS IN PROCESSED FOODS THAT CAN CAUSE CANCER

Most of these substances occur in large amounts in commercially packaged plant foods.

- ♦ **TRANS FATTY ACIDS:** Imitation fats in shortenings, margarines and most commercial baked goods and snack foods. Strongly associated with cancer of the lungs and reproductive organs.
- ♦ **RANCID FATS:** Industrial processing creates rancidity (free radicals) in commercial vegetable oils.
- ♦ **OMEGA-6 FATTY ACIDS:** Although needed in small amounts, an excess can contribute to cancer. Dangerously high levels of omega-6 fatty acids are due to the overuse of vegetable oils in modern diets.
- ♦ **MSG:** Associated with brain cancer. Found in almost all processed foods, even when "MSG" does not appear on the label. Flavorings, spice mixes, soy protein isolate and hydrolyzed protein contain MSG.
- ♦ **ASPARTAME:** Imitation sweetener in diet foods and beverages. Associated with brain cancer.
- ♦ **PESTICIDES:** Associated with many types of cancer. Found in most commercial vegetable oils, fruit juices, vegetables and fruits.
- ♦ **HORMONES:** Found in animals raised in confinement on soy and grains. Plant-based hormones are plentiful in soy foods.
- ♦ **ARTIFICIAL FLAVORINGS AND COLORS:** Associated with various types of cancers, especially when consumed in large amounts in a diet of junk food.
- ♦ **REFINED CARBOHYDRATES:** Sugar, high fructose corn syrup and white flour are devoid of nutrients. The body uses up nutrients from other foods to process refined carbohydrates. Tumor growth is associated with sugar consumption.

lower cancer rates for some sites, for example 91 percent instead of 100 percent for breast cancer, the rates for numerous other cancers are much higher than the general US population standard, especially cancers of the reproductive tract. SDA females had more Hodgkins disease (131 percent), more brain cancer (118 percent), more malignant melanoma (171 percent), more uterine cancer (191 percent), more cervical cancer (180 percent) and more ovarian cancer (129 percent) on average.

According to scientists at the Cancer Research UK Epidemiology Unit, University of Oxford, “Studies of cancer have not shown clear differences in cancer rates between vegetarians and non vegetarians.”¹⁵

5. YOU’LL ADD COLOR TO YOUR PLATE:

Meat, chicken and fish tend to come in boring shades of brown and beige, but fruits and vegetables come in all colors of the rainbow. Disease fighting phytochemicals are responsible for giving produce their rich, varied hues. So cooking by color is a good way to ensure you’re eating a variety

of naturally occurring substances that boost immunity and prevent a range of illnesses.

Salmon, eggs and butter have beautiful color. Nothing prevents meat-eaters from adding color to their plate by using a variety of vegetables and fruits. The nutrients from these plant foods will be more easily absorbed if you serve them with butter or cream. Animal foods provide an abundance of “naturally occurring substances that boost immunity and prevent a range of illnesses.”

6. YOU’LL FIT INTO YOUR OLD JEANS:

On average, vegetarians are slimmer than meat eaters, and when we diet, we keep the weight off up to seven years longer. That’s because diets

VEGETARIANISM: VARIATIONS ON A THEME

By Jim Earles

VEGETARIANISM: In its simplest form, the abstinence from all flesh foods—those foods which inherently require the taking of an animal’s life—in favor of plant foods. Without further qualifying terms, the term “vegetarian” does not specify whether or not a person might choose to eat animal products like milk and eggs, which do not inherently require the taking of an animal’s life.

LACTO-VEGETARIANISM: A vegetarian diet with the inclusion of milk and/or dairy products.

OVO-VEGETARIANISM: A vegetarian diet with the inclusion of eggs (usually eggs from chickens or other fowl, but presumably an ovo-vegetarian might also eat fish roe).

PESCO-VEGETARIANISM (a.k.a. pescetarianism): A vegetarian diet with the exception of consuming fish and/or seafood. This is often viewed by adherents as being a voluntary abstention from eating land animals. This diet is similar to (and often overlaps with) the popular version of the Mediterranean Diet.

POLLO-VEGETARIANISM (a.k.a. pollotarianism): A vegetarian diet with the exception of consuming chicken (and possibly other types of fowl). This is often viewed by adherents as being a voluntary abstention from red meats and from eating more highly-developed mammals such as cows, pigs, sheep, etc. **NOTE:** Many vegetarians do not feel that people who include seafoods or land fowl in their diets qualify as vegetarians at all. Indeed, many practicing pescetarians and pollotarians feel that their diet is a similar but entirely distinct dietary philosophy from vegetarianism. Some people prefer to use terms such as “semi-vegetarianism” or “flexitarianism” to refer to the primary (but not exclusive) practice of vegetarianism. **ALSO NOTE:** The above variants on vegetarianism may be combined in any way to describe an individual’s food choices. (e.g. lacto-ovo-vegetarianism, pollo-ovo-vegetarianism, etc.)

VEGANISM: The more extreme end of the scale of vegetarianism. A vegan (both “vee-gan” and “vay-gan” are accepted pronunciations) abstains from all animal foods, including any meats, fish, eggs or dairy. Some vegans, but not all of them, also abstain from honey and other bee products, as well as clothing and materials made from animal products (e.g. silk, leather, fur, etc.). Many vegans view their dietary choices as being just a part of veganism, which is more fully viewed as a way of life and a socio-political stance.

FREEGANISM: A subset of veganism which utilizes the same basic food choices but often lives out the socio-political aspects of veganism in an even more direct and radical way. Freegans seek to minimize or eliminate participation in the corporate food system by practices such as foraging for wild plant foods, community gardening, bartering for food instead of using money and dumpster diving (taking food that is still edible but past its expiration date out of supermarket, restau-

that are higher in vegetable proteins are much lower in fat and calories than the SAD. Vegetarians are also less likely to fall victim to weight-related disorders like heart disease, stroke and diabetes.

Studies do show that vegetarians on average have lower body mass than non-vegetarians, but vegetarianism does not confer protection from stroke and diabetes and provides only minimal protection against heart disease. Some people do gain weight—lots of weight—on a vegetarian diet and many vegetarians are far too thin.

7. YOU'LL GIVE YOUR BODY

A SPRING CLEANING:

Giving up meat helps purge the body of

toxins (pesticides, environmental pollutants, preservatives) that overload our systems and cause illness. When people begin formal detoxification programs, their first step is to replace meats and dairy products with fruits and vegetables and juices.

There are no studies showing that elimination of meat from the diet helps “purge the body of toxins.” The wording is interesting as it implies that vegetarianism will render a sinful body pure.

Most plant foods today are loaded with pesticides and many components in animal products support the body’s detoxification system—such as iron in meat, amino acids in bone broths, vitamin A in liver and saturated fat in butter.

No doubt about it, however, toxins are everywhere, in plant foods and animal foods. Health conscious consumers need to do their best to reduce the toxic load by choosing organic plant foods and pasture-raised animal foods.

The Honolulu Heart Study found an interesting correlation of

rant and bakery dumpsters). Dumpster diving especially is seen as a radical form of environmental stewardship—saving otherwise good food from going to a landfill. Getting food for free in this way also gives rise to the name—“free” plus “vegan” equals “freegan.”

MEAGANISM: A further subset of freeganism! A meagan would dispense with the strict adherence to a vegan diet when their dumpster diving provides them with usable meat or other animal foods. (“Meat” plus “vegan” equals “meagan.”) Some meagans argue that all foods produced by the dominant corporate model are ethically-tainted, meatless or otherwise. Following this line, there is no moral high ground to be had when eating salvaged food. Other meagans believe that it is disrespectful to the spirit of an animal to allow its flesh or other products to be wasted, so it is better to eat these items and honor the loss of their lives by keeping them in the food chain whenever possible.

FRUITARIANISM: A subset of veganism wherein neither animals nor plants are allowed to be harmed or killed to feed human beings. This means that only the fruits of plants and trees are morally acceptable as human food, as these may be harvested without doing any harm to the plant. However, there is no strong consensus among fruitarians as to what exactly should constitute “fruit.” Botanically speaking, some common vegetables are actually classified as fruits (such as bell peppers, tomatoes and cucumbers), as are nuts and grains. Some fruitarians abide by the wider, botanical meaning of “fruit,” while others only eat the sweet, fleshy, more commonly-known fruits. Many fruitarians also include seeds in their diet, following the line of thought that anything that naturally falls from a plant (or would do so) is valid food.

LIQUIDARIANISM / JUICEARIANISM: A rarely-espoused dietary philosophy wherein adherents only consume liquids and fruit and vegetable juices. More often than not, such a program would only be undertaken for a limited period of time only for the purposes of a cleansing fast. However, a relatively small number of people have attempted to maintain such a regime over an indefinite period of time.

RAW FOODISM: While not necessarily falling under any of the above headings, many raw foodists base their food choices on some form of vegetarianism or veganism. A raw foodist consumes most or all of their foods in uncooked and unprocessed forms. (This may or may not include practices such as the soaking of nuts, seeds and grains.) While many raw foodists minimize or exclude animal products, some do consume raw meats, eggs and dairy products.

MACROBIOTICS: Again not necessarily falling under any vegetarian category, but many macrobiotic adherents have strong overlap with vegetarianism and veganism. The macrobiotic diet emphasizes eating foods that are grown locally and (to the extent possible) when they are actually in season, placing an emphasis on eating grains, legumes, vegetables, fruits, nuts, seeds, fermented soy products and sometimes fish. Processed foods and animal products are typically excluded, as are vegetables of the nightshade family.

VEGANGELICAL: Extreme veganism, where eating habits have become a highly intolerant, proselytizing religion!

Parkinson's disease with the consumption of fruit and fruit juices.¹⁶ Men who consumed one or more servings of fruit or fruit drinks per day were twice as likely to develop Parkinson's as those who consumed less fruit. Commentators proposed either high levels of pesticides or natural nerve toxins called isoquinolones that occur in fruit as the cause. Salicylates are another component of fruit that can lead to problems. So even the consumption of "healthy" fruit is not necessarily safe.

8. YOU'LL MAKE A STRONG POLITICAL STATEMENT:

It's a wonderful thing to be able to finish a delicious meal, knowing that no beings have suffered to make it.

Not a single bite of food reaches our mouths that has not involved the killing of animals. By some estimates, at least 300 animals per acre—including mice, rats, moles, groundhogs and birds—are killed for the production of vegetable and grain foods, often in gruesome ways. Only one animal per acre is killed for the production of grass-fed beef and no animal is killed for the production of grass-fed milk until the end of the life of the dairy cow.

And what about the human beings, especially growing human beings, who are suffering from nutrient deficiencies and their concomitant health problems as a consequence of a vegetarian diet? Or does only animal suffering count?

Of course, we should all work for the elimination of confinement animal facilities, which do cause a great deal of suffering in our animals, not to mention desecration of the environment. This will be more readily accomplished by the millions of meat eaters opting for grass-fed animal foods than by the smaller numbers of vegetarians boycotting meat.

Vegetarians wishing to make a political statement should strive for consistency. Cows are slaughtered not only to put steak on the table, but to obtain components used in soaps, shampoos, cosmetics, plastics, pharmaceuticals, waxes (as in candles and crayons), modern building

materials and hydraulic brake fluid for airplanes. The membrane that vibrates in your telephone contains beef gelatin. So to avoid hypocrisy, vegetarians need to also refrain from using anything made of plastic, talking on the telephone, flying in airplanes, letting their kids use crayons, and living or working in modern buildings.

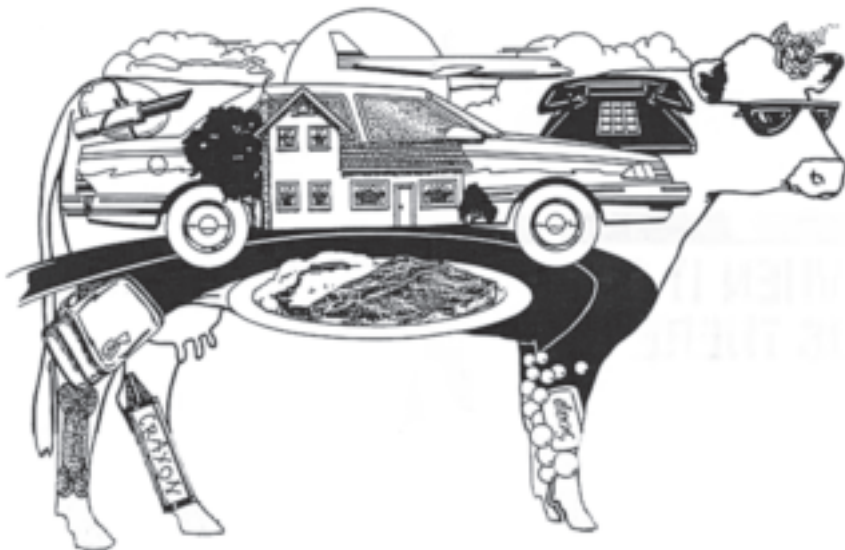
The ancestors of modern vegetarians would not have survived without using animal products like fur to keep warm, leather to make footwear, belts, straps and shelter, and bones for tools. In fact, the entire interactive network of life on earth, from the jellyfish to the judge, is based on the sacrifice of animals and the use of animal foods. There's no escape from dependence on slaughtered animals, not even for really good vegan folks who feel wonderful about themselves as they finish their vegan meal.

9. YOUR MEALS WILL TASTE DELICIOUS:

Vegetables are endlessly interesting to cook and a joy to eat. It's an ever-changing parade of flavors and colors and textures and tastes.

To make processed vegetarian foods "taste delicious," manufacturers load them up with MSG and artificial flavors that imitate the taste of meat. If you are cooking from scratch, it is difficult to satisfy all the taste buds with dishes lacking animal foods. The umami taste is designed to be satisfied with animal foods.

PRODUCTS THAT COME FROM COWS



Not only the steak on your plate, but a myriad of other products come from slaughtered cows, including components used in the manufacture of cosmetics, plastics, waxes (in crayons and candles), soaps, cleansers, shampoos, modern building materials and hydraulic brake fluid for airplanes. The membrane that vibrates to make a telephone work is made from beef gelatin. Epinephrine, a widely used drug for asthma and allergic reactions, is made from beef adrenal glands.

In practice, very few people are satisfied with the flavors and tastes of a diet based exclusively on plant foods, even when these foods are loaded up with artificial flavors, which is why it is so difficult for most people to remain on a vegan diet. Vegetables are a lot more interesting and bring us a lot more joy when dressed with egg yolks and cream or cooked in butter or lard. But if you are a vegan, you'll be using either liquid or partially hydrogenated vegetable oils, both extremely toxic.

10. YOU'LL HELP REDUCE WASTE AND AIR POLLUTION:

Livestock farms create phenomenal amounts of waste, tons of manure, a substance that's rated by the Environmental Protection Agency (EPA) as a top pollutant. And that's not even counting the methane gas released by goats, pigs and poultry (which contributes to the greenhouse effect); the ammonia gases from urine; poison gases that emanate from manure lagoons; toxic chemicals from pesticides; and exhaust from farm equipment used to raise feed for animals.

The problem is not animals, which roamed the earth in huge numbers emitting methane, urine and manure long before humans came on the scene, but their concentration into confinement facilities. Only strong, committed, persistent and focused human effort will accomplish the goal of eliminating these abominations—the kind of strength, commitment, persistence and focus that only animal foods rich in cholesterol, zinc, good fats and vitamin B₁₂ can sustain. In nature and on old-fashioned farms, the urine and manure from animals is not a pollutant but a critical input that nourishes plant life. As for methane, the theory

that methane from animals contributes to global warming is just that—a theory, one that doesn't even pass the test of common sense.

Without urine and manure to nourish the soil, plant farmers need more pesticides, more chemicals. And there's only one way to eliminate exhaust from farm equipment used to raise plant foods for vegan diets—pull those plows with horses and mules.

11. YOUR BONES WILL LAST LONGER:

The average bone loss for a vegetarian woman at age 65 is 18 percent; for non-vegetarian women, it's double that. Researchers attribute this to the consumption of excess protein. Excess protein interferes with the absorption and retention of calcium and actually prompts the body to excrete calcium, laying the ground for the brittle bone disease osteoporosis. Animal proteins, including milk, make the blood acidic, and to balance that condition, the body pulls calcium from bones. So rather than rely on milk for calcium, vegetarians turn to dark green leafy vegetables, such as broccoli and legumes, which, calorie for calorie, are superior sources.

References, please?

The theory that excess protein causes bone loss was first presented in 1968¹⁷ and followed up in 1972 with a study comparing bone density of vegetarians and meat eaters.¹⁸ Twenty-five British lacto-ovo vegetarians were matched for age and sex with an equal number of omnivores. Bone density, determined by reading X-rays of the third finger metacarpal, was found to be significantly higher in the vegetarians—these are lacto-ovo vegetarians, not vegans, so they will have good calcium intake.

Dr. Herta Spencer, of the Veterans Administration Hospital in Hines, Illinois, explains that the animal and human studies that correlated calcium loss with high protein diets used isolated, fractionated amino acids from milk or eggs.¹⁹ Her studies show that when protein is given as meat, subjects do not show any increase in calcium excreted, or any significant change in serum calcium, even over a long period.²⁰ Other investigators found that a high-protein intake increased calcium absorption when dietary calcium was adequate or high, but not when calcium intake was a low 500 mg per day.²¹

So meat alone will not help build strong bones. But meat plus dairy is an excellent combination. The chart below illustrates the difficulty of obtaining adequate calcium from green leafy vegetables or legumes and contradicts the claim made above that leafy green vegetables and legumes

NO SUCH THING AS A GUILT-FREE LUNCH Letter published in the *New Yorker*, January 7, 2008

Bill Buford writes that nobody has a persuasive rejoinder to the vegan belief that sentient, warm-blooded creatures shouldn't be sacrificed for our sustenance [An article on meat-eating called "Red, White, and Bleu," December 3, 2007]. But if that's your ethic, you should seriously consider fasting. Countless millions of wee furry beasties, mice, moles and voles, as well as ground-nesting birds, are killed outright or die off from habitat destruction annually, when vast acreages are tilled by huge, mindless machines to grow "ethical" grains and vegetables. More are killed during the growing season by rodenticide grain baits, including zinc phosphide. Small mammals and birds are killed by machinery again at harvest time, and even more are killed by pest-control practices in granaries and processing plants before vegetables get to market. There's no such thing as a guilt-free lunch.

Rich Latimer, Falmouth, Massachusetts

supply more calcium on a per-calorie basis. The opposite is the case. The RDA for calcium can be met for under 700 calories using cheese or milk, but requires 1200 calories for spinach and 5100 calories for lentils. And not even the most dedicated vegetarians could choke down 13 cups of spinach or 32 cups of lentils (that would be almost doubled once the lentils were cooked) per day (see sidebar, below). Leafy greens present additional problems because they contain calcium-binding oxalic acid.

Calcium assimilation requires not only adequate protein but also fat-soluble vitamins A, D and K₂, found only in animal fats. The lacto-ovo vegetarian consuming butter and full fat milk will take in the types of nutrients needed to maintain healthy bone mass, but not the vegan.

12. YOU'LL HELP REDUCE FAMINE:

It takes 15 pounds of feed to get one pound of meat. But if the grain were given directly to people, there'd be enough food to feed the entire planet. In addition, using land for animal agriculture is inefficient in terms of maximizing food production. According to the journal Soil and Water, one acre of land could produce 50,000 pounds of tomatoes, 40,000 pounds of potatoes, 30,000 pounds of carrots or just 250 pounds of beef.

No land anywhere in the world will produce 50,000 pounds of tomatoes, 40,000 pounds of potatoes or 30,000 pounds of carrots per acre year after year after year unless bolstered with fertilizer. Such land rotated with animal grazing will be fertilized naturally; without the manure and urine of animals, synthetics must be applied—synthetics that require large amounts of energy to produce and leave problematic pollutants, such as fluoride compounds, as a by-product. And much of the world's land—mountainous, hillside, arid and marginal areas—is incapable of producing harvestable crops even with a large fertilizer input. But this land will support animal life very well. Eliminating the animals on this land in order to produce vegetable crops will indeed create famine for the people who live there.

13. YOU'LL AVOID TOXIC CHEMICALS:

The EPA estimates that nearly 95 per cent of pesticide residue in our diet comes from meat, fish and dairy products. Fish, in particular, contain carcinogens (PCBs, DDT) and heavy metals (mercury, arsenic; lead, cadmium) that cannot be removed through cooking or freezing. Meat and dairy products are also laced with steroids and hormones.

Pesticides and heavy metals are found in animal foods only because they are applied to plant foods that feed the animals. Pasture-based livestock

production and wild caught fish do not contribute to pesticide residue. Conventionally raised vegetables and grains are loaded with chemicals.

Vitamin A obtained in adequate amounts from animal foods provides powerful protection against dioxins like PCBs and DDT.²³ Vitamin B₁₂ is also protective. Good gut flora prevents their absorption. Humans have always had to deal with environmental carcinogens—smoke is loaded with them—and heavy metals like mercury, which occur naturally in fish. We can deal with these challenges when we have adequate amounts of the nutrients supplied by animal foods.

14. YOU'LL PROTECT YOURSELF FROM FOODBORNE ILLNESSES:

According to the Center for Science in the Public Interest, which has stringent food standards, 25 per cent of all chicken sold in the United States carries salmonella bacteria and, the CDC estimates, 70 percent to 90 percent of chickens contain the bacteria campylobacter (some strains of which are antibiotic-resistant), approximately 5 percent of cows carry the lethal strain of E. coli O157:H7 (which causes virulent diseases and death), and 30 percent of pigs slaughtered each year for food are infected with toxoplasmosis (caused by parasites).

The most common source of food-borne illness by a long shot is fruits and vegetables.²⁴ Problems with animal foods stem from factory farming practices. Milk, meat and eggs raised naturally do not present problems of food-borne illness.

15. YOU MAY GET RID OF YOUR BACK PROBLEMS:

Back pain appears to begin, not in the back, but in the arteries. The degeneration of discs, for instance, which leads to nerves being pinched,

CALCIUM IN DAIRY PRODUCTS AND PLANT FOODS²²

	Calories per 100 grams	Calcium in mg per 100 grams	Calcium/Calorie Ratio	Amnt needed for RDA (1200 mg)
Cheddar cheese	402	718	1.8	170 grams (about 6 ounces) = 680 K
Whole milk	66	117	1.7	1000 grams (about 4 cups) = 660 K
Spinach	91	93	1.02	1300 grams (about 13 cups) = 1200 K
Lentils	106	25	0.23	4800 grams (about 32 cups) = 5100 K

starts with the arteries leading to the back. Eating a plant-based diet keeps these arteries clear of cholesterol-causing blockages to help maintain a healthy back.

This item is pure speculation. One of the most common side effects of cholesterol-lowering is crippling back pain. The muscles that support our spine require animal foods to maintain their integrity. And the bones in our spine need a good source of calcium, namely dairy products or bone broth, to remain strong.

16. YOU'LL BE MORE REGULAR:

Eating a lot of vegetables necessarily means consuming fiber, which pushes waste out of the body. Meat contains no fiber. Studies done at Harvard and Brigham Women's Hospital found that people who ate a high-fiber diet had a 42 percent lower risk of diverticulitis. People who eat lower on the food chain also tend to have fewer incidences of constipation, hemorrhoids and spastic colon.

Konstantin Monastyrsky, author of *Fiber Menace*, begs to differ. He notes that because fiber indeed slows down the digestive process, it interferes with the digestion in the stomach and, later, clogs the intestines. The results of delayed indigestion (dyspepsia) include heartburn (GERD), gastritis (the inflammation of the stomach's mucosal membrane), peptic ulcers, enteritis (inflammation of the intestinal mucosal membrane), and further down the tube, constipation, irritable bowel syndrome, ulcerative colitis, and Crohn's disease. Hemorrhoids and diverticulitis are other likely results—scientific studies do not support the theory that fiber prevents these conditions.²⁵

17. YOU'LL COOL THOSE HOT FLASHES:

Plants, grains and legumes contain phytoestrogens that are believed to balance fluctuating hormones, so vegetarian women tend to go through menopause with fewer complaints of sleep problems, hot flashes, fatigue, mood swings, weight gain, depression and a diminished sex drive.

Let's see now, hormones in meat and milk are bad (see Item 13), but by tortured vegetarian logic, hormones in plant foods are good. Where is the research showing that vegetarian women go through menopause with fewer complaints? Numerous studies have shown that the phytoestrogens in soy foods have an inconsistent effect on hot flashes and other symptoms of menopause.²⁶

The body needs cholesterol, vitamin A, vitamin D and other animal nutrients for hormone production. A vegetarian diet devoid of these nutrients is a recipe for menopausal problems, fatigue and diminished sex drive—the dietary proscriptions of the puritanical Graham and Kellogg work very well for their intended purpose, which is to wipe out libido in both men and women.

Lack of cholesterol, vitamin D and vitamin B₁₂ is a recipe for mood swings and depression. If you want to have a happy menopause, don't be a vegetarian!

18. YOU'LL HELP TO BRING DOWN THE NATIONAL DEBT:

We spend large amounts annually to treat the heart disease, cancer, obesity, and food poisoning that are byproducts of a diet heavy on animal products.

We have commented on the link between vegetarianism and heart disease, cancer, obesity and food poisoning above. The main change in the American diet paralleling the huge increase in health problems is the substitution of vegetable oils for animal fats. A secondary change is the industrialization of agriculture. The solution to our health crisis is to return to pasture-based farming methods and the animal food-rich diets of our ancestors.

19. YOU'LL PRESERVE OUR FISH POPULATION:

Because of our voracious appetite for fish, 39 per cent of the oceans' fish species are overharvested, and the Food & Agriculture Organization reports that 11 of 15 of the world's major fishing grounds have become depleted.

THE NUTRIENT DENSITY STAKES: LANDSLIDE VICTORY OF ANIMAL FOODS OVER FRUITS AND VEGETABLES

Plant foods fail to match up to animal foods in almost every category. Note that liver contains more vitamin C than apples or carrots!

Per 100 g	Phosphorus in mg	Iron in mg	Zinc in mg	Copper in mg	B ₂ in mg	A in IU	C in mg	B ₆ in mg	B ₁₂ in mcg
APPLE	000.6	0.1	0.05	00.04	0.02	00000	07.0	0.03	000
CARROTS	031.0	0.6	0.3	00.08	0.05	00000	06.0	0.1	000
RED MEAT	140	3.3	4.4	00.2	0.2	00040	00	0.07	001.84
LIVER	476	8.8	4.0	12.0	4.2	53,400	27	0.73	111.3

Let's pass laws against overfishing! And let's provide the incentive to anti-overfishing activists by pointing out the important benefits of seafood in the diet.

20. YOU'LL HELP PROTECT THE PURITY OF WATER:

It takes 2,500 gallons of water to produce one pound of mutton, but just 25 gallons of water to produce a pound of wheat. Not only is this wasteful, but it contributes to rampant water pollution.

Reference please? If a sheep drinks one gallon of water per day—which is a lot—the animal would only need about 600 gallons of water to yield almost eighty pounds of meat. That's less than eight gallons of water per pound, much less than the water required to produce a pound of wheat.

21. YOU'LL PROVIDE A GREAT ROLE MODEL FOR YOUR KIDS:


If you set a good example and feed your children good food, chances are they'll live a longer and healthier life. You're also providing a market for vegetarian products and making it more likely that they'll be available for the children.

You may not ever have any children if you follow a vegan diet, and in case you do, you will be condemning your kids to a life of poor health and misery. Here's what Dutch researcher P C Dagnelie has to say about the risks of a vegetarian diet: "A vegan diet. . . leads to strongly increased risk of deficiencies of vitamin B₁₂, vitamin B₂ and several minerals, such as calcium, iron and zinc. . . even a lacto-vegetarian diet produces an increased risk of deficiencies of vitamin B₁₂ and possibly certain minerals such as iron."²⁷ These deficiencies can adversely affect not only physical growth but also neurological development. And following a vegan diet while pregnant is a recipe for disaster.

You will, however, by embracing vegetarianism, provide a market for vegetarian products—the kind of highly processed, high-profit foods advertised in *Vegetarian Times*.

22. GOING VEGETARIAN IS EASY!

Vegetarian cooking has never been so simple. We live in a country that has been vegetarian by default. Our traditional dishes are loaded with the goodness of vegetarian food. Switching over is very simple indeed.

Going vegetarian is very difficult. The body needs animal foods and provides a powerful drive to eat them. Cravings and resentment are a natural byproduct of a vegetarian diet, not to mention separation from the majority of humankind by unnatural eating habits and sense of moral rectitude. 

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Eating by the Seasons in Russia

By Katherine Czapp

Like all great national cuisines, the Russian tradition developed as a unique response to its climate, geography and history. Over the centuries its culinary richness evolved as it absorbed and then transformed the influences brought by trade with Western Europe and the Orient, as well as through foreign invasion and its own territorial expansion. The highly sophisticated cuisine of the 17th and 18th centuries, with its elaborate courses, ornate table service, and exotic imported delicacies existed only for a rare few—the landed aristocracy and wealthiest city dwellers. The bulk of Russia’s population was scattered across a vast terrain in tiny villages, isolated by great distances, and feeding themselves from their own small farms and the forests, rivers and lakes nearby. Challenged by a harsh and often fickle northern climate, yet endowed with a creative native ingenuity, these peasants created a “cuisine of the people” out of simple ingredients that was nevertheless nourishing, appealing and enduring. With some additions and refinements, this peasant cuisine became the solid basis of Russian cooking up until the twentieth century.

The great reliance on grains resulted in creative ways of preparing each one, both to provide variation in the diet and to maximize their nutritive value.

MEDIEVAL RUS

The early Russian diet depended heavily on grain products, and especially those that could be grown during its short, cool growing season. Medieval records vividly depict in a few words the regular disasters and famine befalling both men and livestock in frequently undependable weather. These extracts describe a four-year span from *The Chronicle of Novgorod*, 1017-1471:

AD 1125...The same year there was a great storm with thunder and hail... it drowned droves of cattle in the Volkhov, and others they hardly saved alive.

AD 1127....And in the autumn the frost killed all the [grain] and the winter crop; and there was famine throughout the winter...

AD 1128...This year it was cruel; the people ate [linden] leaves, birch bark, pounded wood pulp mixed with husks and straw; some ate buttercups, moss, horse flesh; and thus many dropping down from hunger; their corpses were in the streets, in the market place, and on the roads, and everywhere. . . fathers and mothers would put their children into boats in gift to [foreign] merchants [to be slaves], or else put them to death.

When nature obliged, rye, spelt, millet, barley, oats and buckwheat were the primary grain crops, and provided the foundation of the diet in the form of bread, kasha, and grain product called kissel.

The Russians likely learned the art of sour-leavening bread from the Scythians—Central Asian nomads who ruled southern Russia for three centuries from about 300 AD. Sourdough rye bread has been recorded as a staple in the diet since at least the 9th century. It has remained a favorite and respected mainstay for centuries; revered even as the very essence of life. In the typical peasant diet an adult would consume close to two pounds of this dense, sour bread per day.

Wheat flour was introduced as a trade item during the 15th century, but was not suitable for growing in the northern European portion of Russia. After Ivan IV (the Terrible) conquered Kazan and Astrakhan in the 16th century, Russia gained territory where wheat could be grown, and this was transported to the rest of the country. In this era, filled, leavened pies, such as *pirogi*, made from wheat flour were introduced into the cuisine. The peasants continued to rely upon rye

as the source of their daily bread, however.

The great reliance on grains resulted in creative ways of preparing each one, both to provide variation in the diet and to maximize their nutritive value. Grain kissel, for instance, is a method of soaking, fermenting and cooking grain (and also dried peas) that produces a jelled liquid “concentrate” of the grain, and is usually eaten cool with sour cream or *kvas*. The procedure for oat kissel, for example, involves drying whole oats carefully on the floor of a warm brick oven, and then pounding the oats in a mortar to partially crush them. The oats are covered in hot water and left to sour in a warm place for a day and a half. The soured oats are then pushed through a sieve and the thick oat “milk” that is extruded is slowly cooked until it thickens further like a jelly. It is then poured into a wide plate and left to cool, becoming even more jelled. This oat “aspic,” served with sour cream or *kvas*, is considered especially good for children, the elderly and convalescents, as it is nutritious and very easy to digest. The soured oat remnants did not go to waste, but were stirred into flour, left for 24 hours to sour further, and then baked into flat breads called *lepyoshki*.

Kasha, or porridge, ascended to the status of a mass ritual dish between the 10th and 14th centuries. To mark great undertakings, such as the ground-breaking for a cathedral or fortress, a wedding, baptism, and so on, kasha was prepared to feed a large crowd. The word “kasha” became synonymous with “feast” and indeed there were many delicious ways to prepare it. The preferred grain for kasha was buckwheat, although barley, spelt and green rye were also made into kashas. The kasha was cooked in an oven in earthenware pots with a strong meat bouillon and any number of additions such as meat, mushrooms, and onions.

SHCHI AND SOUPS

Accompanying bread and grain was the other great mainstay of the traditional Russian peasant diet—soup, and in particular *shchi*. Shchi is a soup made from green cabbage in the summer and soured cabbage or sorrell in the winter. Depending upon the wealth of the household it could be very plain, made with just vegetables and herbs, or quite rich, made with a strong meat

broth and cooked with a large piece of meat that was served alongside. Often a thick *shchi* might make up the entire meal. Its popularity transcended all economic classes and was regularly served on the tables of the rich and poor alike. In a climate that experienced six months of winter each year, hot soup was a comfort as well as a nourishing centerpiece in the diet, and Russian cuisine has never lost the requirement of a first course of soup in the daily menu.

Borshch and *ukha* are two other basic soups common to Russian cuisine, although borshch is actually of Ukrainian origin. There are literally hundreds of borshch recipes, some including sausages and other cuts of meat and even beans, some are vegetarian, but the primary and sole requirement is that it must contain beets. Borshch is traditionally enhanced with sour cream in the soup plate, and often the broth is spiced with pickle brine.

Ukha is made from fish, yet is not technically a fish soup. The simplest method was to poach a whole fish in water with herbs and seasonings and the entire fish (including softened bones) would be eaten with its broth. A more elaborate variation calls for several varieties of bony fish to first be cooked to produce a stronger broth. These fish are then discarded and whole pieces of better quality fish are poached in this broth.

DAIRY PRODUCTS

Peasants with a bit of land to support a few pigs, chickens and a cow or two greatly improved their diets with meat, eggs and dairy products for most of the year. Most milk products were eaten fresh, or soured, such as clabbered milk (*prostokvasha*) and sour cream (*smetana*). Cheese was traditionally the simple dry-curd pot cheese (*tvorog*) made from raw milk that soured naturally into curds and was then strained. *Tvorog* is eaten as is with sweet or sour cream or spread thickly on bread, and can also be used in baked dishes. Another ancient means of preparing milk was “baking” it in an earthenware jug at very low temperatures in the brick oven overnight or all day until a thick, honey-brown skin appeared on the milk and it soured slightly. This *toplyonnoye moloko* was an early delicacy, somewhat similar to custard.

Kefir was originally a product of the tribal peoples of the northern Caucasus region and became a popular Russian food later on. Cultured dairy products (never sweetened) have always been a permanent fixture in the Russian diet, and even today a wide variety of fermented dairy products is commercially available in Russia, including several varieties of kefir cultures and two varieties of “baked” fermented milk (*varenets* and *ryazhenka*) with special bacterial cultures added. *Bifidok* and *Acidophilin* contain kefir cultures with yet other beneficial lactic acid bacteria.

The Russians had known of and enjoyed the nutritive and medicinal benefits of fermented mare’s milk, *kumyss*, since earliest times. This was another food introduced many centuries before by the Scythians and in widespread use as noted in the oldest Russian chronicles. In the 17th century the Russian Orthodox Church proscribed the eating of horse flesh and drinking of mare’s milk as unclean, and *kumyss* dropped from the scene until appearing again in more recent times.

KVAS: DRINK OF THE PEOPLE

Kvas is a lightly fermented, slightly alcoholic beverage commonly made from rye bread sweetened with a bit of honey or fruit juices. Its widespread use among Russian peasantry has been recorded since at least 1000 AD. The sweet-sour drink contains a good supply of B vitamins and active enzymes and was used, along with beet *kvas*, as a frequent addition to soups. Large pieces of meat were often oven-braised in *kvas*.

Besides *kvas*, early Russians enjoyed mead (*medok*, *medovukha*) and other forms of fermented honey, some mildly alcoholic and some much stronger. In the tenth century a form of mead was soured with hops and berry juices, and a method similar to wine making and requiring a five- to 35-year aging period produced a potent honey drink resembling Cognac. Earlier still, the Russians fermented birch sap into a sort of “beer.” Beer-making with grains did not develop until the end of the 13th century, and vodka made from rye grain appeared in Moscow somewhere in the mid to late 15th century. There was already a state monopoly on its production by the 16th century.

The Russians had known of and enjoyed the nutritive and medicinal benefits of fermented mare’s milk, *kumyss*, since earliest times.

MONGOL INFLUENCE

The Mongol invasion and conquest of Kievan Rus by Batu Khan occurred in 1237 and lasted until Ivan III terminated their “yoke” in 1480. For nearly 250 years the Russian people were subjected to waves of brutal sieges by the Golden Horde, as well as extortion exacted in the form of ransom tributes paid to forestall annihilation.

In spite of its destructive impact on Russian society, the Mongol presence also enriched the Russian diet in several important ways. With the reopening of the old Silk Road to China the Mongol invaders introduced spices such as saffron and cinnamon. Even more important than spices, however, the Mongols brought from China the art of fermenting cabbage. Although the Russians had long grown cabbage, they did not know how to preserve it in brine as sauerkraut. Once introduced, soured cabbage and other vegetables quickly became central in the Russian and Eastern European diet. In fact, it is nearly impossible to imagine Russian cooking without sauerkraut, pickled cucumbers and the many other brined vegetables and fruits, which greatly enlivened the table year round with much longed-for variety and important nutrients. Fresh vegetables and herbs included radishes, parsley, dill, chervil, green onions and garlic. Wild-growing chickory, nettles, sorrel and purslane were most often cooked in soups.

RUSSIAN ORTHODOXY

In 988 Prince Vladimir of Novgorod converted to Christianity and established the Byzantine rite of Orthodox Christianity as the Russian national faith. Legend has it that Vladimir chose the Orthodox Church because he didn't like the dietary restrictions of either Judaism or Islam, and rejected the western Catholic tradition of an unleavened Eucharist host. Russian Orthodoxy nevertheless exerted a strong influence on the national diet through the imposition of a strict regimen of fast days. Depending on the calendar year, there are about 250 fast days each year, including every Wednesday and Friday, and the Great Fast (or Lent) of 50 days.

Among a people inured to food scarcity and occasional famine it seems heartless to impose further dietary restrictions, but the Russian diet

actually expanded after the adoption of Orthodoxy. The prohibition from eating meat during fast days led to a blossoming in the creativity of fish dishes. Russia's many rivers, streams, ponds and lakes were stocked with an astonishing variety of fish and crayfish, and its inland population had regular recourse to this rich bounty. Mushroom dishes also abounded, aided in great part by the many prolific mushroom species native to Russian forests. Here are two menus from a 19th century fast day of a comfortable, but not aristocratic, household:

Mushroom and sturgeon marrow pirog

Sturgeon head soup

Potatoes with herring

Cranberry kissel

Plum soup with wine

Pike in yellow sauce

Potato cutlets with mushroom sauce

Stewed fruit compote

FEAST DAYS

The Russian ecclesiastical calendar culminates in the spring with the progression of Butter Week, or *Maslenitsa*, through the Great Lenten Fast and finally the joyous feast of Easter (*Paskha*). *Maslenitsa* is an ancient holiday celebrated in mid winter that has been incorporated into Russian Orthodoxy, and in fact is so beloved it has been celebrated without interruption up to the present day. Originally a festival in honor

A FRENCH VIEW OF 17TH CENTURY MUSCOVY

This excerpt is from the account of a French soldier of fortune, Jacques Margeret, who entered the services of Tsar Boris Godunov from 1600 to 1606. He returned home to France and in 1607 published his *Estat de l'Empire de Russi et Gran de Duché de Muscovie*. His account provides a clear picture of the country's possessions and natural resources, as well as the behaviors of its people, court officials and rulers. Margeret comments below on the general constitution of Muscovites and in particular their love of the *banya*, or sauna, as a health aid.

“Tis almost a miracle to see how their bodies, accustomed to and hardened by cold, can endure so intense a heat, and how that, when they are not able to endure it any longer, they come out of the stoves, naked as the back of a man's hand, both men and women, and go into the cold water...and in winter how they wallow in the snow....The Muscovites are of a healthy and strong constitution, long lived and seldom sick; which when they are, their ordinary remedies, even in burning fevers, are only garlic and strong waters...”

“There are among the Russians many people aged 80, 100, to 120 years old. They are not subject to illness as in these parts. Except for the emperor and some principal lords, they do not know about physicians. They even consider to be unclean several things which one uses in medicine. Among other things, they do not take pills voluntarily. As for enemas, they abhor them...If the common people are sick, they usually take a good draught of aqua vitae, place in it...a peeled clove of garlic, stir this and drink it. Then they go immediately into a hot house which is so hot as to be almost unendurable, and remain there until they have sweated an hour or two. They do the same for all sorts of maladies....”

of the coming spring, increasing sunshine and hoped-for fertility, the week-long holiday is one of a merry-making and carnival mood, with sleigh rides, dancing, and the eating of great quantities of blini drenched in butter and sour cream—two favorite foods that would be banned during the upcoming seven-week fast. Blini are themselves an ancient leavened pancake—thicker than crêpes, but not as thick as American breakfast pancakes. They were originally made of buckwheat flour and round in shape to remind one of the sun.

In rural Russia the long fast period also served to ensure that livestock would not be eaten but survive to fatten and reproduce in the spring. When the fast was broken with the great feast of Easter, celebrants of every ilk presented a holiday table as lavish as families could afford.

Several ritual foods are always required for the Easter table. Boiled eggs, usually decorated simply, are symbols of the fertility of spring and are presented in great quantity.

Kulich, a very rich yeasted cake made with wheat flour, butter, eggs, and milk is only prepared for Easter. Its traditional accompaniment is *paskha*, a sweet cheese dish made from *tvorog*, sour cream, egg yolks, ground almonds, vanilla and sugar, shaped in a truncated pyramidal mold. A 19th century Easter table of a prosperous country family might look like this:

Paskha, Kulich, Babas, Mazurkas, Tortes

Decorated eggs

Butter sculpted in the shape of a lamb

Boar's head, Baked ham

Stuffed turkey, Cold roast hare

Roast veal, Wood grouse

Cold roast antelope or venison,

Roast elk, Roast marinated beef

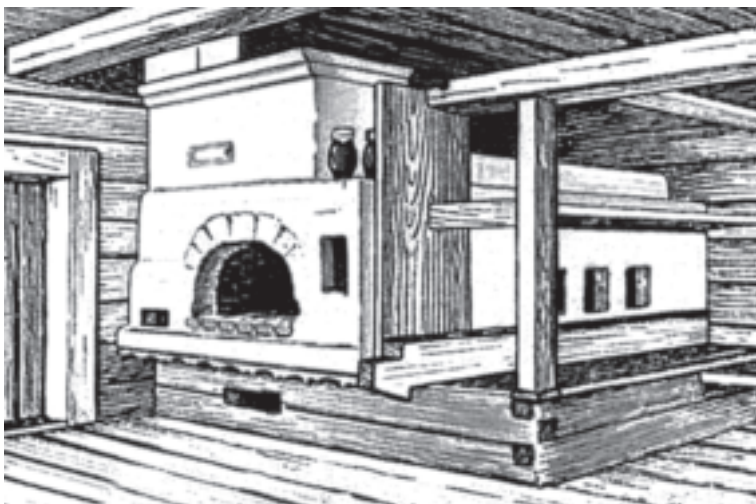
Stuffed suckling pig

Bread, horseradish, mustard, vinegar, olive oil

Various vodkas and wines

THE RUSSIAN OVEN

Perhaps one of the most profound influences on Russian traditional cuisine is the Russian oven (*rususkaya pechka*) around which all family life centered in rural Russia. Of colossal size and weighing a ton or two, the Russian oven was made of clay, stone or brick. The multi-purpose oven was built with an ingenious internal channel system that directed hot smoke through a series of chambers before it exited the hut (*izba*). A fire was built in the main chamber, and controlled via several flue dampers. The structure burned fuel very efficiently, and a single firing was enough in all but the coldest weather to prepare the oven both for cooking all meals and heating the *izba* for the entire day. When the fire had died down, and the oven was very hot, the coals and ashes would be swept out or pushed to the side and food could then be cooked or baked. The hottest temperatures were used to bake bread, and as the oven slowly cooled other foods would be placed



The traditional Russian oven

inside to “stew.” Nooks and shelves built on the sides of the oven were perfect spots for souring foods at a steady warm temperature. The tops of the ovens were flat and provided a cozy spot for the old folks (and cats) to sleep.

The oven had no burners, so all food was cooked inside the oven by the experienced housewife. Most food was cooked in earthenware containers that had rounded sides to maximize heat exposure. A long-handled

tool with a U-shaped end served to move the jars in and out of the oven. Other oven utensils were bread peels and wooden paddles for turning grain that was dried on the oven floor. Long, slow cooking in radiant heat characterizes most of early Russian dishes, such as kasha and even soup, which was “stewed” more than boiled. Meat stews, interestingly, were not typical Russian fare as the traditional method of preparing meat was baking it on trays in large pieces, or even, if possible, cooking the whole animal. Chopped meat dishes, pâtés, ground meat and pureéd soups were introduced to Russian cuisine from western, mostly French, sources. Western-style stoves—enclosed metal ranges with burners that could deliver high heat—were introduced toward the middle of the 19th century in Russia, mostly for city dwellers and the provincial gentry, although the Russian oven was preferred for most traditional cooking and processing of raw ingredients.

ENDURING TRADITIONS

The most novel refinements in Russian cuisine introduced in the 17th through the 19th centuries came largely from the west, and particularly from France. The influence turned out to be a mutual one, producing a grand

Franco-Russian culinary style that featured hallmarks of both traditions, but was largely enjoyed only by the nobility and large landowners. Changes to the diet and daily lives of the peasants came much more slowly, due in good part to their deep suspicion of novelty. Potatoes, for example, were first introduced during the reign of Catherine the Great, yet took another 70 or 80 years before they were accepted and widely cultivated.

In some ways it could be said that Russia's medieval period, as far as the bulk of the population was concerned, continued largely intact until it collided abruptly with the twentieth century. Upheaval in the shape of civil war, revolution and world war touched and forever altered every soul in the country. Collectivization ended the tradition of the peasant class, and also changed the face of agriculture for decades to come. A second world war and the long, hard recovery that followed, with chronic food shortages and deficits, made permanent because of Cold War military spending, ended only in the 1990s with the fall of the Soviet Union. Although consumer goods have since multiplied greatly, with many expensive foreign food imports, it will still take time for private ownership of the land to recreate a domestic food production economy to feed the people, although already there are some beginnings.

In the wake of such history, it is revealing to learn that during the period of perestroika, one of the first books to be reprinted after long neglect was an 1861 classic, Elena Molokhovets' *A Gift to Young Housewives*. This beloved cook book had been continually in print and revised for 20 editions by its author until 1911. Written at a time that some consider the zenith of Russian cuisine, the book was condemned as decadent and bourgeois after the 1917 Revolution. Found only rarely at high prices in used book stores, the book recalled the culinary glory of a vanished age. The renewed

popularity of Molokhovets' masterpiece among modern ordinary people as well as restaurateurs speaks of the enduring pride in the cultural heritage of Russian traditional dishes and cooking methods. ☺☺

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MEMORIAL TO DEIDRE CURRIE

We are extremely saddened to announce the passing of Deidre Currie, who died in childbirth on January 8, 2008. Deidre was a chapter leader in Oakland County, Michigan, along with her husband Archie Welch. She and her husband put on a wonderful WAPF conference last September.

Deidre is survived by her devoted husband Archie Welch and beautiful baby Jack, born six weeks early but doing very well on donated breastmilk, often delivered through a WAPF milk drop!



To honor Deidre and her devotion to the cause of good nutrition, the Weston A. Price Foundation has set up a Deidre Currie scholarship fund, which will provide scholarships for overseas members to attend our *Wise Traditions* conference. Please send donations to the Weston A. Price Foundation earmarked for the scholarship fund.

For more information about Deidre and photos of Jack as he grows, visit her website at www.deidrecurie.com. You will find many moving tributes there including this one from Archie: "I've never met anyone with as many close friends as Dee had established over her lifetime. Her spirit is definitely alive and well, fervently carried within the hearts of so many good people."

Archie is planning to further honor his late wife with a one-day conference in the Detroit metropolitan area September 13, 2008. Speakers will include Natasha Campbell-McBride and Sally Fallon. We will keep you posted on details.

Know Your Fats

THE CANADIAN REPORT ON *TRANS* FATTY ACIDS

By Mary G. Enig, PhD

The Canadian *Trans* Fat Task Force was formed in early 2005 to provide the Canadian Minister of Health with recommendations and strategies to effectively eliminate or reduce processed *trans* fats in Canadian foods to the lowest level possible. The Task Force was co-chaired by Health Canada and the Heart and Stroke Foundation of Canada, which submitted their 120-page report in June of 2006.

INDUSTRY INFLUENCE

The report provides a good look at the strategies the vegetable oil and food processing industries have developed in order to maintain market share and profits in the teeth of mounting evidence that *trans* fats pose serious health problems. The food manufacturing and food service sectors as well as the oil seed producers and processors were heavily represented on the Task Force, including representatives from the Canadian Council of Grocery Distributors, Bunge Canada, the Baking Association of Canada, Centre for Science in the Public Interest, the Vegetable Oil Industry, Canada Bread, and the Canadian Restaurant and Food Services Association. In addition, the Task Force heard testimony from representatives of Pepsico, Cargill, Archer Daniels Midland, Monsanto, Dow AgroSciences Canada, and the Canola Council of Canada.

(The Canadian Meat Council and the Dairy Farmers of Canada also testified. Both groups limited their comments to the defense of the small amounts of *trans* fats in meat and butter but failed to mount a defense of saturated fats.)

In addition, the leaders of the Task Force specifically held consultation with industry “to build a better understanding of industry issues and concerns pertaining to the reduction and effective elimination of industrially produced *trans* fats.”

The Task Force’s report expressed concerns that “reducing the dietary intake of *trans* fats could have a negative impact on Canadian production and processing of canola and soybean oils. This is because some of these oils are partially hydrogenated and thus contain *trans* fats. Removal of these oils from the market could decrease vegetable oil processing in Canada and potentially weaken oilseed production.”

MAJOR STRATEGY

While forced to admit that *trans* fats are bad, the food processing and oilseed industries are determined to prevent a wholesale switch from vegetable oils to saturated animal fats; and they succeeded in imposing this strategy on the committee’s deliberations by limiting discussion of the health effects to the very narrow parameters of cholesterol values.

The Task Force provides a summary of these biases and assumptions on page one of their report: “There is a significant and growing body of evidence linking *trans* fats to coronary heart disease indicating *trans* fats may do even more harm than saturated fats. Metabolic studies, for instance, show that *trans* fats increase blood levels of LDL (“bad”) cholesterol and decrease blood levels of HDL (“good”) cholesterol. Both effects are strongly associated with increased coronary heart disease. Saturated fats are thought to be less damaging because they elevate both the “bad” and “good” types of cholesterol. Epidemiological data also point to a greater risk of coronary heart disease from increases in dietary *trans* fats than from increases in dietary saturated fats.”

Thus, in considering the health effects of *trans* and saturated fats, the committee limited their consideration to the arbitrary surrogate endpoints of LDL, HDL and total cholesterol.

While forced to admit that *trans* fats are bad, the food processing and oilseed industries are determined to prevent a wholesale switch from vegetable oils to saturated animal fats.

With the exception of a brief mention of biomarkers for inflammation, the committee avoided looking at meaningful endpoints, such as death from heart disease; and the Task Force made no mention whatsoever of the relative effects of trans fats versus saturated fats on other biological systems, such as lung function, kidney function and the immune system.

“All of the consulted experts agreed that there is sufficient evidence to consider the total/HDL cholesterol ratio as the primary biomarker for assessing the effects of dietary fats on coronary heart disease.”

With the exception of a brief mention of biomarkers for inflammation, the committee avoided looking at meaningful endpoints, such as death from heart disease; and the Task Force made no mention whatsoever of the relative effects of *trans* fats versus saturated fats on other biological systems, such as lung function, kidney function and the immune system. To do so would have put saturated fats in a positive light, something the committee was determined to avoid.

The committee operated on the premise that “*trans* fats are unavoidable in ordinary diets,” when in fact with the right public policy, the industrial *trans* fats (as opposed to the small amounts of natural *trans* fats that occur in meat fat and butter) could be completely avoided. The final report expressed concern that “these changes may potentially increase the intake of omega-6 polyunsaturated fatty acids to undesirable levels.” Yet saturated fats are not considered as a viable alternative. “The goal should be to replace, as much as possible, *trans* and saturated fats with monounsaturated fats and maintain adequate intakes and a proper balance of omega-6 and omega-3 polyunsaturated fatty acids. . . . throughout its deliberations, the Task Force has been concerned that consumption of saturated fats should not increase significantly as a result of limitations on *trans* fats.” The committee stipulated that foods whose *trans* fat content has been reduced must also be low in saturated fat in order to carry a “*trans* fat free” claim.

The report makes only brief (and dismissive) mention of butter, coconut oil and palm oil as alternatives for partially hydrogenated vegetable oils in baked goods and no mention at all by name of lard or beef and lamb tallow, the safe and logical fats for frying. “All the invited experts, including those providing written feedback, agreed that butter and other animal fats are not a good replacement for partially hydrogenated oils.” Why? Because “[b]utter has been shown to have a greater adverse effect on the total/HDL cholesterol ratio than all the other solid dietary fats (e.g. palm oil, palm kernel oil and coconut

oil) as well as margarines and shortenings with low to moderate levels of *trans* fats.”

A DILEMMA FOR THE INDUSTRY

In spite of successfully manipulating the discussion about *trans* and saturated fats, the focus on the dangers of *trans* fatty acids poses a real dilemma for the industry. Its options are, in fact, quite limited:

For salad dressings and tub spreads, the solution proposed is monounsaturated oils. The Task Force makes no mention of olive oil, the ideal choice. Canola oil is highly monounsaturated, but canola oil is not ideal. As mentioned in the report, it must be deodorized, a process that adds up to 2 percent *trans* fats. And most canola oil is industrially refined, which destroys vitamins, antioxidants and omega-3 fatty acids.

Baked goods present more serious problems. The report bemoans the fact that in some food categories, such as cookies, snack puddings, crackers, granola bars, oriental noodles and liquid coffee whiteners, “Partially hydrogenated oils have sometimes been replaced by oils in which 50-100% of total fat was saturated fat.” These are obviously palm oil (50% saturated) and coconut oil (90% saturated) or fully hydrogenated coconut oil (100% saturated), but the Task Force avoids mentioning the specific names of these fats.

According to the report, “At present, the only viable alternative to partially hydrogenated fats in baked goods appears to be fats and oils containing a significant proportion of saturated fatty acids. However, the use of saturates in baked goods should not lead to an overall increase in saturated fat intake as the use of saturates plus *trans* fats in other categories have been decreasing.”

Solutions for the industry include development of new more stable varieties of canola high in saturated stearic acid and full hydrogenation to produce solid fats high in saturated stearic acid. “For harder fats used in margarines and shortenings, the Task Force favoured products prepared by the interesterification of highly saturated oils or fully hydrogenated oils with different proportions of non-hydrogenated liquid vegetable oils.” In fact, the report encouraged research into “increasing the range and levels of saturated fatty acids in certain oilseed varieties, and identifying

and developing possible new Canadian sources of saturated fats that can be used to produce interesterified fats and oils.”

Use of stearic acid from manipulated canola oil or from full hydrogenation of liquid vegetable oils will be difficult to justify because butter and meat fats—rejected because they “contribute to heart disease”—are rich in stearic acid. It is clear that the industry is planning to claim that industrially produced stearic acid is good but naturally occurring stearic acid in butter and meat fats is dangerous. “There is evidence from both metabolic and epidemiological studies,” writes the Task Force, “that saturated fats (at least those from dairy products and meat) increase the risk of coronary heart disease.”

FINAL RECOMMENDATIONS


The committee’s final recommendations create the impression that a solution has been found: “For all vegetable oils and soft, spreadable (tub-type) margarines sold to consumers or for use as an ingredient in the preparation of foods on site by retailers or food service establishments, the total *trans* fat content be limited by regulation to 2% of total fat content.

“For all other foods purchased by a retail or food service establishment for sale to consumers or for use as an ingredient in the preparation of foods on site, the total *trans* fat content be limited by regulation to 5% of total fat content. This limit does not apply to food products for which the fat originates exclusively from ruminant meat or dairy products.” (For the moment, butter has been spared!)

The Task Force estimates that these recommendations, if adopted, would reduce the average *trans* fat intake of Canadians by at least 55 percent, which, they claim, represents less than 1 percent of energy intake. “A lower limit would not provide a significant additional decrease in average *trans* fat intake, but it would increase the effort and challenge for industry.”

HELP FOR THE INDUSTRY

Naturally the food processing and oilseed industries will need help in making these changes. The report recommended incentives to “[e]nhance the capacity of the Canadian agri-food industry to take a leadership role in this area.” The report takes on the task of reviewing available alternatives to partially hydrogenated fats “without raising costs for manufacturers.”

Finally, the Task Force urges government support to “Help the food industry communicate the healthier nature of its products to consumers” including “designing effective messages, targeted to key groups, about the consumption of different types of fats.” The report makes it obvious that the campaign to “educate” consumers about “healthy” alternatives to *trans* fats will be used to deliver equally strident warnings about the “dangers” of saturated fats. 

SATURATED FATS VERSUS *TRANS* FATS

The Canadian Task Force on *trans* fatty acids did not consider the relative effects of *trans* versus saturated fats on any other parameter except the total-to-HDL-cholesterol ratio. Had they looked at the effects of *trans* fats versus saturated fats on the major biochemical systems, they would not have been able to conclude that saturated fats must be avoided. The effects of saturated fats on the body chemistry are uniformly good; the effects of *trans* fats are very, very bad.

	SATURATED FATS	<i>TRANS</i> FATS
CELL MEMBRANES	Essential for healthy function	Interfere with healthy function
HORMONES	Enhance hormone production	Interfere with hormone production
INFLAMMATION	Suppress	Encourage
HEART DISEASE	Lower Lp(a), raise “good” cholesterol	Raise Lp(a), lower “good” cholesterol
OMEGA-3	Put in tissues and conserve	Reduce levels in tissues
DIABETES	Help insulin receptors	Inhibit insulin receptors
IMMUNE SYSTEM	Enhance	Depress
PROSTAGLANDINS	Encourage production and balance	Depress production, cause imbalances

All Thumbs Book Reviews



***Everything I Want to Do is Illegal:
War Stories from the Local Food Front***
By Joel Salatin
Polyface Publications, 2007

“The instant I enter on my own land, the bright ideas of property, of exclusive right, of independence, exalt my mind. Precious soil, I say to myself, by what singular custom of law is it that thou wast made to constitute the riches of the freeholder? What should we American farmers be without the distinct possession of that soil? It feeds, it clothes us; from it we draw even a great exuberancy, our best meat, our richest drink; the very honey of our bees comes from this privileged spot. No wonder we should thus cherish its possession. . . it has established all our rights; on it is founded our rank, our freedom, our power as citizens, our importance as individuals of such a district. These images, I must confess, I always behold with pleasure and extend them as far as my imagination can reach; for this is what may be called the true and only philosophy of an American farmer.”

J. Hector St. John de Crèvecoeur, a naturalized American citizen of French heritage wrote this rhapsodic hymn of the early American freeholder that became part of his *Letters from an American Farmer*, published in London in 1782. The book immediately became the first American literary success in Europe, and was translated into several languages; its author became a celebrated figure. Old Europe was keenly curious about the new American experiment in which equal opportunity and self-determination were the guiding lights of the new nation’s social structure, along with its utter rejection of the feudal tyranny of monarchist regimes.

“It is not composed, as in Europe, of great lords who possess everything, and of a herd of people who have nothing. Here are no aristocratical families, no courts, no kings, no bishops, no ecclesiastical dominion, no invisible

power giving to a few a very visible one, no great manufactures employing thousands, no great refinements of luxury. . . . We are a people of cultivators scattered over an immense terrain. . . united by the silken bands of a mild government, all respecting the laws without dreading their power because they are equitable. . . . We have no princes for whom we toil, starve and bleed; we are the most perfect society now existing in the world.”

Crèvecoeur spent several peaceful and prosperous years on his farm in New York, living the ideal shared by Thomas Jefferson and others who believed that a truly self-governing, democratic society must be composed largely of small, independent farmers. In fact, Jefferson, in his *Notes on the State of Virginia*, also published in 1782, insisted that agriculture, not manufacturing, should form the economic basis of the new nation (although, prophetically for the nation, he was to change his mind after the War of 1812). Working directly with nature, “looking up to heaven and [down] to their own soil and industry,” instilled in these citizen-farmers the very qualities of independence, equity and justice for which the new republic ideally aimed.

These shining principles, of course, never quite became reality, and Crèvecoeur’s *Letters* describe not only the noble visionary model for a new society free from institutional oppression, but also the very real destruction caused by the immorality of slavery, the bloody skirmishes between colonists and native residents, and the nightmarish turmoil of the Revolutionary War, which was not universally embraced by all the colonists and led to neighbors murdering neighbors. Crèvecoeur (whose name means “heart-break” in French) watched his own American experience end in tragedy. At the time of the Revolutionary War he was unable to take sides, and while called away to France by his dying father, his farm was burned to the ground, his wife murdered and his children scattered.

Jefferson, in his *Notes on the State of Virginia*, also published in 1782, insisted that agriculture, not manufacturing should form the economic basis of the new nation.

All Thumbs Book Reviews

Nonetheless, *Letters from an American Farmer* continued to hold the imagination of European readers and was reprinted numerous times. The book has never attained the same popularity on these shores, however.

Picking up Joel Salatin's newest literary endeavor, this reader felt the emotional resurrection of the founding agrarian ideals of Jefferson and Crèvecoeur in full, modern-day force. *Everything I Want to Do is Illegal* is an impassioned *cri de coeur* of a beleaguered member of that once-ennobled population of American farmers. No longer a freeholder on his own land, restrained and fettered by regulatory agencies that seem to have his total eradication as their goal, the American small farmer is an endangered species. Although there are barely as many small farmers now as inmates in U.S. federal prisons, the fate of farmers is intimately tied to all of us who believe that we still have the right to feed ourselves and our families as we choose.

Salatin has chosen to illuminate the climate and geographical terrain of the "war zone" he inhabits as an entrepreneurial farmer by relating actual encounters with regulators that he and his family have endured while trying to make a living and providing their customers with the best food possible. The blood-boiling encounters are many, and the reader quickly becomes familiar with the Gordian Knot-style obstacles the regulatory agencies throw in Salatin's path.

If anyone could be a match to their monstrously confounding, illogical rules and regulations, it is Salatin, and occasionally he was able to win the day through creative solutions that were grudgingly, though often only temporarily, accepted. However, as Salatin points out time and again, if the true aims of the endless regulations were actually clean meat, public safety, and a healthy food supply, Salatin's Polyface Farms would long ago have been held up as a golden model for study and replication around the country. In fact, these legitimate aims are

merely smokescreens for much more sinister motives. "If it's the government's responsibility to make sure that no person can ingest a morsel of unsafe food, then only government food will be edible. And when that happens, freedom of choice is long gone, because the credentialed food will be what the fat cats who wine and dine politicians say that it is. In the name of offering only credentialed safe food, we will only be able to eat irradiated, genetically adulterated, inhumane, taste-enhanced, nutrient-deficient, emulsified, reconstituted pseudo-food from Archer Daniels Midland, 'supermarket to the world.'"

Salatin is angry and with good reason. He and his family have struggled for years with inane regulations that were written with only industrial-scale food production technologies in mind, and that demanded small-scale operations either match or go out of business. This last option is, of course, exactly what thousands of small farmers have succumbed to over the years and still do. As Salatin says, "the systematic dissection of small, local food systems" is the obvious agenda of bureaucrats who are in bed with big ag.

Everything I Want to Do is Illegal contains chapters on food safety issues that will permanently turn the reader off any food from centralized, industrial sources. Salatin's examination of the current state of oversight within this system proves it to be exquisitely vulnerable to bioterrorism with absolutely no effective government or industry precautions in force. The regulators are too busy overseeing small farmers out of business, while consumers' food options dwindle.

Chapters on other farm-related activities invoke regulation fiascos in such areas as zoning, child labor, housing, insurance, and taxes, and are fertile topics for Salatin to develop his theme. A farm is not just a producer of raw materials, he repeats, but a vital, living organism that enriches and is enriched by the community it belongs to. "I would suggest that it takes a community

I would suggest that it takes a community to preserve a farm.

All Thumbs Book Reviews

to preserve a farm. To divorce a farm from its neighbors, its customers, the body of knowledge regarding ecological land stewardship and earthworm activities, is to destroy the farm. It cannot exist separated from the rich cultural soup that sustains it. . . . A farm includes the passion of the farmer's heart, the interest of the farm's customers, the biological activity in the soil, the pleasantness of the air above the farm—it's everything touching, emanating from, and supplying that piece of landscape."

Polyface Farm has managed to prosper in spite of ongoing run-ins with institutional oppression, and over the years has blossomed into a veritable oasis of healthy food production, innovative land management, and out-reach education as the next generation of Salatin's becomes established. Innovative thinking, study, and devising elegant solutions are clearly pleasurable pursuits for Salatin and his family, and one wonders where they and other farmers like them might be if they had been actually encouraged, supported and championed rather than brutally ambushed at every turn by autocratic government agencies. More important, where might our society be? Our communities would be dotted with numerous small farms, made prosperous by the close proximity of their customers. These customers would keep their communities robust by investing in their local food systems, and keep themselves and their families healthy by choosing food they can see being grown by farmers they know and trust. Further, Salatin points out, "without the expensive labeling, packaging and processing infrastructure requirements, this food could be sold at regular supermarket prices, and it would be infinitely better. Virtually all of the processed foods currently sold at the supermarket could be supplanted with community-based entrepreneurial fare. Does your heart ache for this? Mine does."

As someone who "makes his living by thinking," Salatin is an inspiration not only for other small farmers with entrepreneurial dreams,

but for this country's citizenry as well. Salatin's stories remind us of our freedom and power as citizens to act without the hobbling shackles of fear, and to be suspicious of government laws enacted "for our security" that restrict our freedoms and impoverish our health. "On every side, our paternalistic culture is tightening the noose around those of us who just want to opt out of the system. And it is the freedom to opt out that differentiates tyrannical from free societies. . . . When faith in our freedom gives way to fear of our freedom, silencing the minority view becomes the operative protocol."

Perhaps even worse than the viciousness of the regulators is the complacency of the populace, Salatin believes. The matters he airs in this book are emblematic of an autocratic government allied with the military-industrial complex; Salatin is merely describing the scene from his perspective as an entrepreneurial farmer. He clearly wants to involve all of us in finding another way: ". . . the goal of this book is to give Americans an insatiable appetite for something they don't have. I want folks to leave these pages angry that they've been denied something righteous, something healthful. I want folks incensed that their government has sold our collective freedom birthright for a bowl of global corporate pottage."

A bright development that emerged just after the publication of Salatin's book has been The Farm-to-Consumer Legal Defense Fund (www.ftcdf.org). Formed in response to the need to protect small farmers from excessive government interference as well as preserve consumers' rights to clean food purchased directly from the farm, the Fund has already provided legal counsel in several cases around the country. For anyone concerned about the corporate-owned, industrialized food supply, the spectre of GMOs, consumer rights to food choices, and other food, farming and health freedoms, joining the Fund is a first priority. The existence of the Fund is surely one strong means for the will of the people to unite to recover, as Salatin suggests, their "appetite for something they don't have."

"We should all dream for such a day," Salatin urges. "Let the revolution come quickly." 

Reviewed by Katherine Czapp

NEW EDITION OF *NUTRITION AND PHYSICAL DEGENERATION!*

Good news! The Price-Pottenger Nutrition Foundation has just issued the 8th edition of Dr. Price's classic work *Nutrition and Physical Degeneration*. This new edition includes many never-before published photographs—they are wonderful! Plus, PPNF has added a collection of his letters as an addendum, including a most interesting letter to his nieces and nephews summarizing his dietary suggestions for cash-strapped families. (Note well: he says most vegetables should be cooked!) We're also glad to see the emphasis on the fat-soluble activators in the new introduction. Order from PPNF by calling (619) 462-7600 or visit www.price-pottenger.org.

All Thumbs Book Reviews

The Fertility Diet

By Jorge E. Chavarro, MD, ScD,
and Walter C. Willett, MD, DrPH
McGraw Hill, 2007

When I first read about the “breakthrough” book based on the “startling” new research from the Nurses Health Study, I thought, finally, after 13 years of teaching workshops on the link between fertility and food as one aspect of reclaiming our hormonal health, here is a Harvard team validating my work. Then, when my copy arrived and I began reading, I realized how lucky I was that *The Fertility Diet* had not been published at the time of my own diagnosis 16 years ago. Otherwise I, too, might have been tempted to follow it. And that would’ve been a mistake.

In 1992, I was in desperate search of a miracle cure for my furiously rising hormone levels which—according to a well-documented study—reduced my remaining childbearing years to zero. At the time I was eating close to the recommendations of *The Fertility Diet*: lots of tofu, brown rice, an afternoon cappuccino pick-me-up, followed by a scoop of Ben & Jerry’s ice cream, and an occasional glass of wine. Yet there I was, at 42, entering premature menopause with several endocrinologists proclaiming my “ovulatory infertility” to be beyond repair.

One day, in a last-ditch effort to prop up my

wilting ovaries, I began a physical and emotional overhaul with radical changes in my diet and rigorous self-examination.

Sailing past the siren songs of sugar and caffeine was not easy, but just eight months later I received the sweetest of rewards: a positive pregnancy test that was the early announcement of the arrival of a healthy baby girl. My most important discovery was that I could actually change my life through daily practice and loving discipline.

Though some of the discussion in *The Fertility Diet*, namely the idea of replacing low fat foods with their whole fat counterparts, is undeniably a step in the right direction, for the reader who has not done extensive prior research many of the suggestions can be highly misleading.

Consider this statement: “It has been hard to keep up with the fortunes of soy over the last decade. . .” followed by “don’t turn up your nose at tofu. . . or ignore soy milk. . .” If you’re going to write a book entitled *The Fertility Diet*, you might care to do what it takes to keep up with the fortunes of soy. Women with irregular ovulation might, in fact, do best to turn up their noses at tofu and soy milk. Soy products have been linked with impaired thyroid function—not a desirable condition for an aspiring mom.

Here is another equally troubling invitation: “Drink coffee. . . and alcohol in moderation. . .



Non-fermented soy products have been linked with impaired thyroid function—not a desirable condition for an aspiring mom.

EARTHLY BODIES AND HEAVENLY HAIR: NATURAL AND HEALTHY PERSONAL CARE FOR EVERY BODY

Regular reports of toxic ingredients in personal care products from lip stick to baby lotion make it clear that the body care industry is not to be trusted. Skin is a perfect absorber of much that is slathered on it, and many noxious ingredients can directly enter the bloodstream to cause harm. The healthy solution is to stop purchasing these products and consider making your own. Master herbalist and New York WAPF chapter leader, Dina Falconi, has created this compendium of over 450 body care recipes with the whole family in mind. Encyclopedic in range, Dina’s book covers all aspects of body care: face, hair and scalp, feet and hands, teeth and gums. There is helpful commentary on adjusting her formulas for the special needs of men, women, children, teens and elders, as well as on natural first-aid. The recipes offer a wide range of variations, from the simplest to more complicated procedures involving aromatic and medicinal herbal infusions, tinctures, salves and creams. Throughout, Dina emphasizes the fact that these products are intended to nourish, heal and provide sensual pleasure rather than mask or cover-up “imperfections.” A most comprehensive guide for holistic body care formulas, this book truly has something for every body. Available from amazon.com and other sources.

All Thumbs Book Reviews

In the last 14 years of counseling women with ovulatory issues, I have found that eight out of 10 women have digestive difficulties.

we didn't see any effects on fertility at moderate levels of caffeine intake, which is the equivalent of three to four cups of coffee a day." The interested reader will indeed find a number of sources documenting the adverse effects of caffeine, including higher miscarriage rates (Bolumar et al., 1997, 145(4):324-34), increased blood pressure, excessive urinary excretion of magnesium, potassium and calcium (essential nutrients for maintaining a healthy pregnancy), to name a few. And if none of these findings were convincing, when attempting to create a most welcoming environment for new life, wouldn't it make more sense to abstain from ingesting a substance that leads to physical dependency serious enough to result in withdrawal symptoms?

In the last 14 years of counseling women with ovulatory issues, I have found that eight out of 10 women have digestive difficulties. I wonder about the effect of a four-cheese soufflé, a few cups of coffee, a glass of wine, fruit desserts, and nuts and berries for an evening snack—to name but a few dietary suggestions in the back of the book—on an already compromised digestive system.

Oh, yes, many readers might miss the irony of the lovely image of two peas in a pod on the jacket of the book. At first I thought it was an odd

but interesting conscious choice, until I found them listed in one of the charts without any mention of their damaging effect. Peas, you see, are not quite the libido-lifting edibles you want to mix into your husband's dinner salad, at least not if you're trying to have a baby. They are one of the few vegetables known to have contraceptive properties (*Cent African Journal of Medicine* 1993; 39(3):52-6).

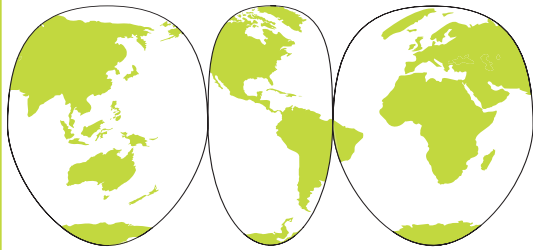
By no means am I implying that scientific research is to be dismissed. But in case you're tempted to wait for the next study (Dr. Charvarro has assured us that "Plans are underway to conduct a . . . study to test the diet in a more scientifically rigorous manner. . .") to determine your dinner menu, here is something I learned observing hundreds of people who conceived robust babies, often in direct contradiction of current food science dogma. When it comes to something as dynamic as a human organism, as complex as food, and as miraculous as creating life, nothing can equal the value of doing your own thinking and the solid science of direct observation. ☺☺

Reviewed by Julia Indichova, who is the author of *Inconceivable* (Doubleday 2001), and *The Fertile Female* (Adell Press, 2007). Her webzine www.fertileheart.com is focused on health-enhancing approaches to fertility, pregnancy and adoption.

TWO NEW COOKBOOKS

LIVING, LOVING AND COOKING WITH MY DAUGHTER by Priscilla Smith: For those who are gluten intolerant but want to cook the WAPF way, this book will provide you with many wonderful ideas—including gluten-free birthday cake. Priscilla developed the recipes for her gluten-intolerant daughter and found that the whole family benefitted by going gluten-free. It also contains great ideas for smoothies, snacks, pizza, casseroles and other foods children love. And the photos of food and family are wonderful. Order from Priscilla at (410) 280-0423, priscilla.smith@gmail.com or visit <http://nourishingyouandyourchildren.blogspot.com/>.

WHOLE SOME HOME COOKING: PREPARING NUTRIENT-DENSE FOODS by Katie Stoltzfus: By contrast, this book is heavy on the wheat products, which fortunately are mostly soaked or fermented. This collection of Pennsylvania Dutch recipes includes some new ideas for lacto-fermented vegetables, casseroles and soups. There are several recipes for scrapple and in the back you will find a nice list of herb blends and recipes for household items such as toothpaste and baby wipes. To order, send \$16 plus \$5 for shipping to Katie L. Stoltzfus, 426 Stormstown Road, Bird-in-Hand, Pennsylvania 17505.



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Debra Lynn Dadd, author of *Really Green*
Kaayla T. Daniel, PhD, author of *The Whole Soy Story*
James DeMeo, PhD, author of *Sahasia*
Mary Enig, PhD, author of *Know Your Fats*
Dina Falconi, author of *Earthly Bodies and Heavenly Hair*
Sally Fallon, MA, author of *Nourishing Traditions*
Lynn Farrow, MA, breast cancer specialist
Joseph Heckman, PhD, soil specialist
Mark Kastel, president, The Cornucopia Institute
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Louisa Williams, ND, author of *Radical Medicine*

SEMINARS AND SESSIONS ON

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Growing Wise Kids

WHO NEEDS SODA POP WITH THESE BODACIOUS BEVERAGES?

By Jen Allbritton, CN

Most health-conscious parents are well aware of the dangers of soda, with its 10 to 12 teaspoons of health-eroding sugar per serving, corrosive phosphoric acid, and copious amounts of nerve-wrecking caffeine. Youngsters make up the largest soda-drinking portion of the population, which is why it is so critical for us as parents to provide tasty, nutritious alternatives. Lacto-fermented beverages are the best of your beverage choices. They taste fantastic and, more important, offer outstanding health benefits that your darling little angels won't even know about!

DRINK TO YOUR HEALTH

Fermented beverages infuse the gut with lactobacilli and lactic acid to sustain their growth, as well as serve up a nice array of enzymes and nourishing minerals. Water kefir, honey-lemonade, apple cider, beet kvass and sun tea are just a few. Traditional populations knew that these effervescent drinks were more hydrating and thirst-quenching than even water. In *Nourishing Traditions*, Sally Fallon writes, "Throughout the world, these lactic-acid-containing drinks have been valued for medicinal qualities including the ability to relieve intestinal problems and constipation, promote lactation, strengthen the sick and promote overall well-being and stamina. Above all, these drinks were considered superior to plain water in their ability to relieve thirst during physical labor. Both soft drinks and alcoholic beverages—and even plain water—are poor substitutes for these health-promoting beverages. Taken with meals they promote thorough and easy digestion of food; taken after physical labor they give a lift by replacing lost mineral ions in a way that renews rather than depletes the body's reserves."¹

Traditionally, people used locally available foods to make their lacto-fermented beverages, such as palm sap, coconut juice, herbs, roots,

tubers and fruit. Fallon explains that we have a natural craving for live culture sodas: "We offer the theory that the craving for both alcohol and soft drinks stems from an ancient collective memory of the kind of lacto-fermented beverages still found in traditional societies." As we see, these live culture sodas are just another piece of the traditional food way of life.

A LITTLE GOES A LONG WAY

When it comes to fermented beverages, a little goes a long way. Not only are they super-hydrating and supportive to the intestinal ecosystem, but lacto-fermented beverages are also quite detoxifying. The process of lacto-fermentation with both foods and beverages creates a host of beneficial micro-organisms. Many of these bacteria are crucial to detoxification.

Because of these powerful properties, the average adult will do well to consume around four to six ounces and a child would need even less at one time. Quite small amounts might be best for those just getting started. A person's optimal quantity can also be influenced by his unique sensitivity and the strength of the beverage. A good place to start a toddler would be with a few tablespoons mixed into a blend (see Tate's "Juice" recipe).

While lacto-fermented beverages are mildly alcoholic, the amount is minimal and typically of no concern, even for children. For example, kombucha may contain anywhere between 0.08 percent to 2 percent alcohol, while beet kvass can contain around one percent. These are small figures compared to beer that has up to 8 percent alcohol. (A healthy body naturally produces about one ounce of alcohol per day.)

Several factors contribute to the level of alcohol produced within a lacto-fermented beverage—the amount of sugar, the length of fermentation and the strength of the cultures. Alcoholic fermentation is the conversion of

Not only are they super-hydrating and supportive to the intestinal ecosystem, but lacto-fermented beverages are also quite detoxifying.

sugar into carbon dioxide gas (CO₂) and ethyl alcohol through the work of yeasts found on the food itself and within the culturing agent (kefir grains, kombucha culture, whey, ginger bug, etc.). The more sugar that the solution contains the more alcohol will be produced. Also, the longer a beverage is allowed to ferment, the less sugar it will contain and the more alcohol will be produced. In fact, if left to ferment too long, it may become more like vinegar, as the presence of certain benign bacteria convert the alcohol to acetic acid. Another factor is oxygen. The more oxygen the yeast cells are exposed to, the more they multiply, but the less alcohol they produce.

Pregnant women may want to use caution, particularly if these beverages were not consumed consistently before conception. If the mom's system is accustomed to the benefits and detoxification effects of these beverages, they can be consumed in moderation without worry during pregnancy. In fact, Fallon explains that the liver-supporting properties of beet kvass and kombucha help prevent morning sickness.

According to Fallon, "alcoholic fermentation can be minimized by the addition of whey and a little sea salt to our beverage preparations. The results are pleasantly acidic drinks, sometimes slightly bubbly, with complex flavors, especially if allowed to age for several weeks or more." The bacteria in the culturing agent use the sugar to produce lactic acid during the

fermentation process. The lactic acid is responsible for the tart taste in lacto-fermented foods and beverages and naturally preserves the end product. In other words, that slight tart flavor of a fermented food is a good thing!

MAKING BODACIOUS FERMENTED "SODAS"

There are five key Weston A. Price Foundation resources for the "how-to's" of fermented beverages: *Nourishing Traditions* and *Eat Fat Lose Fat* by Sally Fallon and Mary Enig, along with three articles found on the foundation's website (www.westonaprice.org). Charles Eisenstein offers up easy directions for making homemade fermented soda in his article titled "Old-Fashioned, Healthy, Lacto-Fermented Soft Drinks: The Real 'Real Thing.'" While many soda or small beer makers get technical, Charles keeps things nice and simple for us average Joes. Charles explains that "The minimum equipment is a glass fermentation vessel and the minimum ingredients are sugar, water and the culture. Mix them together and fermentation happens." Sally Fallon wrote two excellent articles, "Kvass and Kombucha: Gifts from Russia" along with "Fermented Honey," which offers recipes for fermented beverages using whey and honey. Read and reread each of these resources to learn the basics and then use the information along with this article as a guide to come up with your own cultured soda creations!

WATER KEFIR GRAIN SODA

This is my favorite lacto-fermented soda. It is not only easy, but you can transform its flavor in many ways and ferment different liquids. While these carbonated sodas are exceedingly easy to make, they require water kefir grains (also called sugar kefir grains), which are gelatinous communities of yeast and bacteria. Dairy kefir grains can be converted into water kefir grains, but check with your local WAPF chapter to see whether anyone has water kefir grains to spare; they self-replicate rapidly.

The simplest way to make kefir soda is to use approximately one

TATE'S TODDLER/PRESCHOOLER "JUICE"

Once when Tate was under the weather with a little cold and not showing much enthusiasm for hydrating himself, I decided to give him a little encouragement with a juice blend that could mask the taste of a few nutritional superfoods. Thus, Tate's "juice" recipe was born.

1 cup fresh mineral-rich water

2 to 6 tablespoons water kefir, kombucha, or beet kvass

1 calcium lactate tablet from Standard Process

(the most bio-available source of calcium and vital for many body functions, including the immune system)

1 to 2 teaspoons pomegranate juice concentrate

3 drops stevia extract or other sweetener of choice

Put all ingredients in a sippy cup and shake to dissolve the tablet. Tate truly thinks this is "juice" and will remind me to add his "medicine" (meaning his calcium tablet). Two additional ingredients may be Congaplex or Immunplex from Standard Process, especially during an illness or when your little one is around lots of sickies. These two whole food supplements support immune function—just break open the capsules and pour the powder into the juice. Also try substituting different juice concentrates—blueberry, black cherry or even cranberry.

Whey is another culturing agent that is well endowed with yeasts and bacteria to activate the fermentation process.

quart of mineral-rich water, such as spring water (a quart canning jar size with about an inch left at the top), 4 to 6 tablespoons of grains and 3 to 4 tablespoons sugar. Dominic Anfiteatro, owner and operator of the informative culturing-art website Dom's Kefir In-site (<http://users.chariot.net.au/~dna/kefirpage>), says that kefir grains grow better with a non-refined, mineral-rich sweetener, such as Rapadura, muscovado or sucanat compared to a refined white product. (Note that the grains will turn a light brown color due to the minerals within these sweeteners.) Try other sweeteners like barley malt or sorghum syrup or molasses to vary the flavor.

Dom also makes a ginger root concoction by adding two to four tablespoons of freshly grated ginger into an 8 cup batch of basic mixture. In Europe, dried fruits are added (such as raisins or figs) to add flavor and additional sugar.

Cover the mixture tightly and allow it to sit anywhere from 24 to 48 hours (possibly longer if it is in a cold spot). The longer it sits the more fermentation that occurs and the less sugar that is left. Plan to experiment to find where it ferments best in your house (preferably at room

temperature) and the length of time that makes for the best brew for your family. A perfect batch will result in a product with a nice sweet, neutral flavor; an over-brewed batch will taste acidic and leave a tangy taste in your mouth. After the "soda" is done fermenting, it is time to add in your flavors; see "Soda Taste Boosters" for ideas.

Here's a brilliant idea. Dom adds a bio-available calcium carbonate nutritional-kick by including sea coral, limestone or eggshells to the brewing water kefir. The added mineral sources slowly dissolve into the liquid due to reactions created during fermentation. A side benefit is improved growth of your kefir grains.

If you want to take a rest from brewing, put a fermented batch in the fridge without straining for a week or two and then pick up where you left off. Also be sure to rinse the grains between each batch to prevent a build-up of yeast that may reduce their growth.

FERMENTED FRUIT JUICE AND FRUIT PEELINGS

Nourishing Traditions has a wonderful recipe for lacto-fermented apple cider using freshly

SODA TASTE BOOSTERS

Many sodas have a unique taste all their own; however, for some children, adding a little "boost" to make it even more appealing to their tastes buds will increase your chances of regular consumption. Try adding one or more of the items below. Bear in mind, straight fruit juice is not recommended for children (see "Taking the 'Icky' Out of Picky Eaters" article on www.westonaprice.org for an explanation as to why), however, it is my opinion that using a small amount is a good compromise to make these nourishing beverages more drinkable and enjoyable—particularly for those parents trying to compete with commercial soft drink choices. Most of the ideas below are added after your initial brew, but use your imagination and have fun.

- Sparkling/soda water (gives it a bit of fizz) with a fruit juice or juice concentrate (see suggestions below)
- Grape, blueberry, blackberry or other nutrient-dense juice
- Pomegranate, blueberry or black cherry juice concentrate (found in a bottle, rather than a typical "fruit juice concentrate")
- Sweetener: Stevia, maple syrup or a swirl of honey
- Ginger for ginger ale (added during fermentation or after)
- Lemon juice for lemonade or lime juice for limeade
- Vanilla, hazelnut or almond flavor extract
- Orange juice, orange extract or orange essential oil (just a drop or two)
- Fresh mint from the garden
- Peppermint tea, peppermint flavor extract or peppermint essential oil (just a drop or two)
- Brewed herbal tea or raw herbs—fruity flavors are tasty for kids and other herbal choices offer medicinal benefits, such as elderberry for its antiviral activity, passionflower to calm frazzled nerves, or licorice to soothe a sore throat.
- Mixed fermented beverage concoctions (see The Water Butterfly recipe)
- Herbal additions to try during a brew: licorice root, ginger, citrus zest, cinnamon stick, hibiscus or elder flowers

LACTO-FERMENTED BEVERAGES FOR EVERYONE

FERMENTED SUN TEA

I remember helping my mom make sun tea when I was a little girl. There was nothing better than a tall glass of ice cold tea after a day of playing outside in the hot Arizona sun. Here is a healthier fermented option! This recipe was created by Terry, an adventurous kitchen scientist in Ohio.

3 tablespoons of whey (see Nourishing Traditions for directions)
4 tablespoons of granular sugar
1/4 of lemon or lime or orange (squeezed)
12 teabags of your choice (half caffeinated and half herbal is nice)
Filtered/spring water

Mix all your ingredients into a gallon-sized canning jar and secure the lid. Let your mixture sit out in the sun for 8 hours. For your next batch, add 1/2 cup of the fermented sun tea to the gallon jar, add 4 tablespoons of white sugar or another sweetener and the teabags of your choice. Add mint leaves from the garden or any herbal amendments.

APPLE CIDER

1 quart unfiltered apple juice
2 tablespoons of home brewed cider or kefir grains or kefir starter

Place apple juice, starter and a dash of salt in a quart jar. Top with a lid and leave at room temperature for 12 to 24 hours or until it gets bubbly. Cover tightly and refrigerate. Taste your cider at different stages to notice how it changes over time, starting out sweet and rich, then turning more acidic. Reserve two tablespoons of this batch or use the kefir grains to start another batch. Mix things up by adding a cranberry or blueberry concentrate.

DOM'S KEFIR D'UVA (GRAPE JUICE KEFIR) AND THE WATER BUTTERFLY

1 part grape juice to 1 part water
Kefir grains
A few fresh mint leaves or spices such as cloves, optional
Optional post-fermentation additions: milk kefir, coconut kefir

Fill the jar 2/3 full and then add the kefir grains. Secure an airtight lid on the jar and ferment for 24 to 48 hours at room temperature and strain. The refreshing beverage is bubbly like Champagne. In fact, when including a little green [unripe] grape juice, a healthy Champagne alternative can be prepared. Try mixing 1/4 volume of the unripe grape juice with 3/4 ripe grape juice by volume, in the recipe above. An alternative to green unripe grape juice is lemon juice. Add the juice of 1/2 to 1 lemon to every 2 cups of grape juice, and then brew as explained above. When brewing kefir d'uva, one may use bottled grape juice, as long as the juice is 100 percent organic pure juice, without any added preservatives. Make what Dom calls "the water butterfly" by adding 1/3 cup kefir or coconut milk kefir to 2/3 cup *kefir d'uva* with a swirl of honey. Also, try making various flavors by changing the fruit juice base—try black currant, black cherry, blueberry or pineapple.

prepared juice. Raw juices are not only fresher and retain more nutrition than pasteurized options, the native microflora they harbor enhance the microbial level of your finished brew. Nevertheless, while fresh, unpasteurized juice is ideal, not everyone has a juicer, or the time to make it from scratch, at least not every time. There is no doubt that commercial pasteurized fruit juice is simply sugar-water and certainly not a healthy beverage for children, or for adults for that matter. However, when fermented, the pasteurized

juice is revitalized with enzymes and lactobacilli to build one's inner ecosystem and contains much less sugar than the original beverage.

There are several ways to ferment pasteurized or fresh juices. The first is with kefir grains (as discussed above in the Water Kefir Grain Soda section). In fact, in his fascinating work *Wild Fermentation*, Sandor Katz explains that virtually any fruit or vegetable juice, including nut milks, can be fermented with kefir grains although the grains won't reproduce as rapidly as they do in milk. Be prepared for the kefir grains to take on the color of intensely hued juices such as cranberry! Use excess grains for more adventurous creations and always reserve a backup batch of grains in their original state in the off chance of a mishap. This is especially wise

Every family will have its unique preference that seems to work best in their kitchen, which is why trial and error is your best companion in this soda-making process.

since some juices cause grains to retard their growth.

The second way to make fermented fruit juice or water with fruit chunks or peels is with whey. Whey is another culturing agent that is well endowed with yeasts and bacteria to activate the fermentation process. It can be obtained in a number of ways; see *Nourishing Traditions* for directions. Kefir whey is believed to offer a wider array of bacteria and yeasts than other probiotic products; however, whey made from yogurt, buttermilk and piima milk will also work and is more diverse than pasteurized sources.

As seen with many of the recipes mentioned here or in the aforementioned resources, the options are limitless. Try using chopped fruit or fruit peels—such as apple, pineapple or pear—in a water/whey base to create a fun soda (just be sure the fruit is covered with water). As Fallon presents in the recipes in her “Fermented Honey” article, start with using 1/2 cup whey in two quarts water and add whatever you have

on hand to make experimental new beverages. Whether or not you also add salt is up to you—some people like the soft salty taste and others do not.

Bear in mind, different juices will have different results. While all fruit juices can be brewed, sweet juices such as orange, peach or mango may not respond as well as tart juices like cherry or pomegranate. Add a bit of sweetener to the less-sugary juices to encourage fermentation. Also try adding an herb or spice for even more variation, such as a cinnamon stick or hibiscus flowers; see the “Taste Boosters” for more ideas.

BEET KVASS

This snap-to-make, easy-to-assimilate healing tonic is a blend of beets, water, salt and whey (see *Nourishing Traditions* for direction). Fallon states that beet kvass is “valuable for its medicinal qualities and as a digestive aid. . . One 4-ounce glass, morning and night, is an

A FEW USEFUL LAST POINTERS

1. To cover tightly or not? While covering your fermented beverages is important to just prevent bugs, dust and unwanted organisms from finding their way into your precious brew, the tightness of the lid is debatable. While some people prefer a loose or breathable cover (such as cheese cloth secured with a rubber band), others twist it on tight. Some even start the brew with a loose lid and then tighten it mid-ferment. One thing is for sure, during fermentation carbon dioxide gas builds, which are the bubbles that create pressure. In an airtight container, the pressure can build to a point that can cause an explosion within either the container itself or the contents once opened. CO₂ build-up can cause overflow in a non-airtight container. This is why it is vital to first leave some headspace (about 1/4 of the container) to allow room for the gasses. If you want a fizzier beverage, a tight fitting lid is typically the best way to go. Charles Eisenstein discusses the topic of bottling after initially brewing your beverage. One idea to reduce the chance of a beverage geyser is to “burp your bottle,” that is to periodically “bleed” the bottle by opening the lid and allowing some CO₂ gas to escape during the fermentation phase of your beverage. Gauge your ferment’s “burping” needs by using a metal canning lid, which will swell when it is time to burp. Always use caution when opening fermented beverage bottles!
2. How long to ferment? Fermentation times vary, so keep checking and taste-test frequently. The surrounding temperature will speed up or slow down the process. The amount of sweetener used (whether added or from food) may alter the time. The longer your beverage ferments, the more sugar that is digested, and the less sweet your end produce will be. The type of culturing agent also makes a difference. Kefir grain soda may take only 24 hours to create the best product for your family, but the ginger bug (as explained in Charles Eisenstein’s article) may take up to 10 days. And the honey beverages described in Fallon’s “Fermented Honey” are kept in the fridge for up to three weeks after the initial room-temperature ferment. The bottom line is to keep experimenting with your beverages. The only thing you can be sure of is you will know if undesirable bacteria have taken hold—it will smell unmistakably awful. Always trust your nose! There will be no question if your brew is bad and must be thrown on the compost pile.
3. Use the previous brew beverage as a culturing agent. A small amount of a current batch of fermented beverage can be used to start the next. While this does work, there will likely come a time when it will lose its culturing zing and you will need to start afresh. Use your taste buds as a guide. You want a clean, slightly-tart, not too-sweet taste to your brew. An “off,” yeasty flavor means your culturing agent is not up to snuff and you should start over. These concerns are typically eliminated when using a self-replicating culturing agent, such as kefir grains or a kombucha “mushroom.”

excellent blood tonic, promotes regularity, aids digestion, alkalizes the blood, cleanses the liver and is a good treatment for kidney stones and other ailments. Beet kvass may also be used in place of vinegar in salad dressings and as an addition to soups.” While this beverage is highly therapeutic, it may not be accepted with open arms by your little ones. It can be a bit too “beety” for children and occasionally a bit too salty. First, be sure to brew it long enough, and consider allowing it to “age” in the fridge for a while after it has completed fermentation at room temperature to further round out its flavor. Also be sure to use fresh beets. The amount of salt could also be slightly reduced. Finally, try the “Soda Taste Boosters” to make it a touch more soda-like. Try, for example, a little sparkling water and a few tablespoons of a fruit juice or juice concentrate.

KOMBUCHA

While this lacto-fermented beverage takes a bit more work than the others discussed, many people are drawn to its taste. This tea is produced using a “mushroom fungus” which is actually a symbiotic colony of bacteria and yeasts. The “mushroom” is placed in a freshly prepared infusion of tea and sugar. It then ferments and oxidizes. Essentially, the fungus will feed on sugar and in return produce a range of healthy organic acids, many vitamins, amino acids and antibiotic substances. Mix things up to a base batch of kombucha by adding herbal teas to the brew, such as raspberry or another family favorite. Of course, the “Taste Boosters” found on page 66 can be added after brewing is complete to really make things sparkle. And if it turns flat, add a touch of fruit or Rapadura after you decant, cap it tightly and it will get fizzy again, even in the fridge.

Every family will have its unique preference or just a method or two that seems to work best in their kitchen, which is why trial and error is your best companion in this soda making process. With spring in the air, it is the perfect time to take advantage of the hydrating and gut-nourishing benefits of bodacious lacto-fermented beverages. It may seem a little intimidating at first, but consider it a new “science experiment” with the kids and see what happens—most likely you will be pleasantly surprised with the tasty results! ☺☺

Jen Allbritton is a Certified Nutritionist and has been researching and writing on all topics of nutrition for over 10 years. She lives in Colorado with her husband and two sons, and spends lots of time in the kitchen cooking up WAPF-friendly creations. If you have topic suggestions you would like to learn more about, contact her at jen@nourishingconnections.org.

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NEED MORE HELP?

There is much more to know and more experiments to do than presented in this article. This information is meant to inspire and inform the reader about all the fun fermented beverage options available and provide a bit of simple direction. For more, refer to the resources mentioned and contact your local WAPF chapter (see www.westonaprice.org for listings). Also, check out the many WAPF-focused chat groups on yahoo.com. One chat group in particular is “Microbial Nutrition” (http://health.groups.yahoo.com/group/Microbial_Nutrition), which holds detailed discussions regarding all things microbial; it is fascinating!

GMO Report

HOW TO AVOID GENETICALLY MODIFIED FOODS

by Jeffrey Smith

There are plenty of reasons to avoid eating genetically modified (GM) foods. In fact, after reading just 10 pages or listening to an hour-long lecture about their health dangers, most people are ready to change their diet on the spot.

If genetically modified organisms (GMOs) are not yet on your radar screen, go to www.GeneticRoulette.com for a full presentation. Here is a teaser of what you'll find:

- The only human feeding study on GMOs ever conducted showed that genes “jumped” from GM soy into the DNA of human intestinal bacteria and continued to function. That means that long after you stop eating GM soy, you may still have GM proteins produced continuously inside of you. (What if the pesticide-producing “Bt” gene found in GM corn chips were also to jump? It might transform our intestinal flora into living pesticide factories—possibly for the long term.)
- Most offspring of mother rats fed GM soy died within three weeks (compared to a 10 percent death rate in the non-GM soy group). Similarly, when a lab switched to rat feed with GM soy, most of the offspring at the facility died within two weeks.
- Studies with mice also show reproductive problems. Mice fed GM soy had altered sperm cells and the DNA of their embryos acted differently.
- Hundreds of farm workers complain of allergic reactions when touching GM cotton.
- After sheep grazed on GM cotton plants after harvest, about one in four died; about 10,000 deaths in one region in India.
- Farmers on three continents say their livestock became sterile, sick or died, after eating GM corn varieties.

Could such unsafe food get past our Food and Drug Administration? It probably wouldn't have, if the decision were in the hands of the scientists. Memos made public from a lawsuit reveal that the consensus among FDA scientists in the early 1990s was that GMOs were inherently unsafe and could lead to toxins, allergens, new diseases and nutritional problems. They urged their superiors to require long-term safety studies before any GM foods were allowed on the market. But the political appointee in charge of FDA policy was the former attorney of the biotech giant Monsanto and later the company's vice president. The scientists' warnings were ignored and today the FDA does not require a single safety study on GM foods.

The FDA is also the agency that decides whether or not GM foods need to be labeled. But the White House told the FDA to promote the biotech industry, so they nixed labels. Thus, our government ignores the desire of nine out of ten Americans who want the labels, to support the financial interests of five biotech seed companies. We're on our own.

HOW TO MAKE SAFER NON-GM CHOICES

There are four major GM crops: soy, corn, cotton, and canola. The majority of acreage for each of these crops is genetically engineered. Herbicide-tolerant varieties of each have their DNA inserted with bacterial genes that allow the crops to survive otherwise deadly doses of herbicides. This gives farmers more flexibility in controlling weeds and gives the GM seed company lots more profit. When farmers buy GM seeds, they sign a contract to buy only that seed producer's brand of herbicide. Herbicide tolerant crops comprise about 80 percent of all GM plants.

The only human feeding study on GMOs ever conducted showed that genes “jumped” from GM soy into the DNA of human intestinal bacteria and continued to function.

The other popular trait is found in corn and cotton varieties that are engineered to produce a pesticide in every cell. Their DNA contains a gene from a soil bacterium called *Bacillus thuringiensis* or Bt, which produces a natural insect-killing poison called Bt-toxin.

In addition to these two major types of GM crops, there are also disease-resistant GM zucchini, crook neck squash and Hawaiian papaya, but these comprise well under 1 percent of GMO acreage. But if sugar beet growers have their way, they will add GM sugar to our diets starting in late 2008.

Here are four tips for avoiding GM products.



TIP ONE

Buy organic. Organic standards do not allow the use of GM inputs.

There are three types of organic labels:

1. “100% organic” means all ingredients are organic
2. “Organic” means that at least 95% of the ingredients are organic. The other 5%, however, still have to be non-GMO
3. “Made with organic (ingredient name, such as soy)” This label means that at least 70 percent of the ingredients are organic, but the remaining 30 percent still have to be non-GMO.

If the term organic is only in the list of ingredients and not found anywhere else on the package, then there is no required overall percentage for organic ingredients in the product, and any non-organic ingredient may be GMO.

TIP TWO

Look for “Non-GMO” Labels. Companies may voluntarily label products as Non-GMO.

Some labels state “Non-GMO” while others spell out “Made without genetically modified

ingredients.” Some products limit their claim to only one particular “at-risk” ingredient such as soy lecithin, listing it as “Non-GMO.”

TIP THREE

Avoid at-risk ingredients. The seven GM crops—soy, corn, cottonseed, canola, Hawaiian papaya, and a small amount of zucchini and yellow crook neck squash—look just like their non-GMO

counterparts. You can’t see a difference by looking at them. (Novel products such as seedless watermelons, pear/apple combos and tange-

los are products of natural breeding and are not genetically engineered.)

Most GM ingredients eaten by US consumers are in the form of products made from corn and soybeans, used in processed foods. Perhaps 90 percent of all non-organic processed foods contain at least some small contribution from soy or corn, or perhaps some cooking oil from cottonseed or canola. Go to www.responsibletechnology.org for a long list of derivatives. Shopping with that in your hand will help you navigate around the genetically modified organisms (GMOs). See the sidebar on page 72 for a small list.

TIP FOUR

Use Non-GMO Shopping Guides. The True Food Guide offers non-GMO brand choices at www.truefoodnow.org. The guide has also been reproduced as an insert in the back of the book, *Your Right to Know* by Andrew Kimbrell. The book is available at www.seedsofdeception.com.

Our Campaign for Healthier Eating in America will put out a more up-to-date series of free guides, beginning in the summer of 2008. Check www.responsibletechnology.org.

The seven GM crops—soy, corn, cottonseed, canola, Hawaiian papaya, and a small amount of zucchini and yellow crook neck squash—look just like their non-GMO counterparts.

OTHER GMOs TO LOOK OUT FOR

- GMO sweetener aspartame. Aspartame is created in part by GM microorganisms. It is also referred to as NutraSweet and Equal and is found in over 6000 products, including soft drinks, gum, candy, desserts and mixes, yogurt, tabletop sweeteners, and some pharmaceuticals such as vitamins and sugar-free cough drops.
- Animal products: Meat, dairy products, farmed fish and eggs are usually from animals fed GM feed. To avoid them, buy “organic,” wild caught, or from “100 percent grass-fed” animals. Avoid dairy products from cows injected with GM bovine growth hormone (called rbGH, or rbST). See www.responsibletechnology.org for brand listings.
- Honey and bee pollen may have been gathered from GM plants. In fact, a small percentage of the alfalfa in the US is GM, but plantings were stopped by a court order in 2007.

- There are many additives, enzymes, flavorings, and processing agents that are used in food and which are produced by GM bacteria, yeast or fungi. To avoid them, either buy organic or stick to non-processed foods.

AVOIDING GMOS IN RESTAURANTS

Go to restaurants that cook meals from scratch and don't use packaged processed mixes and sauces that likely have GM ingredients. For those that cook from scratch, most at-risk ingredients *are* visible like corn chips and tortillas, tofu, soy sauce, and sweet corn.

The big exception is vegetable oil, which is probably from soy, corn, cottonseed or canola. If the restaurant uses one of these, *ask* whether they can cook your meal in some other oil like olive oil, or in butter, or without oil at all. And let them know why, so they can learn about GMOs too.

Jeffrey M. Smith is the international bestselling author of Seeds of Deception and the new Genetic Roulette: The Documented Health Risks of Genetically Engineered Foods. He is the executive director of the Institute for Responsible Technology, which is spearheading the Campaign for Healthier Eating in America (www.responsibletechnology.org). He will be the featured speaker at the Weston A. Price conference in San Francisco in November, 2008.

GMO-DEFENSIVE SHOPPING LIST

SOY (89%)*

Chocolates use soy lecithin
Breads use soy flour
Shakes use soy protein concentrate
Formulas use soy milk
Vegetable oils use soy oil

CORN (61%)*

Avoid high fructose corn syrup
in sodas, cereals, cookies, candy, salad dressings, spaghetti sauces, and 1000 other products!
Sauces and baked goods use cornstarch, dextrose and maltodextrin
Vegetable oils use corn oil
Breads use corn flour

CANOLA (79%)*

Fried and baked products use canola oil

COTTON AND COTTON SEED OIL (83%)*

Crisco
Chips and fried snacks use cottonseed oil

* Percentage of crop grown as GM, in the US or, for canola, in Canada.

Fortunately, there is no GM popcorn on the market, nor is there blue or yellow GM corn at this time.
WARNING! GM sugar from sugar beets may be planted in 2008, and in foods before year's end.

Soy Alert!

STRIKING AT THE SOY HEART HEALTH CLAIM

By Kaayla T. Daniel, PhD, CCN

February 19 was a big day for the Weston A. Price Foundation. President Sally Fallon and Secretary Geoffrey Morell delivered a 65-page petition to the offices of the FDA in Rockville, Maryland, in which the Foundation strongly urged the agency to retract the soy-prevents-heart disease health claim. This is the claim that people read when they visit grocery stores and pick up packages of soy milk, veggie burgers and other soy products that contain more than 6 grams per serving of soy protein. This FDA health claim greatly bolstered soy's reputation as a "miracle food" and boosted sales from under one billion dollars per year in 1999 to more than four billion dollars just a few years later.

In addition to myself and Sally Fallon, our petition was signed by three world-class scientists: Kilmer S. McCully, MD, father of the homocysteine theory of heart disease, winner of the 1998 Linus Pauling Award and author of *The Homocysteine Revolution* and *The Heart Revolution*; Mary G. Enig, PhD, the world renowned biochemist and nutritionist who exposed the dangers of *trans* fats in the food supply back in the 1970s, vice president of WAPF, author of *Know Your Fats* and co-author of *Eat Fat Lose Fat* and *Nourishing Traditions*; and Galen D. Knight, PhD, a biochemist who has carried out pioneering research on the role of vitalethine in humoral immunity and cancer development.



Sally Fallon, President of the Weston A. Price Foundation, submits the Foundation's petition and comments to the FDA on February 19, 2008.

STANDARD OF SCIENTIFIC AGREEMENT

Our petition pointed out that according to section 403 (4) (3) (B) (i) of the Federal Food, Drug and Cosmetic Act, FDA can authorize a health claim only if the standard of significant scientific agreement is met. In fact, our review of the scientific literature on soy and heart disease indicated that soy protein does not reliably lower cholesterol, does not lower homocysteine, does

not prevent heart disease and may cause, contribute to or accelerate the development of heart disease, particularly heart arrhythmias and cardiomyopathy, an increasingly prevalent condition that afflicts one in 500 Americans and is the leading cause of death in young athletes.

We pointed out that in approving

the health claim in 1999, the FDA relied heavily on studies on soy and cholesterol that were deeply flawed because of the routine use of casein as the control. Casein is a fractionated milk protein product that is high in the amino acid methionine and seriously deficient in cysteine. Research at the Faculty of Agriculture, Shizuoka University, Japan, has shown that compared to other proteins, casein will significantly raise total cholesterol levels and lower HDL levels. Therefore, casein is an extremely poor control in terms of evaluating soy protein's effect on cholesterol.



In approving the health claim in 1999, the FDA relied heavily on studies on soy and cholesterol that were deeply flawed because of the routine use of casein as the control.

Because soybeans are totally devoid of B₁₂ and can increase the body's requirements for B₁₂, they can raise homocysteine levels.

THE STEEP PRICE OF CHOLESTEROL LOWERING

The most commonly accepted explanation for soy protein's cholesterol lowering potential—if and when cholesterol lowering actually occurs—is stimulation of LDL receptor activity. As Dr. Knight established, this mechanism would serve as compensation for a soy-dependent increase in bile acid excretion. Because this loss of bile would be accompanied by losses of fat-soluble thyroid and steroid hormones and of fat-soluble vitamins, cholesterol-lowering by soy protein would be achieved at a steep price.

Dr. Knight furthermore suggested that this cholesterol-lowering mechanism would compromise normal levels of the monooxygenase receptor for vitaethine, an endogenous regulator of key metabolic pathways in the body. Vitaethine is critical to the body's ability to ward off and fight cancers through humoral immunity. Vitaethine is made from the amino acid cysteine and pantothenic acid. Although soybeans actually contain good levels of cysteine, there is limited bioavailability because it is bound up in soy's protease inhibitors.

HOMOCYSTEINE

Dr. McCully's homocysteine theory of arteriosclerosis is based on evidence that elevation of blood homocysteine concentrations is a major contributing factor in cardiovascular disease. Homocysteine may become elevated as

the result of dietary, genetic, metabolic, hormonal or toxic factors, including dietary or absorptive deficiencies of vitamins B₆, B₁₂ and folic acid. Because soybeans are totally devoid of B₁₂ and can increase the body's requirements for B₁₂, they can raise homocysteine levels.

LONGSTANDING CONCERNS

The third section of our petition documented longstanding concerns in the scientific community—including warnings from the FDA's own Laboratory for Toxicological Research, the National Center for Environmental Health Sciences, the Israeli Health Ministry, the French Food Agency and the German Institute for Risk Assessment—about soy's possible role in carcinogenesis, thyroid disease, reproductive health problems (including infertility) and other health problems.

HEARING REQUESTED

In conclusion we asked the FDA to hold a public hearing on the issues we raised in our petition.

In 2005, the Weston A. Price Foundation protested a soy-prevents-cancer health claim filed by the Solae Company with the FDA. Solae subsequently withdrew their petition in the face of massive evidence that soy can cause, contribute to and accelerate the growth of cancer, particularly breast cancer.

To read our petition, visit [www.http://westonaprice.org/soy/FDASoyHeartLetterFinal.pdf](http://westonaprice.org/soy/FDASoyHeartLetterFinal.pdf).

LOSS OF A MIGHTY WARRIOR



The Weston A. Price Foundation sadly announces the death of Valerie James, mighty warrior against soy infant formula and modern soy foods. Valerie and her husband Richard discovered that soy-based bird feed was causing premature development, thyroid disorders, reproductive problems and early death in their pedigree tropical birds. Through careful research and the help of toxicologist Mike Fitzpatrick, PhD, they were able to identify the toxic components—especially isoflavones—in soybeans and launched the movement to warn the public about this insidious modern food.

Valerie wrote several articles published in *Wise Traditions* and now posted on our website including "Toxins in Your Toast" and "Advertising and Monkey Business." The Jameses also provided financial support for our Soy Alert! campaign and have requested donations in Valerie's name to the Soy Alert! campaign of the Weston A. Price Foundation.

Her persistence and concern for the next generation were an inspiration to us all and she will be greatly missed.

MSG Update

NEW PROPAGANDA ABOUT MSG

By Jack L. Samuels

It has been our observation that whenever the safety of monosodium glutamate and the many other food ingredients that include the reactive component of monosodium glutamate (collectively referred to as “MSG”) is under pressure, the glutamate industry aggressively distributes press releases attesting to MSG’s safety. The press releases are typically slanted to give only one side of the MSG story—the industry side that praises MSG’s alleged benefits. On the other hand, press releases exposing the dangers of MSG from such groups as the Truth in Labeling Campaign never see the light of day. In swallowing the industry press releases, the media ignore the fact that for some people the ingestion of MSG is like taking poison.

Why then is the glutamate industry currently publishing articles contending that MSG is safe? We don’t know for certain, but we suspect that their product is under scrutiny now that pharmaceutical companies are actively introducing effective drugs for various diseases that, as I previously reported to you, are nothing more than glutamate blockers. How can glutamate blockers be fully effective drugs when the FDA is continually approving and supporting MSG-containing ingredients in the food arena of the FDA?

TOUGH QUESTIONS

I asked some tough questions regarding MSG in a recent letter to the commissioner of the FDA, such as how can pharmaceutical companies spend more than 100 million dollars and take 10 years or more to gain approval of a pharmaceutical that contains minute amounts of its active chemical ingredient, when Senomyx, Inc. is able to market a laboratory-produced chemical that is used in minute amounts without FDA approval, merely because it will be used in food?

My letter to the commissioner of the FDA is public information. We know that the glutamate

industry reviews letters submitted to the FDA. Is the glutamate industry concerned about the answers to my questions? Certainly the FDA is concerned since I have not yet received an answer to my letter.

APOLOGISTS FOR MSG

At the end of 2007, the glutamate industry appeared to be on one of their campaigns to convince the public that MSG is safe. Articles we know of included a small piece in *Gourmet* magazine and a January, 2008, article from a dietitian at Mayo Clinic.

The most deceptive and misleading, however, was the December 8-9, 2007 Weekend Journal section of *The Wall Street Journal*, which contained a large article entitled “A New Taste Sensation” regarding MSG. The article, by staff writer Katy McLaughlin, covered two columns of page W1 and the entire page W8. It also appeared on the Internet. If one were to read the *Wall Street Journal* article without knowledge of the toxicity of MSG, one would think that MSG is the best thing that has come to the food industry since the marketing of sliced bread. Admittedly, one would not object to such an article if the reporting was balanced, and the dangers of MSG were also presented. However, that was not the case. It is obvious that Ms. McLaughlin based her article on material from a glutamate organization or from a contact from one or more of these organizations.

McLaughlin’s article was oriented toward a discussion of the claimed fifth taste, umami. For years we knew of four basic tastes: sweet, salty, sour, and bitter. However, the glutamate industry has been actively promoting the existence of a fifth taste, umami.

Dr. Kikunae Ikeda first used the word “umami,” which means savory or deliciousness in Japanese, to describe his discovery of monosodi-

The media ignore the fact that for some people the ingestion of MSG is like taking poison.

um glutamate in 1908. Through the years, monosodium glutamate has been promoted as a flavor enhancer that imparts essentially no taste of its own to a product. However, in recent years, Ajinomoto Co., Inc. (Ajinomoto), the world's largest producer of the food ingredient "monosodium glutamate," must have determined that if the taste of monosodium glutamate and the many processed food ingredients that included the reactive component of monosodium glutamate ("MSG") was declared a fifth taste, it would help to legitimize their products.

SELLING UMAMI

For years, Ajinomoto has spent large sums of money to have umami legitimized as a fifth flavor. Finally, their efforts paid off in the year 2000, when two scientists at the University of Miami identified taste buds on the tongue that responded to the presence of glutamate in foods and, finally, the press gave wide coverage to their discovery.¹ (The study was funded, in part, by Ajinomoto.) With the publicity that followed the University of Miami study, many—but not all—flavor scientists began to refer to umami as a fifth taste. People such as myself, who have a life-threatening sensitivity to MSG, question umami's status as a fifth taste since we are not able to taste MSG. If we could, we would have little difficulty avoiding it.

In this writer's interaction with countless MSG-sensitive people over more than 18 years, I have only communicated with three people who contended that they could tell when MSG was in a food preparation. However, their method of identification was a feeling of an electrical charge, a tingling on their tongue, rather than an actual taste.

In presenting the case that umami is "a new taste sensation," McLaughlin interviewed well respected chefs who supported the value of "umami." She included such names as Gary Danko of the restaurant by his name in San Francisco, and Jean-Georges Vongerichten of Jean-Georges

in New York. It appears obvious to this writer that McLaughlin was directed to these chefs by the glutamate industry. Most chefs in gourmet restaurants that I have visited avoid MSG, in any form, like the plague, and attempt to use only fresh ingredients.

The Wall Street Journal article discloses that Ajinomoto reports current annual sales of monosodium glutamate in the U.S. at 95,000 metric tons (209,437,000 pounds). As shocking as that figure may be, it is important to realize that the figure does not include the "hidden" sources of MSG, that is, the sources of MSG other than the ingredient specifically called monosodium glutamate, such as hydrolyzed proteins and yeast extract. I am sure that the addition of these products more than doubles the total use of MSG in our country.

Although McLaughlin's article is filled with misleading information that would lead the reader to believe that monosodium glutamate and other sources of MSG are wonderful and safe, she also included two totally incorrect claims of the glutamate industry in her article. She stated, based on an interview with a representative of one of the glutamate industry's newer organizations, Ajinomoto Food Ingredients, located in Chicago, that "... the glutamate in food is the same as the glutamate in MSG. . ."

NATURAL VERSUS MANUFACTURED UMAMI

Ajinomoto Co., Inc., the company that is promoting the idea that "umami" is the fifth taste, has known for years that it is L-glutamic acid that causes a perception of enhanced flavor. Consequently, in developing patents for the production of their product, monosodium glutamate, they have dismissed approaches that contain an excess of contaminants because contaminants would not contribute to flavor enhancement. The monosodium glutamate that they currently produce is advertised as having less than 1 percent contaminants.

In the 18 years during which the Truth in Labeling Campaign has extensively studied the subject of monosodium glutamate and the many hidden forms of the reactive component of monosodium glutamate, we have concluded that there is likely more than one biochemical mechanism that causes adverse reactions in MSG-sensitive people. However, we believe that the most common reason for adverse reactions may be an intolerance for one or more of the contaminants that invariably are produced when glutamic acid is freed from protein through adulteration, processing and/or fermentation.

If a food ingredient is untreated, unprocessed and unfermented, even if it contains free glutamic acid, it will only contain L-glutamic acid because higher organisms contain only L-glutamic acid. There will be no contaminants. Consequently, MSG-sensitive people can typically eat tomatoes off of the vine even though they contain free glutamic acid (umami), providing that they are not overripe, and cheeses such as Reggiano Parmesan that are made from raw milk rather than pasteurized milk or milk that has been cultured, and that are made from rennet rather than enzymes. Give the same person a domestic cheese made from pasteurized milk, cultured milk, and/or enzymes and an adverse reaction will often follow. (Possibly, any processed free glutamic acid (MSG) from fermentation of Reggiano Parmesan cheese is below the tolerance level of most MSG-sensitive people.)

Not so, assuming that the Ajinomoto representative is referring to unadulterated, unprocessed, unfermented food when referring to food. Glutamic acid found in unadulterated, unprocessed, unfermented food that contains protein is only L-glutamic acid, while the glutamic acid found in our processed food supply always contains contaminants (including D-glutamic acid), some of which likely may contribute to the majority, if not all, of the adverse reactions that MSG-sensitive people experience. (See www.truthinlabeling.org/manufac.html for further detail.)

BAD SCIENCE

McLaughlin also stated that “. . . many studies have found that MSG doesn’t cause ill effects.” However, the fact is that peer-reviewed published epidemiological studies have concluded that more than 25 percent of the population experiences adverse reactions to MSG.

It is only badly flawed glutamate-industry-sponsored studies that pretend to have found no more adverse reactions due to MSG than due to placebos (studies in which they used aspartame—which is about 40 percent aspartic acid—or an MSG-containing ingredient in the placebos).² Neuroscientists have found, in animal studies, that aspartic acid and glutamic acid load on the same receptors in the brain, cause identical brain lesions and neuroendocrine disorders, and act in an additive fashion.³ Based on reports to the Truth in Labeling Campaign and a review of reports to the

SINISTER MIX

Senomyx is a young biotechnology company based in San Diego that creates chemicals for the food and beverage industry to trick the taste buds into sensing a flavor, such as sweet or salty, when it is not really there. Quite different from developing artificial flavors that aim to mimic real flavors—a technology usually cursed with miserable failures—Senomyx’s research focuses solely on discovering chemicals that turn receptors that monitor taste on and off in the mouth. Using information from the human genome sequence, Senomyx has identified hundreds of taste receptors and currently owns 113 patents on their discoveries. Senomyx collaborates with seven of the world’s largest food companies to further their research and to fund development of their technology. Ajinomoto Co., Inc., Kraft Foods, Cadbury Schweppes, Campbell Soup Company, The Coca-Cola Company, Firmenich SA, Nestlé SA, and Solae all collaborate with Senomyx, but decline to specify where its additives may be found in their many food categories.

Senomyx’s products work by amplifying the intensity of other flavors, such as the salt in Campbell’s soups. The soup maker can reduce the amount of sodium in each can by about one third with the addition of Senomyx’s chemical, and then proudly label the soup “low sodium.” Because very small amounts of the additive are used (reportedly less than 1 part per million) Senomyx’s chemical compounds will not appear on labels, but will fall under the broad category of “artificial flavors.” For the same reason, the company’s chemicals have sped past the FDA’s safety approval process usually required for food additives. Senomyx’s MSG-enhancer earned the Generally Recognized as Safe (GRAS) status from the Flavor and Extract Manufacturers Association, an industry-funded organization, in less than 18 months, which included three months of tests on rats. With public health officials calling for consumers to limit salt and sugar in foods, food manufacturers are scrambling to find ways to reformulate their concoctions with less of the two ingredients they depend upon most for mass taste appeal. Collaboration with Senomyx seems to be the magic bullet: a sodium- and sugar-reduced product with no taste change, and a politically correct “cleaned up” label.

With questions of future safety of the additives now left largely up to chance, Senomyx’s concoctions are quietly finding their way into the global packaged food stream. In fact, according to Senomyx’s website, it “received a positive review by the Joint FAO/WHO Expert Committee on Food Additives, which determined that there were no safety concerns with the use of the Company’s savory flavor ingredients in foods. The positive assessment by JECFA is expected to expedite regulatory approvals in a number of countries, particularly those that do not have independent regulatory approval systems.”

Two of Senomyx’s newest innovations include a Cool Flavor Program, which enhances cooling, menthol sensations, and a Bitter Blocker Program. According to Senomyx’s website, the company is collaborating with Solae, the international soy ingredients supplier, “to develop new bitter blockers that better modulate and control bitterness in certain soy-based products.” Senomyx has identified the receptors in the mouth responsible for sensing bitter taste (nature’s way of warning us against ingesting poison) and developed a chemical additive to knock out these receptors when eaten with hydrolyzed soy protein and other soy derivatives.

Senomyx’s revenues for the last quarter of 2007 were up 87 percent from the same period in 2006, stock prices are rising and the corporate outlook for 2008 is glowing. CEO Kent Snyder reports that corporate goals include “continuing to achieve significant progress in all of our discovery and development programs such as regulatory approval for our S2383 sucralose enhancer and selection of a sucrose enhancer for regulatory development. We also expect expanded commercialization of food products containing our savory flavor ingredients and additional new business development accomplishments.”

Sources: <http://www.corpwatch.org/article.php?id=12053>; <http://www.senomyx.com/news/>

FDA regarding MSG and aspartame, we know that MSG-sensitive people react similarly to aspartame, and aspartame-sensitive people react similarly to MSG, providing that they ingest amounts that exceed their individual tolerances for these two food additives.

In McLaughlin's article, it should also be noted that she explained how monosodium glutamate was produced, but conveniently failed to mention the fact that the process includes the use of bioengineered bacteria, and that at least up to 2001, the process used enzymes derived from pigs.⁴ The fact that Arabs, Jews and vegetarians do not consume pork did not appear to bother Ajinomoto until this fact was disclosed in Indonesia.

Make no mistake, fifth taste or not, MSG causes brain lesions and subsequent endocrine disorders,³ and adverse reactions that can vary from a simple skin rash or flushing to debilitating and life-threatening conditions such as migraine headaches,^{5,6} obesity,⁷ diabetes,⁸ asthma,⁹ heart irregularities,^{10,11} seizures,^{12,13} and mood disorders.¹⁴

MORE SALES PROMOTIONS

It apparently was not enough for *The Wall Street Journal* to help promote MSG. Evidently, Ajinomoto asked the publication to also help promote one of their new products. The product I refer to is made by Senomyx and is a chemical developed to mimic the same flavor enhancement as MSG, apparently using the same neurological pathways in the body as does MSG.

In about the middle of 2007, Ajinomoto expanded an agreement they had with Senomyx, Inc. to market the Senomyx MSG replacement product in the United States and Canada. Formerly, Ajinomoto was authorized to market the Senomyx MSG-enhancer in Japan and Asia.

As previously reported, Senomyx's product has excited many major companies in the processed food industry because it is so powerful that the amount needed in food is small enough to not require approval by any governmental agency. Furthermore, when used in processed food, it will be described on the label as "artificial flavor" or "artificial flavoring," label descriptors that are considered, through an act of Congress, to be proprietary and therefore not subject to disclosure. Consequently, the presence of Senomyx will never be disclosed on a product label—unless an individual company decides to do so—thereby achieving the "clean label" food processors have long desired for MSG-containing foods.

BALANCED REPORTING?

My wife, Adrienne Samuels, PhD, wrote to Katy McLaughlin, of *The Wall Street Journal*, as well as to the editor of the newspaper, and the editor of the Weekend Section to express her concerns regarding the article. The only response she received was from Katy McLaughlin.

In Ms. McLaughlin's reply to Adrienne, she indicated that her article was appropriate because she fully identified where her information came from. For example, she stated, "Some of the biggest promoters of the idea that there are umami-rich alternatives to MSG in many foods we eat are MSG makers themselves." She went on to say that "all research that was funded in part by Ajinomoto or other ingredient companies was identified. I feel the story was very clear in explaining where information came from."

Although Adrienne asked that *The Wall Street Journal* write a follow-up article in which they would disclose the dangers of MSG, she received no response to this request. So much for balanced reporting.

CSPI

The only semblance of balance in *The Wall Street Journal* article was the statement that McLaughlin contacted Michael Jacobson, executive director of the Center for Science in the Public Interest (CSPI) to ask his opinion on the MSG issue. CSPI has gained the reputation of being a strong advocate for consumer health and is highly respected by most members of Congress—respect obviously fueled, at least in part, by regular "lobbying" visits by CSPI's legal affairs director, Bruce Silverglade.

Jacobson stated, "I don't see normal amounts of MSG as posing a risk to the vast majority of people." Jacobson must clearly know that MSG is a problem for a large percentage of the population, but he obviously must be careful of what he says of MSG toxicity since he has taken a strong position promoting the use of lowfat and fat-free foods, foods that, in most cases, would not be palatable without the addition of some MSG. Furthermore, Jacobson has a reputation among activists on individual food issues to downplay issues on which CSPI is not the leader.

Many years ago, the Truth in Labeling Campaign approached CSPI, led by its executive director, Michael Jacobson, to ask for their help and support in making people aware of the toxicity of MSG and to require full disclosure of MSG on food labels. We approached this non-profit agency because the agency is well known in Congress, and well known by many health-conscious people.

At that time, the people at CSPI claimed to be well aware of the dangers of MSG, and gave us the impression that they would be supportive of our work. However, as time passed, Michael Jacobson and his staff began to work to defeat our cause. In one case, a respected independent journalist was going to cover testimony at a Federation of American Societies for Experimental Biology (FASEB) meeting organized to hear testimony on the subject of the safety of MSG in

food. He told us he was going to prepare an extensive article on MSG for publication in one or more respected magazines and/or newspapers. However, on the day before the meeting, the journalist called CSPI's Michael Jacobson for his thoughts about MSG, and Jacobson told the journalist that MSG was a non-issue and that he would be wasting his time by attending the meeting. He apparently stated it strongly since the reporter called me that evening to cancel his coverage of the MSG issue. (After all that, we found that the first speaker at the FASEB meeting, who spoke of the hazards of MSG, was a CSPI staff member.)

On another occasion when we believed that the FDA was moving toward action on the MSG issue, a staff member of CSPI wrote to advise the FDA that more research on the subject needed to be done before any action should be taken on the issue. Their letter totally ignored the fact that there are large numbers of peer-reviewed studies that have concluded that MSG is dangerous while, at the same time, studies supporting the safety of MSG are industry-funded and flawed to the point of being worthless.

It is of interest to note that all during this time, CSPI was championing the use of lowfat and fat-free foods, foods that, with relatively few exceptions, need some form of MSG to make them palatable. Also, CSPI newsletters regularly promote foods that contain "hidden" forms of MSG with no mention of its presence.

Perhaps Jacobson will better understand the scope and severity of the MSG issue if every MSG-sensitive person who subscribes to his newsletter immediately cancels his or her subscription. ☹☹

Jack Samuels and his wife Adrienne are America's leading anti-MSG activists and founders of the Truth in Labeling campaign (truthinlabeling.org). Jack will be a speaker on MSG's effects on neurological function at Wise Traditions 2008.

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TAKING AFTER MOM: THE BUDDING ARTISTS OF THE FOREMAN FAMILY



The healthy, happy family of Amy Foreman of Hannibal, Missouri, our cover artist for 2008. Their runner-up entries are shown below, by Louisa (age 12), Isaac (age 10) and Elaina (age 7). The family enjoys fresh farm raw milk, kefir, and yoghurt, pasture-raised eggs, kombucha and homegrown vegetables and wheat.



NAIS Update

FEDERAL AND STATE BATTLES OVER THE NATIONAL ANIMAL IDENTIFICATION SYSTEM
By Judith McGeary

Informed farmers and consumers have been fighting the National Animal Identification System, or NAIS, for several years now. For newcomers, this is an agribusiness-government plan to require every person who owns any livestock animal to register their property with the state and federal governments. The NAIS would cover anyone who owns even one chicken, horse, cow, sheep, goat, pig, turkey, guinea, elk, deer, bison, or other livestock or poultry. The next phases of NAIS call for tagging each animal with a 15-digit identification number and reporting their movements to a database within 24 hours. The burdens, in both time and money, would drive many grass-based farmers out of business, and consumers would lose much of their access to nutrient-dense animal foods.

The USDA released its original plan for NAIS in May 2005, sparking a grassroots outcry that has spread across the country. USDA's more recent documents call for the program to be implemented by the states, subject to the federal guidelines and driven by federal funding. So the fight to stop NAIS requires action at both the federal and state levels.

FEDERAL FUNDING FOR NAIS

The good news is that we made significant progress in stopping federal funding for NAIS. For the last three years, Congress has provided \$33 million of funding for NAIS each year. The USDA requested that same amount of funding this year. But the omnibus spending bill passed by Congress in December 2007 contained only \$9.75 million in funding for NAIS. This is less than a third of the funding USDA wanted!

Behind the celebration, however, there is cause for concern. Some members of Congress supported the reduced funding because they

feel USDA has not been aggressive enough in implementing NAIS. Many of the members of the Agriculture Appropriations Subcommittee (which decides funding issues) have been led to believe that NAIS is a food safety measure, and so they are prepared to increase funding if USDA shows greater success in using the funds.

During meetings with the key staff to these members of Congress, I have explained why NAIS is not a food safety measure. In reality, NAIS will actually reduce food safety by favoring confinement operations, reducing organic and grass-based operations, and leading to more consolidation of the food supply. Unfortunately, during a February, 2008 hearing, several members of the subcommittee indicated that they still think NAIS should be made mandatory. It is critical that they hear from the public! See the sidebar to this article on page XX for contact information and how you can make a difference.

THE FARM BILL

The Farm Bill is a massive bill passed every five years, which provides for everything from Food Stamps to crop subsidies to conservation programs to energy policy. The 2007 Farm Bill involved NAIS, as well. As discussed in previous issues of *Wise Traditions*, the House Agriculture Committee proposed implementing mandatory animal identification as part of Country of Origin Labeling, but the outcry from FARFA and other farming and consumer organizations kept that provision out.

Unfortunately, the Senate proved to be a more difficult forum for us. The Senate version of the Farm Bill included Section 10305, which would require the USDA to adopt regulations consistent with the Freedom of Information Act

In reality, NAIS will reduce food safety by favoring confinement operations, reducing organic and grass-based operations, and leading to more consolidation of the food supply.

MAKE YOUR VOICE HEARD!

One of the key fights over NAIS will be over this year's funding for the program. It is critical that the members of the Agriculture Appropriations Subcommittees hear from people who are opposed to NAIS!

WHOM SHOULD I CALL? The chair and ranking member of each committee take input from people all over the country. So everyone should call Rep. DeLauro, Rep. Kingston, Senator Kohl, and Senator Bennett. In addition, if one of the committee members is from your state, then call him or her. Even if you are not in their district, as committee members they should be interested in what their state's citizens have to say.

WHAT DO I SAY? Ask to speak to the staffer who handles the issue of agricultural appropriations. Have a discussion with the staffer about why you are against NAIS, including the way the federal funding is encouraging mandatory, coercive, and misleading implementation methods at the state level. Give them concrete examples of how NAIS will impact your life and your community. Ask them about the Congressperson's position, and try to address any concerns they have about opposing NAIS.

WHAT'S NEXT? Follow-up with a thank you, and additional information to address any concerns the staffer raised. If you need help, contact Judith@FarmAndRanchFreedom.org.

HOUSE AGRICULTURE APPROPRIATIONS SUBCOMMITTEE:

Chair: Rosa DeLauro (D-CT):	(p) 225-3661	(f) 225-4890
Ranking Member: Jack Kingston (R-GA):	(p) 225-583	(f) 226-2269
Sam Farr (D-CA):	(p) 225-2861	(f) 225-6791
F. Allen Boyd (D-FL):	(p) 225-5235	(f) 225-5615
Sanford Bishop (D-GA):	(p) 225-3631	(f) 225-2203
Tom Latham (R-IA):	(p) 225-5476	(f) 225-3301
Jesse Jackson (D-IL):	(p) 225-0773	(f) 225-0899
Ray LaHood (R-IL):	(p) 225-6201	(f) 225-9249
Rodney Alexander (R-LA):	(p) 225-8490	(f) 225-5639
Jo Ann Emerson (R-MO):	(p) 225-4404	(f) 226-0326
Steven Rothman (D-NJ):	(p) 225-5061	(f) 225-5851
Maurice Hinchey (D-NY):	(p) 225-6335	(f) 226-0774
Marcy Kaptur (D-OH):	(p) 225-4146	(f) 225-7711

SENATE AGRICULTURE APPROPRIATIONS SUBCOMMITTEE:

Chair: Herbert Kohl (D-WI):	(p) 224-5653	(f) 224-9787
Ranking Member: Robert Bennett (R-UT):	(p) 224-5444	(f) 228-1168
Dianne Feinstein (D-CA):	(p) 224-3841	(f) 228-3954
Tom Harkin (D-IA):	(p) 224-3254	(f) 224-9369
Larry Craig (R-ID):	(p) 224-2752	(f) 228-1067
Richard Durbin (D-IL):	(p) 224-2152	(f) 228-0400
Sam Brownback (R-KS):	(p) 224-6521	(f) 228-1265
Mitch McConnell (R-KY):	(p) 224-2541	(f) 224-2499
Christopher Bond (R-MO):	(p) 224-5721	(f) 224-8149
Thad Cochran (R-MS):	(p) 224-5054	(f) 224-9450
Byron Dorgan (D-ND):	(p) 224-2551	(f) 224-1193
Ben Nelson (D-NE):	(p) 224-6551	(f) 228-0012
Arlen Specter (R-PA):	(p) 224-4554	(f) 228-1229
Jack Reed (D-RI):	(p) 224-4642	(f) 224-4680
Tim Johnson (D-SD):	(p) 224-5842	(f) 228-5765

We must continue to educate Congress about the fundamental flaws with NAIS and the USDA's attitude towards agriculture.

(FOIA) “regarding the disclosure of information submitted by farmers and ranchers who participate in” NAIS. The regulations “should address the protection of trade secrets and other proprietary and/or confidential business information that farmers and ranchers disclose in the course of participation in” NAIS.

People who oppose NAIS have varying views on the issue of the Freedom of Information Act. Many animal owners have expressed concern that, if NAIS were to happen, they do not want animal rights groups or competitors to be able to obtain detailed information on their farms through FOIA. Other people have pointed out that the public should have the right to get information about the activities of large, industrial agriculture facilities. There is merit in both arguments, but they both miss a critical point: this information should not be collected by the government in the first place. Addressing the confidentiality of information collected under NAIS is like fixing a broken light fixture in a home that has a cracked foundation and termites in the wall. The real problem with both versions of Section 10305 is that they imply approval of what USDA has been doing and give a green light to continuing NAIS. That is a step in the wrong direction.

As this issue of *Wise Traditions* goes to print, the conference committee for the Farm Bill is expected to be named any day. Most likely, by the time you read this article, the decision on whether to keep Section 10305 in the Farm Bill or not will already have been made. Watch for alerts from the Weston A Price Foundation or go to www.FarmAndRanchFreedom.org to stay informed on what is happening in between issues of *Wise Traditions*.

USDA BUSINESS PLAN

On December 19, 2007, the USDA finally published the Business Plan that it has been promising since August. While USDA continues to assert that NAIS is “voluntary at the federal level,” the loopholes are becoming more and more obvious. USDA now states: “NAIS provides the opportunity for producers that are not part of a disease program to freely participate in national animal health safeguarding efforts” (Business Plan, preface i). The logical corol-

lary of this statement is that NAIS is rapidly becoming *unvoluntary* for anyone who is part of a disease program. As detailed in multiple places in the Business Plan, USDA intends to use existing disease control programs—including tuberculosis, brucellosis, scrapie and equine infectious anemia testing—to impose NAIS on animal owners across the country.

USDA also plans to use breed registries and industry associations to implement NAIS. Contact your breed registry to determine whether or not it intends to be a tool for implementing NAIS and let us know their response! We are compiling the responses on our website.

In an attempt to reduce opposition, the Business Plan refers to a “critical mass” of 70 percent. While at first glance this may seem to be a sign that USDA is backing away from its unfounded claims that every single animal owner should be part of NAIS, a closer reading shows otherwise. The 70 percent critical mass is simply a way to gauge “the progress being made towards obtaining the participation levels necessary to achieve the optimum traceability goal” (Business Plan, p. 11). Based on the USDA’s other documents and statement, the optimum traceability goal remains 100 percent participation.

The USDA continues to ignore the low-cost, practical alternatives for tracing animals, and acts as though a huge federal program is the only solution. For example, USDA considers it a problem that “less than half of adult cattle can be associated with any USDA official identification system” (Business Plan, p. 18). Where is the data or analysis showing the real-world outcome? Why does identification of animals have to be through an official USDA program in order to address disease? Where are the studies showing that we need an official federal program to successfully address disease? Experience teaches us otherwise, yet USDA is unwilling to listen or learn. We must continue to educate Congress about the fundamental flaws with NAIS and the USDA’s attitude towards agriculture.

STATE DEVELOPMENTS

In 2007, fourteen states proposed bills to stop or limit NAIS. Only one bill succeeded: Arizona reversed the law it had put into place in 2006 and barred a mandatory program. While

COLORADO: Colorado was the first state to require 4-H and FFA children to enroll in NAIS in order to compete in the state fair. Last year, two children were kicked out of the fair for failing to register. This year, HB 1129 was introduced to prohibit the State Fair Board from making NAIS a requirement for children competing in the fair. The bill has passed the House and been sent to the Senate State, Veterans and Military Affairs Committee, where it awaits a hearing.

ILLINOIS: Like Colorado, Illinois is requiring children to register in NAIS in order to compete in the fairs. Several bills are in the works.

KENTUCKY: The Kentucky Department of Agriculture was among the most aggressive state agencies to try to implement NAIS even absent statutory authorization. In December, 2006, the agency proposed making the entire 3-step NAIS program mandatory, with Certificates of Veterinary Inspection taking the place of 24-hour reporting. The grassroots opposition led to the adoption of much less burdensome regulations, and now HB 495 has been introduced to explicitly limit NAIS to a voluntary program only. The bill includes protections against coercive methods being used to force people into an allegedly voluntary program.

MASSACHUSETTS: Last year's anti-NAIS bills, HB 757 and SB 475, remain pending before the Joint Committee on Natural Resources, Agriculture and the Environment. HB 757 forbids the MDAR from accepting federal funds for NAIS in 2007, requires MDAR to stop uploading data to the federal database, and seeks removal for people who were involuntarily enrolled. SB 475 includes all of those provisions and also precludes MDAR from using other existing programs as a means to implement NAIS, and prohibits any person, whether private or governmental, from discriminating against people who do not participate in NAIS or programs like it.

MISSOURI: The Senate Agriculture Committee has approved SB 931, which bars the state agency from mandating or forcing anyone into the program, and provides an unrestricted right to withdraw. It also makes even a voluntary program subject to appropriations, which means that it could be ended simply by not appropriating money for it! The bill is expected to be voted on by the entire Senate shortly.

NEBRASKA: Nebraska had a law that authorized its Department of Agriculture to implement NAIS, including a mandatory program. LB 632, which was adopted by the Legislature and signed by the Governor in February, changes that. Now, Nebraska's law limits NAIS to a voluntary program only and requires the Department to establish a system for removing people from the premises registration database.

SOUTH DAKOTA: South Dakota law also authorizes a mandatory program. HB 1035 would have barred the state from participating in any NAIS, but it was voted down on the floor of the House.

TENNESSEE: Two sets of parallel House and Senate bills have been filed to limit NAIS. HB 3668/ SB 3903 and HB 3660/ SB3438 would exempt any farmer who does not receive state or federal farm subsidies or funds from NAIS and other regulations. Another bill, HB 3662/SB 3437, would expand the exemption from the sales tax to farmers who produce \$50 of agricultural products per year (instead of the current requirement of \$1,000 of products). The bills have not yet been scheduled for hearings.

VIRGINIA: A bill to prohibit NAIS was filed (HB 1473), but it died in committee. Another bill, HB 1525, was introduced in response to proposed regulations to require premises registration and tagging under the scrapie program (which could then be rolled into NAIS in the future). HB 1525 would limit the agency's authority to "infected and source flocks and high-risk animals." HB 1525 has been carried over to the 2009 legislative session.

WASHINGTON: Last year's committee substitute of HB 1151, to establish an advisory board to study NAIS, was re-introduced. Unfortunately, it was promptly placed in the "X file," and never even made it to Committee.

WYOMING: A bill to completely bar NAIS in Wyoming, HB 119, was introduced. Because this year is a "short session," bills need a 2/3 vote to even be sent to committee. HB 119 failed to get the required votes and died. Its sponsor, Representative Wallis, has committed to re-introducing the bill next year during the general session. Representative Wallis has also introduced HB 011 to allow certain homemade products to be sold without a commercial kitchen license. HB 011, the Wyoming Homemade Products bill, is expected to be heard by committee in mid-February.

Stopping NAIS is a long-term battle, and winning it will require the efforts of both consumers and farmers all over the country.

thirteen failed bills may sound discouraging, the grassroots movement actually made incredible strides in 2007. And now, in 2008, more states are introducing anti-NAIS bills! There are some success stories, most notably Nebraska's adoption of a law limiting NAIS to a voluntary program only. And even where bills have failed, they are gaining more support than they did in 2007, showing the growing strength of the grassroots movement.

The exact kind of bill that's introduced varies from state to state. That's because each state is starting from a different position. In some states, pro-NAIS forces pushed through legislation to create a mandatory NAIS before most people were even aware of the issue. In those states, people face the prospect of their state agency implementing a mandatory program whenever it feels like it!

In other states, the pro-NAIS forces weren't as organized, there is no law authorizing NAIS, and therefore the grassroots community has a little more breathing room. Each state also differs in the strength of its organic and local foods movement, as well as the strength of the pro-NAIS forces (the feedlots and meat packers, the technology companies and the industrial agriculture associations). Depending on the existing laws and the strength of the pro-NAIS forces, the citizens of each state have to make a decision about the best strategy for their state at a specific point in time. We support everyone's efforts to stop NAIS and protect our food supply.

To borrow a comment from a Texas activist: "I understand the argument about the camel's nose under the tent. But with NAIS, the camel has already moved into the tent and is re-arranging the furniture. Whatever we can do to push him back out is good." The big industry and government players have spent 20 years developing and implementing NAIS, and it is going to take a long, hard fight to push them back. Each bill, each battle, sets the stage for the next one.

See page 83 for the status of the state NAIS legislation as of February 15, 2008. You can find out more information on each state by going to <http://farmandranchfreedom.org/content/state-updates>.

CONCLUSION

Stopping NAIS is a long-term battle, and winning it will require the efforts of both consumers and farmers all over the country. The Weston A. Price Foundation sends out action alerts at many of the critical moments, and it's important that everyone take action in response! If you are willing and able to devote a little more time to help in the fight, there are numerous things you can do to: (1) put out educational materials at your local farmers' market, feed store, or riding stable; (2) collect petition signatures; (3) have a face-to-face meeting with your state legislators, and ask them to sponsor a bill to stop NAIS; (4) organize a public meeting to educate your community. You don't need to do all of these things. What's important is to do something! You can find materials to help with all of these efforts at www.farmandranchfreedom.org. ☺☺

Judith McGeary is an attorney and small farmer in Austin, Texas, the Executive Director of the Farm and Ranch Freedom Alliance, and a local chapter leader of WAPF. She has a BS in Biology from Stanford University and a JD from The University of Texas at Austin. She and her husband run a small grass-based farm with Quarter Horses, cattle, sheep, and heritage breeds of poultry.

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A Campaign for *Real Milk*

PASTEURIZATION *DOES* HARM RAW MILK!

By Robert Irons, PhD

Proponents of raw milk know that government websites and reports on raw milk are filled with bias and even outright errors. I recently wrote to the Centers for Disease Control to point out a serious error on their website. My comments apply to milk in general, regardless of species, because pasteurization degrades the nutritional value of all species' milk in the same manner. Just as a calf cannot thrive on pasteurized cow's milk, so a human baby fails to thrive on pasteurized mother's milk.

NUTRITIONAL VALUE OF RAW MILK

In paragraph two of a section entitled "Pasteurization Is Key to Making Dairy Products Safe" is the statement "Pasteurization does *not* harm the nutritional value of milk and cheese" (http://www.cdc.gov/healthypets/cheesespotlight/cheese_spotlight.htm).

This statement is erroneous, misleading, and factually incorrect. Many nutrients and immune-enhancing components are destroyed by exposure to high heat and the temperatures used during pasteurization. Vitamin A is degraded, proteins and enzymes are denatured, and immunoglobulins are destroyed.

VITAMIN A

Regarding vitamin A, an important fat-soluble nutrient, a paper on this subject published in January, 2000 contains the following statement in the abstract. "Vitamin A is very sensitive to chemical degradation caused by oxygen, light, heat, and other stress factors. If light and oxygen are excluded, the dominant degradation reaction for vitamin A derivatives is heat-induced formation of kitols, that is, dimers or higher oligomers" (Runge FE and Heger R. Use of microcalorimetry in monitoring stability studies. *J Agric Food Chem.* 2000 Jan;48(1):47-55).

SALMONELLA

A related error on the CDC site concerns salmonella. The agency's official advice is: "Cook

poultry, ground beef, and eggs thoroughly before eating. Do not eat or drink foods containing raw eggs, or raw unpasteurized milk" (http://www.cdc.gov/ncidod/dbmd/diseaseinfo/salmonellosis_g.htm).

However, later on this page we read: "Mother's milk is the safest food for young infants. Breastfeeding prevents salmonellosis and many other health problems."

In one instance the CDC warns not to drink unpasteurized milk, and seven points later—within the same section—states that an unpasteurized milk (i.e., mother's milk) is the safest food for young infants and that breastfeeding prevents salmonellosis and many other health problems. This is highly misleading to the average citizen.

GROWTH IN PREMATURE BABIES

There is no question that pasteurization compromises the nutritional value of breast milk. For example, research carried out in 1986 came to the following conclusion (emphasis mine): "As part of a randomised controlled study to assess the effect of pasteurization of breast milk on the growth of very-low-birth-weight infants, the longitudinal changes in serum calcium, phosphorus, alkaline phosphatase, 25-hydroxyvitamin D, and bone-gla-protein concentrations were investigated. *Infants fed untreated own mother's milk grew more rapidly than those fed pasteurized pooled preterm milk* and had higher serum alkaline phosphatase and lower phosphorus values. Serum calcium and 25-hydroxyvitamin D (25-OHD) concentrations were similar in the two groups. Despite the provision of 750 IU vitamin D daily from the 2nd week of life, serum 25-OHD values remained low in a number of infants in both groups, suggesting that either malabsorption of vitamin D or hepatic immaturity might be responsible for the persistently low values. Bone gla protein rose significantly after birth and was correlated with alkaline phosphatase values, but not with 25-OHD or phosphorus values. The

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study supports previous work that indicates that the low phosphorus content of breast milk is probably responsible for biochemical evidence of inadequate bone mineralization and that despite vitamin D supplementation, 25-OHD values do not rise adequately. Thirty-six infants were re-examined between 4 and 11 months after birth. The 25-OHD values had risen significantly in all infants except one who had vitamin D deficiency rickets” (Pettifor JM et al. Mineral homeostasis in very low birth weight infants fed either own mother’s milk or pooled pasteurized preterm milk. *J Pediatr Gastroenterol Nutr.* 1986 Mar-Apr;5(2):248-53).

Another study carried out in the same year came to the same conclusion (emphasis mine): “It has been shown that milk derived from mothers with term infants is not optimal for premature babies. *There is also concern about the effect of heat sterilizing breast milk.* At Baragwanath Hospital, the majority of mothers remain with and care for their premature babies. Over many years, pooled pasteurized breast milk has been fed to these babies before direct breast feeding is instituted. *A study was done to compare feeding pooled pasteurized breast milk and untreated own mother’s milk to very low birth weight babies. There was a significantly more rapid weight gain both in terms of regaining birth weight and, from this point, to reaching a weight of 1,800 g when*

using untreated own mother’s milk. This occurred in spite of the fact that there was little difference, especially in terms of energy content, between the two types of breast milk. This was due to the fact that the pooled pasteurized milk was also largely obtained from mothers of premature babies. It is suggested from our data that *slower weight gain in the group receiving the pooled pasteurized milk could be due to the pasteurization, which probably destroys heat-labile milk lipase*” (Stein H et al. Pooled pasteurized breast milk and untreated own mother’s milk in the feeding of very low birth weight babies: a randomized controlled trial. *J Pediatr Gastroenterol Nutr.* 1986 Mar-Apr;5(2):242-7). Note that the researchers attribute the lower weight gain from pasteurized milk to the destruction of lipase.

DESTRUCTION OF ENZYMES

From a study published in 1977 we learn: “Human milk was subjected to heat treatments of graded severity and examined for its content of immunoglobulins, lactoferrin, lysozyme, vitamin B₁₂-and folate-binder proteins, and lactoperoxidase. Holder pasteurization (62.5 degrees C 30 minutes) reduced the IgA titer by 20 percent, and destroyed the small content of IgM and most of the lactoferrin. Lysozyme was stable to this treatment, but with an increase in temperature there was progressive destruction, to near 100 percent at 100 degrees C. The same was broadly true of the capacity of milk to bind folic acid and protect it against bacterial uptake; with vitamin B₁₂ the binder was more labile at 75 degrees C than at 100degrees C. The milk contained no detectable lactoperoxidase” (Ford JE et al. Influence of the heat treatment of human milk on some of its protective constituents. *J Pediatr.* 1977 Jan;90(1):29-35).

OBLIGATION TO REMOVE

These studies apply to the milk of all species, not just human milk.

POPULAR IN EUROPE: RAW MILK BY VENDING MACHINE!

While US health officials continue their knee-jerk opposition to raw milk, European sales of fresh raw milk by vending machine are growing by leaps and bounds. Several versions are pictured below. The sign on the truck says *Latte fresco crudo di giornata* (Fresh raw milk daily). The raw milk dispenser is in the lower right hand corner of the truck body, next to the cab. Note the model pictured in the lower right—it’s painted with a cow and green pasture and placed next to a soft drink vending machine! The model shown in the middle is used in schools! We need these vending machines here—even if only on farms. They completely relieve the farmer of having to bottle his milk—the consumer brings the containers and fills them with a punch of a button. For more information (in Italian) visit <http://www.prometea.it/?service=latteria>.



Americans look to the CDC to provide factually correct information that is not misleading. The above references prove that pasteurization *does* harm the nutritional value of milk. Therefore, the CDC is obliged to remove the following erroneous statement from its website, recommendations and all other CDC materials: "Pasteurization does not harm the nutritional value of milk and cheese."

The available scientific evidence shows that pasteurization *does* harm the nutritional value of milk and cheese. ☯☯

Dr. Robert Irons earned his PhD in Nutritional Immunology from the University of Missouri-Columbia. His graduate work examined the effects of omega-3 polyunsaturated fatty acids from fish oil on primary and secondary immune responses to infectious disease. He received postdoc training at the National Institutes of Health/National Cancer Institute with a dual role in the extramural Nutritional Sciences Research Group; and

the intramural Laboratory of Cancer Prevention, where he conducted research on the cancer protective effects of selenium against colon cancer in mice. He has published in peer-reviewed journals such as the Journal of Nutrition, Journal of Infectious Disease, and Biochemical Journal. He has served as research consultant to the Adelle Davis Foundation and the Price-Pottenger Nutrition Foundation. Dr. Irons received first prize for his poster presentation at Wise Traditions 2007. Dr. Irons is Vice-President of Research and Development at V.E. Irons, Inc., a dietary supplement manufacturer established in 1946. He can be reached at Robert@veirons.com or (816) 221-3719 extension 704.

NEW YORK UPDATE

The dispute between Meadowsweet Dairy LLC and the New York Department of Agriculture and Markets (NYDAM) has escalated into a war that is now being fought on three fronts. (See the Winter 2007 issue of *Wise Traditions* for background on the case.) In November the Commissioner of NYDAM issued an order for the destruction of dairy products that the agency had placed under seizure a month earlier. On December 11, the LLC and its 121 owners filed suit against NYDAM in Seneca County Supreme Court asking that the court issue a permanent injunction prohibiting the agency from interfering with the LLC's operations. On December 13, NYDAM struck back by filing an administrative complaint asking farmers Steve and Barbara Smith (the majority owners of the LLC) to show cause why Meadowsweet Dairy should not be shut down for, among other things, selling raw milk without a permit.

Shortly after filing the suit, the agency sent inspectors to the Smiths' farm with a warrant to destroy those dairy products under seizure. During their visit, the inspectors noticed other dairy products and asked to inspect them. The Smiths responded by calling their local sheriff who, upon arrival at the farm, told the inspectors that they did not have a warrant to inspect other products and should leave. Inspectors showed up again on December 19, this time with a warrant to inspect the Smiths' entire premises. When the inspectors got to the farm's processing facility, they found that locks had been installed on its doors. The inspectors asked the Smiths to unlock the doors. The Smiths called their attorney, Gary Cox, and read the warrant to him. The warrant did not contain any provision authorizing the use of whatever force to gain access to a facility; so, Gary therefore advised the Smiths not to unlock the doors. After consulting with their boss at NYDAM's Division of Milk Control and Dairy Services, the milk inspectors eventually left without getting into the processing facility. They returned nine days later with the same warrant but were denied access a third time and again went home empty handed.

NYDAM retaliated for the Smiths' refusal to let it inspect the farm's processing facility. On February 1, pursuant the request of the agency, Judge Egan of the Albany County Supreme Court issued an order requiring the Smiths to show cause why they should not be held in contempt for refusing to let the agency into their dairy processing facility when the inspectors had a warrant. (Egan was the judge who signed the warrant.) On February 28, a hearing was held on the judge's show cause order. At the end of the hearing the judge did not issue a ruling but instead told the parties that he would be taking the matter under advisement.

The agency's December 13 motion to show cause had been heard earlier by an administrative officer on January 17 and 18. As of this writing, the officer had not issued a ruling but was expected to do so shortly. The Smiths' lawsuit for an injunction against NYDAM was heard before the Seneca County Supreme Court on January 22. The judge in that case did not issue a ruling but instead, under a state procedural law, transferred the case to Albany County Supreme Court where it will probably be heard by Judge Egan sometime this summer.

The Meadowsweet Dairy case shows the lengths to which NYDAM will go to maintain jurisdiction over cow share or farm share programs like the one the Smiths operate. The battle between the two parties is shaping into a typical war of attrition where the bureaucracy tries to prevail by depleting the resources of its opponent. For updates on the Smiths' situation as well for other news about the raw milk movement, please go to David Gumpert's blog, www.thecompletepatient.com.

RAW MILK UPDATE
by Pete Kennedy

Much has happened in the raw milk movement over the past few months. Media coverage continues and has become increasingly favorable. While reporters still publish the government line in their stories, they're also devoting more space to the testimonials of raw milk advocates. Reuters has predicted that raw milk will be the number one health story in 2008. Politicians have taken notice. A number of bills have been introduced at the state and federal level that would either legalize or expand the sale of raw milk. On the down side, the State of California is continuing its efforts to establish a *de facto* ban on the retail sale of raw milk. A major court battle is also underway in New York over the question of whether shareholder dairies are beyond the state's jurisdiction.

ALASKA: State Representative Mark Neuman (R-Wasilla) has introduced House Bill 367, a bill to legalize the sale of raw milk and raw milk products in Alaska. The bill was prompted by the shutdown of a state-run milk plant in Alaska's southeastern region last fall. The region's four licensed Grade A dairies that were selling to the plant had no other place to sell their milk after the shutdown and have been dumping well over half of their daily milk production ever since. If HB 367 passes as it was originally written, Alaska would be the first state to permit the sale of raw milk in restaurants. The Department of Environmental Conservation (DEC), the state agency in charge of regulating milk and milk products, opposes the bill. Shortly after the introduction of the bill, DEC threatened to shut down the state's largest cow share dairy which also happens to be a Grade A licensee. Current law permits the distribution of raw milk through cow share programs.

MARYLAND: House Bill 147, a bill that would exempt from regulation the sale of raw milk and raw milk products from milk producers directly to the final consumer, was introduced. A similar bill was before the Legislature last year but did not make it out of committee. On another front, the Court of Special Appeals of Maryland will be ruling this summer on a challenge by Buckeystown farmer Kevin Oyarzo to the state's cow share ban. Maryland is one of only four states whose law expressly bans cow shares. [For the background of the case see the *Winter 2007 Wise Traditions*.]

MISSOURI: State Representative Belinda Harris (D-Hillsboro) has introduced House Bill 1901, a bill that would clarify the law on the sale of raw milk and cream in Missouri. Current law excepts the sale of raw milk and cream at the farm and through delivery from the general prohibition on the sale of raw milk. Last summer and fall the state Milk Board sent warning letters to half a dozen farmers claiming that a permit was required to sell under the exception. Rep. Harris' bill was in response to the public outcry that followed the Milk Board's actions. HB1901 makes clear that a permit is not required to sell raw milk and cream at the farm and through delivery. Even if the bill does not pass, it can be considered a success. The Milk Board has reversed its position and now says that a permit is not required to sell under the exception. The Milk Board sent letters of apology to all the farmers it had warned last year. Rep. Harris' bill has broad support. The biggest obstacle to its passage is that the Republicans, who comprise the majority in the Missouri House of Representatives, may introduce a raw milk bill of their own. The Chair of the House Special Agribusiness Committee to which HB1901 has been assigned has delayed a hearing on the bill while waiting to see if a Republican bill will materialize.

OREGON: Oregon residents recently lost an opportunity to have a plentiful supply of raw milk and raw milk products. On December 21, 2007, an administrative law judge held that the Oregon Department of Agriculture (ODA) was within its legal authority when it placed under embargo one pound of raw butter at the warehouse of Azure Standard, a wholesale distributor located in Dufur. Until ODA placed the embargo on the butter, Azure Standard had been selling raw milk and raw milk products produced by Organic Pastures Dairy Company (OPDC) of Fresno, California. The OPDC products had been labeled "for cat or dog food only." The issue before the judge was whether the ban on the sale of raw milk in Oregon extended to products for pet consumption. If the judge had ruled in Azure Standard's favor, the Oregon market for raw milk and raw milk products would have opened up considerably. OPDC, at one time, sold raw dairy products to about forty retail stores in the state before the Oregon Attorney General issued an opinion in late 2005 that it was illegal to sell raw cow's milk and products made from raw cow's milk for pet consumption. Under current law, only farms with two or fewer lactating cows are exempt from the ban on the sale of raw cow's milk.

SOUTH CAROLINA: The South Carolina Department of Health and Environmental Control (DHEC) recently approved the sale of raw milk at retail establishments. DHEC is requiring that raw milk sold in retail stores have a warning label and that it be displayed in a location separate from pasteurized milk. Prior to the agency's policy change, raw milk sales had been mainly limited to on the farm.

VERMONT: A bill (H.616) to liberalize the sale of raw milk is before the House Agriculture Committee. H.616, "The Farm Fresh Milk Restoration Act of 2008," would permit farmers who have been certified by a local certification committee to sell unlimited quantities of raw milk on the farm and through delivery. Certified farmers would also have the right to advertise. Under current law, farmers can sell no more than 25 quarts of raw milk a day on the farm and are not permitted to advertise. H.616 has over sixty sponsors. Rural Vermont, an organization dedicated to supporting the state's family farms, has been the driving force behind the bill.

FEDERAL: On November 5, 2007, Congressman Ron Paul introduced HR4077, a bill to "authorize the interstate traffic of unpasteurized milk and milk products in final package form for human consumption when the milk or milk product originates in a State that allows the sale of unpasteurized milk and milk products in final package form and is destined for another State that allows the sale of unpasteurized milk and milk products in final package form." The purpose of the bill is to initiate the elimination of the federal regulation (21 CFR 1240.61) that prohibits raw milk and raw milk products for human consumption in interstate commerce. This regulation has hindered the ability of raw milk dairies to market their products; and it has made it more difficult for consumers to find sources of raw milk. As the FDA's warnings increasingly fall on deaf ears, the regulation looks more vulnerable to a challenge. Getting rid of it would remove a major obstacle to prosperity for small dairy farms. HR4077 has been referred to the House Committee on Energy and Commerce.

CALIFORNIA UPDATE

The efforts of the California Department of Food and Agriculture (CDFA) to eliminate the retail sale of raw milk continue. As covered in the Winter 2007 issue of *Wise Traditions*, the California legislature passed a law (AB1735) last year requiring that retail raw milk have a coliform level of 10 or less in the final container. The state's two dairies licensed to sell raw milk, Organic Pastures and Claravale, determined that they would try to overturn the law in both the legislature and in the courts. In late December the dairies filed a suit against CDFA in San Benito Superior Court asking that the agency be permanently enjoined from enforcing the coliform standard. The case is being handled by the Farm-to-Consumer Legal Defense Fund. No court date had been scheduled as of the time of this writing.

On the legislative front, an intense lobbying campaign effort was waged by raw milk supporters with thousands of people contacting CDFA, the governor's office and the legislature. Initially, the California Assembly's Agriculture Committee refused to hold hearings on the coliform standard but the opposition to the standard became so great that the committee relented. On January 16 the committee held a hearing on the standard before a packed house of over 500 people. Led by committee chair Nicole Parra, the Agriculture Committee voted unanimously to support compromise legislation (AB1604, which would call for a six-month stay on any coliform testing with the possibility that a new coliform standard of 50 (taken at the bulk tank instead of the final container) would go into effect in the summer.

AB1604 lasted less than two weeks. Shortly after the hearing, the bill was assigned to the Assembly Appropriations Committee, a questionable move since no expenditure of money would be necessary to revise the coliform standard. The bill never actually made it to Appropriations because Rep. Parra withdrew it. In place of AB1604, a "blue ribbon" committee is to meet later in the year to study raw milk. For now, it appears that CDFA's government-by-stealth tactics (it never notified either licensed dairy about AB1735 before the bill became law) have paid off for the agency again.

AB1735 went into effect on January 1, 2008. If three out of five consecutive coliform tests are over ten for either dairy, its sales will be suspended. As of this writing, Organic Pastures milk had been tested three times with a coliform count over ten twice. If either of the next two tests is over ten, Organic Pastures intends to file a lawsuit asking for a temporary restraining order and preliminary injunction prohibiting CDFA from suspending sales at the dairy.

Please consider making a donation to the Farm-to-Consumer Legal Defense Fund to help overturn a law that was instituted not to protect the public health but to end the retail sale of raw milk in California.

Healthy Baby Gallery



Four-year-old Isabel and nine-month-old Greta are thriving on a healthy traditional diet. Mom followed the diet throughout both pregnancies, and was careful to give them a healthy spacing of years. They love their raw milk and cod liver oil—more members of the future generation to go out and share the knowledge of Weston Price!

WAPF baby Nicholas Shenefelt was breastfed eleven months and now loves his liver formula, reports his mother Sheryl.



Hazel, age three and Rowan, age six months, are the happy, healthy offspring of Chelsea Clark and Ben Albee. Both get cod liver oil, raw milk, high quality eggs and plenty of animal fats—Rowan via mama's breast milk.



Tucker Shearer at three and one-half years holding his brother Peter Shearer at about thirty minutes old. Both boys were born at home and are happy, healthy and full of energy. Peter is now eight months old and already walking, nearly a month earlier than his big brother. Tucker has been raised on raw milk, and the first food experience for both boys was gumming on a nice piece of rare grass-fed steak!



Matthew Scott Seevers joined his healthy brother and sisters in the world on February 15, weighing over eight pounds and measuring over 21 inches in length, with a 40-yard dash of 4.7 seconds and a bench press of 315 pounds. At least that's what his proud dad tells us. Scott and Danna Seevers are WAPF-ers from way back. Danna got the raw milk movement going in Ohio and consumed Nature's perfect food all through pregnancy.

Please submit your baby photos to Liz Pitfield at liz@westonaprice.org. Be sure to label photographs with the full name of the baby.

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Local chapters of the Weston A. Price Foundation help others find locally grown meat, eggs, dairy products and produce; and work towards the return of nutrient-dense foods to American tables through educational and activist activities. We now have almost 400 local chapters in every state except West Virginia and Delaware, and in many foreign countries, including Iceland! If you are interested in setting up a local chapter, please contact the Foundation at (202) 363-4394 for further details. Local chapter applications are also posted at westonaprice.org.

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LOCAL CHAPTER BASIC REQUIREMENTS

1. Provide information on sources of organic or biodynamic produce, milk products from pasture-fed livestock (preferably raw), pasture-fed eggs and livestock and properly produced whole foods in your area.
2. Provide a contact phone number to be listed on the website and in our quarterly magazine.
3. Provide Weston A. Price Foundation materials to inquirers, and make available as appropriate in local health food stores, libraries and service organizations and to health care practitioners.
4. Provide a yearly report of your local chapter activities.
5. Be a member in good standing of the Weston A. Price Foundation

OPTIONAL ACTIVITIES

1. Maintain a list of local health care practitioners who support the Foundation's teachings regarding diet and health.
2. Represent the Foundation at local conferences and fairs.
3. Organize social gatherings, such as support groups and pot luck dinners, to present the Weston A. Price Foundation philosophy and materials.
4. Present seminars, workshops and/or cooking classes featuring speakers from the Weston A. Price Foundation, or local speakers who support the Foundation's goals and philosophy.
5. Represent the Weston A. Price Foundation philosophy and goals to local media, governments and lawmakers.
6. Lobby for the elimination of laws that restrict access to locally produced and processed food (such as pasteurization laws) or that limit health freedoms in any way.
7. Publish a simple newsletter containing information and announcements for local chapter members.
8. Work with schools to provide curriculum materials and training for classes in physical education, human development and home economics.
9. Help the Foundation find outlets for the sale of its quarterly magazine.

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Abigail Moody, daughter of Louisville, Kentucky chapter leaders John and Jessica Moody, looks happy and healthy in her "I Love Raw Milk" teeshirt. To order raw milk teeshirts in a variety of styles, contact the Weston A. Price Foundation at info@westonaprice.org or (202) 363-4394.

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Wake Forest: Laura Bowen (919) 569-0308, laurabowen@nc.rr.com
- ND Fargo/Moorhead (Minndak): Skip Wood (701) 239-7622, wood@cableone.net
Minot: Farrah Faulkner (701) 448-9210, farrahfaulkner@yahoo.com
- OH Amelia/Clermont County area: Michael Taylor (513) 553-9868, realfoodremedies@gmail.com
Canal Fulton: Betsy Clay (330) 854-6249, betsyclay@sbcglobal.net
Canton: Kathryn B. Stockdale (330) 756-0162, juiceplus@wilkshire.net
Cincinnati: Richard and Vicki Braun (513) 921-1577, victoriabraun@hotmail.com and Anita Sorkin (513) 559-0112, anitasorkin@hotmail.com
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Defiance: Ralph and Sheila Schlatter (419) 399-2350, rschlat@bright.net
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Lima: Laurie Smith (419) 568-3951, lms@signsohio.com
New Hampshire: Marita Whitaker (419) 568-2855
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- OK Enid: Catherine Rott (580) 484-0425, catherinerott@gmail.com, <http://www.oklahomahealthfreedom.org/wapfcentralok.html>
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- OR Central Oregon: Rebecca and Walt Wagner (541) 447-4899, justwagner@msn.com
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Eugene: Lisa Bianco-Davis uncommon_interests@yahoo.com and Victoria Schneider, CNT (541) 343-3699,

CHAPTER RESOURCES

Resources for chapter leaders are posted at www.westonaprice.org/chapterleaders/ including our new trifold brochure in Word format and PowerPoint presentations.

LOCAL CHAPTER LIST SERVE

Thank you to Suze Fisher of our Maine chapter for setting up a local chapter chat group. New chapter leaders can sign up at <http://groups.yahoo.com/group/wapfchapterleaders/>

LOCAL CHAPTER HANDBOOK

We are working on a handbook for chapter leaders, which will include general guidelines, a checklist for starting a local chapter, suggestions for meetings and activities and resources. Please send any suggestions you may have to chapters@westonaprice.org by January 15, 2008.

Local Chapters

info@krautpounder.com, www.krautpounder.com

Grants Pass/Medford: Carl and Monna Norgauer (541) 846-0571, cnorgauer@clab.net, Lynn Parks (541) 787-9236, stuff4parks@charter.net

Klamath Falls: Shannon Nash (541) 798-5600, shannonnash@centurytel.net

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- SC Greenville: Dr. Henrietta McElwee (864) 254-1091, drhenrietta@gmail.com
Sumter: Robby Elmore (803) 469-0824, robbey_elmore@msn.com
- SD Aberdeen: Melanie Winkler (605) 225-9387, winkler@nrctv.com
Eastern South Dakota: Dale & Susan Miskimins (605) 693-4039, mrshobo@hotmail.com
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Selby: Julie & Bill Rosin (605) 649-7224, sdsavvygal@yahoo.com
- TN Chattanooga: <http://health.groups.yahoo.com/group/WAPChattanooga/>
Brentwood: Shawn Dady (615) 336-2286, shawn@sunsetblvdstudios.com
Knoxville/Oak Ridge: Susan Emert (865) 637-1037, susanmemert@msn.com and Marty McWhirter (865) 637-4029, easttn_wapf@comcast.net
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<http://health.groups.yahoo.com/group/wapfmemphis/>

CHRISTMAS WITHOUT RAW MILK?



The scraggle-toothed family of Yorkshire, Ohio chapter leader Dan Kremer, wife Nancy, pictured with the caption "Christmas without raw milk!" on their Christmas card. . .



. . . and how this beautiful family really looks because they all drink raw milk every day!

Local Chapters

- TX Abilene/Eastland: Kerry & Joy Hedges (254) 725-4084, slowpokefarm@hotmail.com
Austin: Judith McGeary (512) 243-2706, jmcgeary@pvco.net
Dallas: Dr. Ken Taylor and Lisa Troy (972) 233-2346, drtaylor5159@yahoo.com, www.traditionaltx.us
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- VT Northwest Vermont: Doug Flack (802) 933-7752, www.flackfamilyfarm.com
- VA Alexandria: Janice Curtin (703) 751-5505, janicecurtin@gmail.com and Alana Sugar (703) 566-9682, alanasugar@comcast.net
Ashburn: Susan Clark, DC (703) 858-3575, susan@back-n-action.com
Earlysville: Susie Vance (434) 973-3753, wpearlysville@yahoo.com
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Front Royal/Strasburg: John & Maria O'Brien (540) 635-3007 and Regina Farinholt (540) 837-2926, wapfva@gmail.com
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Leesburg: Dr Peter Hilgartner & Dr Lolin Hilgartner (703) 777-8891

Many brave individuals braved sub-zero weather to take part in the Wauconda, Illinois chapter meeting January 19, 2008. The youngest chapter member joined his elders in looking on while Elizabeth English presented a two-hour food demonstration. Participants learned how to make butter, cream cheese and a smoothie and tasted Elizabeth's sour dough bread. Other tasty treats included crispy nuts, pickles, pineapple chutney and gingered carrots. The meeting was held at Water's Edge Waldorf School in Wauconda. Thanks to Linda DeFever who serves as chapter leader and to Joann Freeman for the photos.



Local Chapters

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Brisbane: Julie Phillips (07) 3841-5999, foods@ihug.com.au

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VIC Fish Creek: Victorian Organic Dairy Farmers Association (Bev Smith) (03) 5683-2340, orana@dcsi.net.au
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ONT Durham/Markdale: Anne & Dave Watson (519) 369-9974, highmeadows@xplornet.com
Huron Shores: Marcus Koenig and Jessie Koenig-Liang (519) 294-0599, makoenig@porchlight.ca
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Mosgiel (Otago): Jennifer Smith 03 489 4321 (between 6-9 pm), jjsmith@es.co.nz
South Canterbury: Ingrid Weihmann 03 686 6613, onlynatural@paradise.net.nz
Wellington: Ian Gregson 64 04 934 6366, wapf@frot.co.nz www.wapf.org.nz
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South West England: Ben Pratt 07952 555811, ben_mta@hotmail.com

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FARM PRODUCTS BY STATE

CA
Grass-fed, ranch-raised natural light beef. Locally ranch-raised, in Orange County, California. No additives or preservatives, Not available in stores **delivered to your door**. Frozen in 1 1/2 pound packages. (714)749-5717, 5Bar Beef. 9/2

DC
CSA: Hi-Brix, nutritionally dense, biodynamically grown kitchen vegetables, grass-finished beef, pastured pork, broilers and eggs. Openings for 2007 season in DC Metro area. Contact Allan Balliett, info@freshandlocalcsa.com (304)876-3382, www.freshandlocalcsa.com. *9/4

H Street Community Market food coop on Capitol Hill. It will be WAPF-friendly offering pastured meat, eggs, dairy, hard-to-find flour, biodynamic products and local products when available. We encourage you to join and help shape the vision and products that will be offered. For more information visit our website: www.hstcommunitymarket.org or email, hstfoodcoop@gmail.com 9/3

IL
COME TO OUR FARM - Healthy, FAT, beef & pork, born and raised certified & organic - no nitrates. Sides or cuts (as available) plus many other healthy foods. Chapter Leaders Dale Kelsey - sustainable producer receiving no government funds, no grants, no subsidies, & Eileen Kelsey CHom. incorporating WAPF Nutrition with Classical Homeopathy (815)-239-1466 9/3

IN
Farmstead cheese, butter and dry curd cottage cheese; all made on our family farm. Our cows are 100% grassfed using no antibiotics, pesticides or hormones. Grassfed beef, veal, and whey-fed pork available for sale in Indiana only. Dairy products available via **mail order** or at our farm store. The Swiss Connection, Alan Mary & Kate Yegerlehner.

We encourage our readers to obtain as much of their food as possible from small farms and independent businesses.

(812) 939-2813 www.swissconnection-cheese.com. 9/4

MA
MistyBrook Farm offers certified organic raw cow's milk, beef, veal, pork, lamb, eggs, and vegetables. Raw milk available year-round from 100% grass-fed cows. Visit our traditional mixed farm! Katia Clemmer at 413-477-8234 email mistybrookorganicfarm@yahoo.com, located in Hardwick, MA. 9/2

MD
Organically raised grass-fed beef, free-range eggs, pastured chicken. Pick up from Potomac, Buckeystown or Emmitsburg (beef only). No hormones, antibiotics, or animal parts are fed. Beef never fed grain. Nick's Organic Farm, Quality Organic Products since 1979, Nick Maravell, 301-983-2167, nickmaravell@comcast.net 9/4*

Windmill Meadows Farm, Washington County, MD. Grass-based sustainable family farm. Our Focus: healthy, well-balanced soil produces healthy livestock on healthy grass for healthy, good-tasting food products. Grass-fed dairy, beef, goats, pasture-based poultry (broilers & layers).301-739-5258 9/2

MI
Creswick Farms. Dedicated to raising healthy, happy animals, lovingly cared for just as Mother Nature intended, which provide high-energy, nutritious and delicious food for health-conscious individuals. No antibiotics, steroids or GMOs ever fed to our animals! (616) 837-9226, www.CreswickFarms.com. 9/4

FARM PRODUCTS BY STATE

Pastured poultry, chickens & turkey – whole or pieces, ground or sausage, available year round. Fresh in summer. GMO-free. No antibiotics, hormones or chemicals. Year round greenhouse salad production; vegetables in season. Happy Hill Farm, Hart, MI (231) 873-8972, sweetwaterlocalfoodsmarket.org 9/4*

Organic Raw milk cheese from pastured cows. Gouda, Edam, Gouda with spices and Cheddar. \$7.50-8.50/lb plus **shipping**. Also grass-fed beef, lamb, turkey, pork, chickens, and eggs available on our farm. Steve-N-Sons Grassfields Cheese, 14238 60th Avenue, Coopersville, MI, 49404. www.grassfieldscheese.com. 9/3

MN
Farm On Wheels offers animals raised green grass-fed & certified organic. Nutrient-dense beef, lamb, chicken, eggs, turkey, goose, duck, pork, lard, butter. No corn or soy. Farmers Market year around in St. Paul, Prior Lake, Northfield, Just Food. Linda 507-789-6679, www.cannon.net/~farmonwh. 9/1

Nutrient-rich summer-gold butter and cheese from PastureLand Cooperative. Our products are made from the milk of 100% grass-fed cows grazing certified organic pastures in southeastern Minnesota. **Shipping available**. 888.331.9115 for more information. www.pastureland.coop. 9/4

NJ
Fresh Vital Foods from fertile soil. A natural function of soil, sun, rain, and compost and traditional, sustainable farming. Brown eggs with orange yokes from chickens on grass pasture. Seasonal vegetables and Native American fruits & nuts: Persimmon, Pawpaw, Black Walnut, Hazelnut. River Birch Micro Farm, 19 Forman Ave Monroe Township, New Jersey 08831 (732) 605-0444 9/4*

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FARM PRODUCTS BY STATE

NY

All natural grass-fed black Angus, located in the Finger Lakes of New York, sold by the quarter or half. Call 315-536-7208. Southview Angus Farm, Penn Yan, NY. 9/1

Biodynamic raw milk available through herd-lease program. Also pastured chickens and fresh eggs available. Pleroma Farm, Arthur Lups, Hudson, NY (518) 828-1966. 9/3

Certified organic grassfed dairy. Raw milk cheeses, cottage cheese, yogurt, sour cream etc. from Jersey cows. Eggs from pastured chickens. Grassfed beef, pork, chicken, rabbit and turkey. Long Island drop. 717-768-3437 Pleasant Pasture Organic Acres. 9/4

OH

Ber-Gust Farm – pastured, miniature Jersey dairy cows. All natural beef, pork, poultry and produce. Also jams, jellies, honey & apple-butter. Waynesfield, Ohio. 419-230-2195, 419-230-2194, www.ber-gustfarms.net. 9/3*

Concerned about what you eat? We use ecological pastoral farming methods. Grass-fed beef, broilers, pastured poultry eggs and raw honey. Raw dairy available from pastured Jersey cows through herd share program. Valley Grass Farm, Samuel & Katie Yoder, 2386 County Road 200, Dundee OH, 44624. Write for info. Voicemail 888-790-1473. 9/1

Jubilee Meadow Farm, LLC - All-grass dairy with Dutch Belted Ayrshire cows. Very small fat particles, very easy to digest, Herdshares available, also grassfed beef, pork, poultry, & eggs. North of Columbus, off I-71. (419) 946-1413 or stevofarms@redbird.net. 9/2

OR

Grass-fed beef, pastured pork, chicken and lamb. No antibiotics, hormones, synthetic nitrogen fertilizers. **We ship mixed boxes** starting at \$119 for 20 lbs. Discount for local pickup. Also raw cow's milk. Visit us at www.deckfamilyfarm.com. 541.998.4697. 9/3

PA

Bareville Creamery 100% Grassfed offers Cultured Butter and Farmstead Cheese. **We will ship to you!** Or visit our farm to pick up. Special price on Fall 2006 butter. Call for price list. Daniel Zook, Leola, PA, 717-656-4422. 9/4

Certified, Organic, no-grain dairy, selling raw milk and raw milk cheeses. Also organic bread grains and raw honey. Hope Springs Farm Loren Weaver Family, East Earl, PA, 17519 Telephone: 717-445-0281 9/2

Certified Organic Dairy. Raw milk cheese pastured chickens, turkeys, pigs, 100% grass-finished beef, beef & chicken broth. Call for more information (717)786-8093, Green Hills Farm, John & Annie Esh, Quarryville, PA, 17566 11/4

Certified organic grassfed dairy. Raw milk cheeses, cottage cheese, yogurt, sour cream etc. from Jersey cows. Eggs from pastured chickens. Grassfed beef, pork, chicken, rabbit and turkey. Call for information. **Will ship.** 717-768-3437 Pleasant Pasture Organic Acres 10/4

Raw dairy products from grassfed Jersey/Normandy cows, Grassfed poultry products. Chicken stock \$6.00/quart. Ask for soy-free chicken. **Shipping.** Buttercup Farm, Henry and Annie Zook, 5084 Lincoln Highway East, Kinzers 17535, (717)442-1266. 9/1

Raw Dairy Products from our grassfed Jersey cows. Eggs from our free-range pastured chickens. Beef from our own beef cows. Pork from our own pigs, Running Water Farm, Isaac & Mattie King, 1238 Clay Rd. Lititz, PA-17543 tel 717-627-3177 11/4

Raw Dairy Products from our 100% grass-fed Jerseys. Free-range, grass-fed, chicken, turkeys. Suckling veal, whey-fed pork, lard, We do not use hormones or antibiotics. Shady Acres, Glenn Wise, 8514 Elizabethtown Rd. Elizabethtown, PA, 17022, **Shipping Available.** (717) 361-1640. 9/3

Pasture-raised raw milk and dairy foods. Also chicken, turkey, veal and beef. Nature's Sunlight Farm, Mark and Maryann Nolt, Newville, PA, (717)776-3417. 9/4

Certified raw milk and whole raw milk cheeses made right on our organic farm. No grain is fed to our cows. Butter, cream, yogurt, sour cream. CARE members only. **We will ship cheese.** Hilltop Meadows Farm, Pine Grove, (570) 345-3305. 9/2

Raw milk cheese from our grass-fed Jerseys, made on our family farm with Celtic seasalt. No grain fed. Also grass-fed beef and lamb and pastured chickens, turkeys and eggs. No hormones or synthetics. On-farm sales. Wil-Ar Farm, Newville, PA (717) 776-6552. 11/2

Heirloom Herbs and Vegetables in season. Salad-greens grown chemical-free. Fermented zucchini, beet kvass and more. Sourdough breads **by order** (no sales Sun). John Z. Stoltzfus, Heirloom Gardens, 549 Beaver Dam Road, Honeybrook PA, 19344 610-273-2633. 9/1

TN

We are a family farm offering all-natural, delicious, grass-fed lamb, pork, beef and chicken. We now offer Jersey heifers for family milk cows (gentle!!) Call (866)866-3287. Ask for Justin or Liberty or email: topoftheworld-farm@wildblue.net 9/4

VA

Manassas Milk Project has raw milk shares available. Milk is from your own pastured Jersey cow. Western View Farm, Call Martha Bender 540-788-9663. 9/4

Salatin family's Polyface Farm has salad bar beef, pigatorator pork, pastured chickens, turkeys and eggs, and forage-based rabbits. Near Staunton. **Some delivery available.** Call: 540-885-3590 or 540-887-8194. 9/3

WI

100% Grass-fed Organic Black Angus beef, Pastured pork and chicken. Beef and pork fat (tallow & leaf lard), organ meats and chicken feet. MSG & Nitrate-free all-beef hotdogs, deli roast beef, kielbasa and naturally cured hams and bacon. Also, traditional cooking instruction. Anderson Farm is located 45 min. SW of Eau Claire WI. 888-700-FARM (3276), andersonfarm@nelson-tel.net, www.andersonfarm.us. 9/3

Certified, Organic, soy-free dairy, raw milk cheese, cultured butter, cream, yogurt, cottage cheese, colostrum. Also full line of grass-fed beef, pastured chicken, turkey and free-range eggs. Raw honey, maple syrup, and extra virgin organic coconut oil also available. **Will Ship.** Grazin Acres LLC 608-727-2632 located 1 hr NW of Madison. 9/3

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COCONUT OIL - Nature's Blessing - USDA certified organic. Discovered on my recent trip to the Philippines, this oil is wonderful! Coconuts are grown and processed on site within 8 hours, cold-pressed. The oil is clear with a wonderful mild flavor. Carrie HAHN, WAPF chapter leader 412-531-4485. 9/3

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DVD OF JOEL SALATIN, "Heal the Planet by Healing Your Plate," presented at the Florida launch of the Farm-to-Consumer Legal Defense Fund on 8-30-07. About 2.5 hours. \$20 donation to local WAPF chapter, includes shipping to US. Email WAPFSarasota@gmail.com. *9/3

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FUNDS NEEDED. Milk Movie. Grass Roots Effort Needed. For documentary. Help us make a difference! Soliciting funds to shoot a documentary of the story of raw milk. Every dollar will help us bring the story of this incredible healing food to the screen. Douglass, Schmid, McAfee, Fallon and others will play major roles in bringing you "The Raw Truth." Send checks payable to: White Tiger Productions C/O First Republic Bank, 1099 4th St. San Rafael, CA 94901. *7

FARMSTEAD FRESH Inc. is soliciting investors to help with business expansion. The business is known for training sustainable dairy farmers in making gourmet quality "One Step Above Organic" grass-fed raw milk cheese and marketing it. www.farmsteadfresh.com. 9/3*

GIVE A JOB is a non-profit initiative in Israel which needs help funding a green house and olive press. The aim is to create jobs for those suffering poverty. Tax exempt receipts given. For more info, please email Shapur at parrots@netvision.net.il. *9/2

INVESTORS NEEDED: Next Level Productions is seeking investors to complete its documentary film "Body Armor." The film follows the journey of individuals with chronic illnesses as they explore natural medicine and alternative therapies. Contact Gabe Golden. 310-779-2816, Gabegolden310@yahoo.com *9/4

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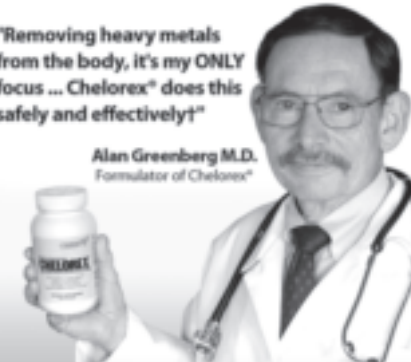
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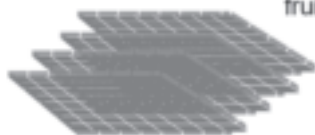


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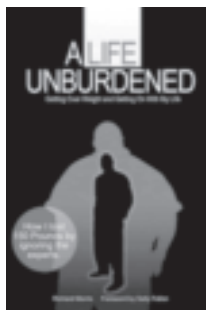
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