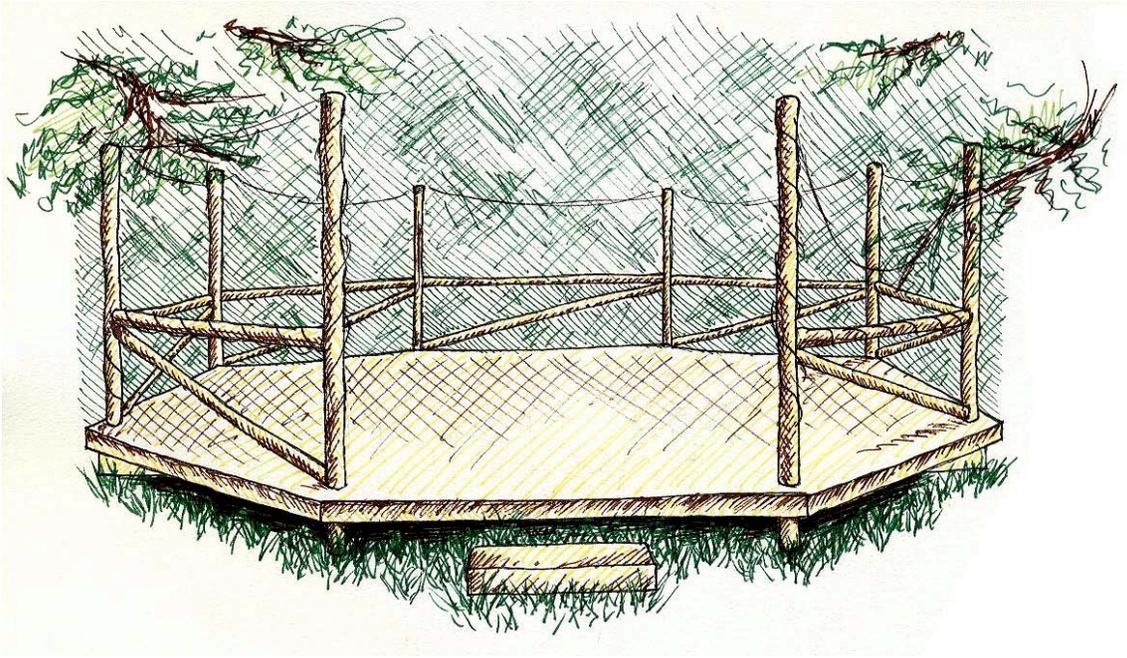


The S&S Homestead Foodbook

Chapter One

Essays



America The Bountiful8
By Elizabeth Simpson

Pastoral versus Industrial Food Production16
By Elizabeth Simpson

The Seasonal Kitchen22
By Elizabeth Simpson

Meat.....28
By Jenelle Kvistad

Some Thoughts on Eating31
By Jenelle Kvistad

Teach Your Children Well.....39
By Elizabeth Simpson

This Isn't a Show Garden43
By Lisa Murgatroyd

America The Bountiful ***Or, Why Eat FLOSS?***

FLOSS is our acronym for Fresh, Local, Organic, Seasonal and Sustainable. Since eating is the most intimate act we perform, putting food in our bodies at least three times a day, the foods we choose make a huge difference in our daily pleasure, and our general physical and moral health. “Fresh” speaks for itself. Fresh foods have a bright flavor and crisp texture. The first strawberry, warm from the bush, the first peas from the pod, the first ripe tomato, provide a delight to the senses we can’t get from imported food. Our CSA customers pick up vegetables that are, at most, three hours out of the soil. We have had folks call us in the middle of their meals to tell us how great the food tastes.

Moreover, “fresh” also means nutritional wholeness. The longer vegetables are out of the soil, the greater the loss of vitamins. A study done by Dr. Walter Goldstein of the Michael Fields Institute found that after eight days, the vitamin C content of spinach drops from 7500 milligrams to 100 milligrams. The staying power of nutritional content does vary: brassicas, such as cabbage and broccoli, keep their nutritional value much longer than the succulents, like leafy greens. Just watch the wilt factor, and you can tell how soon a vegetable loses its vitamin content.

“Fresh” Means “Local”

Truly fresh foods come from your own garden, or the farm of your CSA grower, or a store that carries local produce. As you can tell from the notations in this book, most of the fruits, vegetables and meats grown in America originated in another part of the world, and have been naturalized to America’s regional climates and soils. Why, then, does the U.S. import any of the foods we are able to raise here? Obviously, the answer is that it is often cheaper to produce the foods in far away places than to grow them locally. However, any food that has traveled more than a few miles is almost certainly inferior in quality to food grown where it is consumed. Foods raised for shipping are bred to have a long shelf life and endure packing and long-distance travel. Typically, imported fruits and vegetables are picked green so that they can “ripen” on the road. Since natural sugars develop only when the plants take in solar energy on the vine, long-distance foods are inferior in taste and nutrition to foods grown and distributed locally. One of our interns did a presentation at the local Farmers’ Market in May 1998. She sliced some of our homegrown tomatoes and put them next to sliced tomatoes from the grocery store, which had been grown in Israel. She invited people to taste them. The result? We had a barrage of phone calls and visits from people wanting to buy our tomatoes. I understood, since I have never wanted to eat foods that are better traveled than I am.

Moreover, commercial crops have been chosen for their ability to withstand long journeys and many days in the produce section and your refrigerator; therefore, nutritional value, crop variety, taste, and scent have been sidelined in order to privilege staying power.

The cost of imported foods has serious consequences. A typical morsel of food travels 1400 miles from field to plate, changing hands six times, at heavy environmental

cost. Henrietta Green, a chef in London, notes: “Food miles – the number of miles it takes for a food to get to marketplace – are very important. One kilo of asparagus from California uses four kilos of aviation fuel to get here” (Mead, 42). The use of fuels in the production, processing, and distribution of foods is a primary source of the greenhouse gases that are changing the global climate. Much of the beef served by fast-food restaurants in the U.S. is raised in Latin America, requiring that rain forests burn to create pasture for cattle. Indigenous farmers lose ancestral lands to foreign corporate owners, thereby losing the ability to feed themselves as they have for centuries. And, while there are few enough controls on the use of hormones and antibiotics on cattle raised in the U.S., there are even fewer in Latin American countries; in the flesh of imported animals, we import chemical substances that are illegal in this country.

We contribute to waste and pollution even if we import food from other regions of the U.S. Every time I buy pork or corn products from the Midwest, I contribute to the dead sea (now the size of New Jersey) that lies in the Gulf of Mexico. Effluents from huge pig farms and chemical runoff from endless cornfields flow into the Mississippi, destroying life all the way up the food chain in the river, and the river empties its poisons into the Gulf. In factory farms everywhere, animals are raised under appalling conditions, massed in feedlots so closely together that diseases can be controlled only through antibiotics. Those drugs end up in the air, soil and water, and in the food sent to markets far away.

Transporting food over long distances also contributes to waste. According to the U.S. Department of Agriculture, one-fifth of America’s food goes to waste each year, with an estimated 130 pounds of food *per person* ending up in landfills (Siddiqi 2). When you buy local foods, you learn to accept some oddly shaped tomatoes, or a few bugs in the cabbage (evidence of organic practices), because you know that the food is still delicious and wholesome. But in commercial production, cosmetically imperfect fruits and vegetables are left to rot in the field, or are discarded from the produce sections of grocery stores. Excess foods, still edible, are scraped off of plates in restaurants and homes.

Crop variety, and the biodiversity that underscores it, is seriously undermined by commercial growers’ selection of foods that will withstand shipping. Since they must choose fruits and vegetables for staying power, large growers generally do not raise heirloom varieties that may be delicious and nutritious, but will turn to mush during transport. These varieties are disappearing, and with them, the genetic diversity that protects a species from obliteration when attacked by pests or disease.

Fifty years ago, there were 5000 different seeds available in catalogs. Today, there are 500. This is because large seed companies are buying up smaller ones. If you are a gardener, you probably get ten different catalogs per season. The names are different, but the same company may own them all. The parent company gets its seeds from a single source – which may be in Europe, India, or China – and its first task is to dump seeds that are not useful to large commercial growers. These are usually heirloom varieties, because they must be grown out every year – the seed does not store well. So the biodiversity we depend upon for our food security is best sustained by growing our own, or buying locally. Small farms that sell to local folks can grow heirloom varieties for their flavor, nutrition, and variety of color and size. Compare the varieties of lettuce

or apples available at the supermarket with those available at a local farmers' market or your CSA, and taste the difference.

Why Buy Local Foods?

Briefly, if you buy locally produced foods

- The food travels from the farmer's hand to your hand, not thousands of miles
- You have a personal relationship with the farmer and you can see how the food is grown
- You help preserve a local farming economy and culture
- You strengthen the food security of your community
- You contribute to the ecological health of the planet, and to the conservation of energy
- You help maintain plant diversity
- You help preserve the open spaces and complex ecology that farms create
- You avoid poisons and genetic plant and animal modification that may have unforeseen consequences for human and environmental health
- You have a great place to take guests and children! Henning guides up to ten formal tours of our farm each year, and in the summer we typically host weekly visits from customers' children, grandchildren and guests who love to see the pigs, hold the chickens, cuddle the lambs, pet the milk cow, and wander around the garden, the flower beds, the orchard, the barns, and the pond. If this sounds trivial, think about the number of young people who have no idea where their food comes from, and whose closest contact with animals may be a pet, or a petting zoo.

Does Organic Mean Nutritious?

According to *Organic Gardening* (Sept/Oct 2003), "...Fruits and vegetables grown organically contain, on average, **27 percent more vitamin C, 21 percent more iron, 29 percent more magnesium, 14 percent more phosphorus, and 15 percent fewer nitrates** than conventional produce." I need to add a caveat here, however. "Organic" means only that the food was raised free of pesticides, herbicides, chemical fertilizers or other synthetic inputs. *Nutritional health comes from soil health, which is more than the absence of man-made chemicals.* Soil is the nutritional source and digestive system of the plant. The sources of vitamins, minerals, enzymes, proteins and phytochemicals are in the soil – or not. If



the soil has been leached by water, its micro-organic life killed by chemicals or mechanical compaction, or depleted of organic matter, essential nutritional elements will be absent. Even if they are present, their transfer from soil to plant has to take place. This process requires bacteria, which absorb the nutritional elements from the soil into their bodies, move to the roots of the plant, and exchange the nutrition they carry for carbohydrates. The exchange also requires a layered soil structure, air, moisture, light and warmth. A brief example: Five years ago, we had a very cold spring. Very little grew, and overwintering plants, such as garlic and leeks, developed purple leaves. A visiting soil biologist, Steve Fransen, explained that the plants suffered from a lack of phosphorus, resulting in the purpling of the leaves. Tests showed that there was plenty of phosphorus in the soil, but the vehicular bacteria were dormant because of the cold, and could not do their work.

Healthy soil structure means not only that the soil is loose and friable, but that the natural texture resulting from the tireless work of bacteria, fungi, earthworms and other inhabitants of the soil is left undisturbed as much as possible – one reason that Henning’s rototiller has been retired. Instead of a rototiller, or even a shovel or spading fork, he uses “Big Bertha”, a huge fork-like tool with 2-foot tines (built by a local welder) that loosens the soil without disturbing the layers, air spaces and crumb structure created by fungal and bacterial action.

If the soil they were grown in is lacking in micro-organic life, or if the transfer of nutrients cannot happen due to disturbed soil structure, or because the soil is insufficiently warm or moist, vegetables will produce fiber but not much else. Therefore, while “organic” foods are certainly preferable to those that come laden with poisons and synthetic chemicals, more is required for foods to be called nutritionally whole. Furthermore, the nutritional wholeness and purity of organic foods can also be compromised by transport, processing and packaging. You will note in the section on carrots, for example, that the organic “baby carrots” sold in many grocery stores are really large carrots that have been peeled down to a uniform size, and thus robbed of most of their nutritional value. And, as food researcher Levin, notes: “...an organically grown food might escape toxic contamination by pesticides, heavy metals, and other sewage sludge components, only to be packaged in thin-film plastics that subsequently migrate into the food” (151).

I return to the issue of buying local foods. You can visit the farmer and his compost pile. You can sift the soil in your hands, smell it, and taste it. (I know it sounds odd, but it’s a traditional way for farmers to ascertain the health of their soils.) You can ask questions. You can buy directly from the farmer, and you can even help the farmer produce and harvest nutritionally complete vegetables and other foods for yourself and your family. In other words, you can, even without a garden of your own, participate directly in the health of your foods and thereby, your own health.

Seasonal

Ah, this is the tough issue. In this country, we are so accustomed to the abundance and variety provided by imported foods that “choice” comes second after price in decision-making when we stroll through the produce section. We will buy California

strawberries in March, even though they may come laden with up to fifty-two different pesticides and herbicides and taste like styrofoam. We look forward to oranges in December, even though a dish of fresh kale and a crisp apple from storage would provide the same nutrition, and their own delicious colors, fragrance, and flavors.

Permit me to indulge in the memory of one of my favorite scenes from *Moscow on the Hudson*, a film starring Robin Williams. Williams plays a Russian musician who defects to the United States when he is overwhelmed by the abundance of clothing for sale at Bloomingdale's. He is charmed by life in America, particularly by the consumer goods available to him after his Spartan life in Moscow. The scene I treasure is when Williams is shopping in a supermarket, and turns into an aisle filled with cans of coffee – red, blue, green, gold. At the sight of the apparent “choice”, Williams faints. I don't know if the filmmakers meant this scene to be ironic, but it is to me. What I see is the same coffee packaged in a dozen different ways so that it appears to offer variety. But all the coffee was, most likely, raised and harvested under conditions unhealthy for land, harvesters, and consumers.

Eating seasonally has its own pleasures, described in the following quotation from Jessica Prentice's *Full Moon Feast: Food and the Hunger for Connection*. She writes

After years of eating seasonally, I find that I no longer have any interest in summer foods during wintertime. Knowing that there will be delicious and beautiful tomatoes galore come August, I hold that expectation in private delight. It feeds my hunger for connection, my deep desire to be in touch with the planet and its cycles and phases, the profound intelligence that is at work in the universe. A tomato on my table at this time of year would be disconcerting and out of place. Life would feel out of whack, disrupted, disturbed. Eating a tomato in February would be like opening your Christmas presents at Thanksgiving. It would spoil the fun and kill the anticipation (12).

Moreover, seasonal foods are more likely to be whole foods. An apple is a whole food – apple juice is not. The processed foods we buy have had at least some of their nutritional value stripped away. For example, whole grain wheat, whose products account for 18% of caloric intake for U.S. adults, provides at least 17 nutrients. More than half of these nutrients are lost in the process of flour extraction, and only four are replaced when the flour is “enriched” (Levin, 47). Unfortunately, the multi-million dollar weight loss industry in this country relies on our acceptance of the idea that whole foods are somehow unwholesome. Diet moguls urge us to buy foods for what they don't contain, rather than for what they do. Low fat, low carbohydrate, low sugared foods replace the nutrition found in whole foods with artificial flavors, colorings, and stabilizers, such as trans fatty acids, which are often carcinogenic. Eating processed foods often means that the consumer pops open a plastic container of green goo passing itself off as food, and dips a flavorless nutrition-free tortilla in it. Voila! Dinner!

Buying seasonal, local, whole foods requires knowing how to cook them, and being willing to eat them. Liver is a good case in point. Many of our beef customers do not want the liver, because they have learned that, as organ meat, liver contains concentrated toxins (in non-organic beef, it does – in organic, grass-fed beef like ours, it does not). Or their memory of liver is of a hard-fried, nasty tasting brown slab served up by Mom when finances were tight. Or the idea of eating liver bothers them. As a result,

we keep most of the liver from our slaughtered animals. It is fat-free, a deep red color, and absolutely delicious when lightly fried with onions and a bit of lemon peel. We also get to keep the hearts, the oxtails, the tongues, and the hanging tender. Baked, made into soup, pickled and fried, respectively, these are some of the most flavorful and nutritional parts of the animal.

Teaching people how to prepare seasonal foods lies at the heart of this book. I had never eaten kale, chard, kohlrabi or Savoy cabbage until Henning and I started a Fall/Winter CSA. Since it's clear that the fact that kale and other winter vegetables are "good for you" won't put them on anybody's plate, I found recipes that featured the vegetables we provide every week and passed them on to our customers. And yes, we enjoy these dishes ourselves. Last night, for example, I served kale cooked with potatoes and a few herbs. Lacking fresh tomatoes, I softened some dried tomatoes in olive oil, and then sautéed them together with fresh onion. I topped the dish with feta cheese, and Henning and I fought over the last scraps. (This recipe is available in detail in the Kale section of this book.)

Being willing to cook is another issue. Dollars spent by U.S. adults on food outside the home match dollars spent on food prepared inside the home. But there is clearly a desire for home cooked food. Recipes abound in magazines. Cookbooks are among the most popular books sold in stores. Food-preparation shows are available 24 hours a day on television, and draw huge audiences – mostly teenagers, who may be hungering for a "kitchen culture" unavailable in their own homes. The reasons for eating out or ordering in usually have to do with the need for two incomes and the use of available time. Many families need two incomes, and, after a full day on the job, coming home to children and chores may put cooking at the last of a list of priorities. But it seems a sad exchange of time to buy cookbooks and watch a TV chef prepare a meal and then go out to dinner, and the economics may deserve some reconsideration. My friend Susan, for example, reluctantly left her homemaking to get a job and add to the savings account. But she found that, during her working years, the family, in her words, "simply hemorrhaged money". Instead of eating home-packed lunches, Susan and her husband ate lunch in restaurants, and their boys ate in the school cafeteria. Too tired to cook after a full day's work, Susan would order pizza or Chinese food, or the family went out. After figuring out the costs and benefits, which included their time together as a family as well as the cost of eating out, Susan quit her job. The next year, she found that the family had more money than it had had while she was working. They had moved to a lower income tax bracket, and they spent half the amount of money on groceries they had on commercially prepared food.

Sustainable

For us, "sustainable" means that the intricate farm system we have created can go on forever. The farm is a self-sufficient organism that provides for most of its own needs, including animal feed and soil fertility. We do not exhaust the soil: Henning's pasture management is designed so that animals do not overgraze, and that they fertilize the pastures, trample seed into the ground, and do not need antibiotics or vermifuges. We do

not import fertility: kitchen and garden wastes and animal manures are composted, and, together with cover crops, renew the soil every year. We save seed. Our animals live in closed herds, the same mother cows and bull, ewes and ram, chickens and rooster, producing calves, lambs, and chicks every year. “Sustainable” also means that we produce all the foods we eat: meat, herbs, vegetables, fruit, grain, and dairy products. We have no need for vitamin or other supplements, or for medications. I go to the store for toilet paper, cleaning supplies, yeast, spices, and olive oil. We are learning to minimize the use of fossil fuels and electricity and instead maximize solar inputs. Buying your food from a sustainable, organic farm means that you become part of the process of saving soil, and water, of fostering animal husbandry that produces contented animals and healthy meat.

Health

According to a recent article in *The New York Times*, Americans now spend more on health care than on food. This does not include money spent on health insurance, nor on supplements, which most people consider necessary to compensate for the nutritional deficiencies of conventionally produced foods. According to a note in *Acres* (August, 2006), “A government study that tracked the nutrient levels in fruits and vegetables for 50 years has found today’s offerings are less abundant in key nutrients than those of the 1950s. The USDA monitored 13 major nutrients in fruits and vegetables from 1950 to 1999 with six showing noticeable drop-offs – protein, calcium, phosphorus, iron, riboflavin and vitamin C. The declines ranged from 6 percent for protein, 15 percent for iron, 20 percent for vitamin C, to 38 percent for riboflavin” (9). The decline in nutritive value is due to commercial growers’ choice of varieties that will grow rapidly. Fast-growing varieties are not able to acquire the nutrients that slower-growing varieties can, either by photosynthesis or from the soil. As a local physician noted, “In 1950, you could get a certain amount of nutrients from a bowl of spinach. Today, you would have to eat a bathtub of spinach to acquire the same amount.”

So what are the repercussions? One out of three Americans is clinically obese. Seven out of ten presently develop cancer, a figure that, statistically, will rise to ten out of ten by the year 2020. Diabetes, allergies, colitis, and asthma are on the rise. Learning and behavior problems in children, such as ADD and ADHD, are growing rapidly. The connection between illnesses and diet is well established. The solution is as simple as it is daunting, given today’s fast-paced, fast food culture: Buy fresh, local, organic foods, and eat seasonally.

Physical health is a part of a larger issue. As Barbara Kingsolver writes, “Modern American culture is fairly empty of any suggestion that one’s relationship to the land, to consumption and food, is a religious matter. But it’s true; the decision to attend to the health of one’s habitat and food chain is a spiritual choice. It is also a political choice, and scientific one, a personal and a convivial one.”

Recommended Readings

Foodbook

[Essays]

There are now hundreds of books describing our global (and dysfunctional) food system and remedies for it. Below are only a few, the ones I assign to our students and pass on to folks who like a good read and information generated by people who have found the answers to food issues by living the questions.

Berry, Wendell. *What Are People For?* San Francisco: North Point Press, 1990.

Gussow, Joan Dye. *This Organic Life: Confessions of a Suburban Homesteader*. Vermont: Chelsea Green Publishing Company, 2001.

Kingsolver, Barbara. *Animal, Vegetable, Miracle: A Year of Food Life*. USA: Harper Collins, 2007.

Pellegrini, Angelo. *Lean Years, Happy Years*. Seattle: Madrona Publishers, 1983.

Pollan, Michael. *The Botany of Desire*. New York: Random House, 2002.

---. *In Defense of Food: An Eater's Manifesto*. New York: Penguin Books, 2008.

---. *The Omnivore's Dilemma: A Natural History of Four Meals*. New York: Penguin Books, 2006.

Smith, Alisa, and J.B Mackinnon. *Plenty: One Man, One Woman, and a Raucous Year of Eating Locally*. New York: Three Rivers Press, 2008.

Spurlock, Morgan. *Don't Eat This Book: Fast Food and the Supersizing of America*. New York: G.P. Putnam's Sons, 2005.

Vileisis, Ann. *Kitchen Literacy: How We Lost Knowledge of Where Food Comes from and Why We Need to Get It Back*. Washington:

IslandPress/Sheerwater Books, 2008.

Pastoral versus Industrial Food Production

(a presentation given by Elizabeth Simpson at a Lopez Island community meeting, 2007)

It is an honor to be with you all today. This is a very familiar scene. Every celebration I have ever attended on Lopez has had food as its centerpiece. Weddings, memorial services, graduation parties, and community events – all feature foods, and mostly they are potluck. Usually the dishes people bring are local – often from their own gardens. So when Rhea asked me to speak about the importance of eating locally, I realized that I had the chance to participate in an ongoing, and lived, community conversation. Food is the most intimate act we perform. Three times a day, or more, we put food into our bodies. The choices we make about *what* foods we ingest have many ramifications.

To me, the term “local” means a number of things. The first of these is freshness. The first strawberry, warm from the bush, the first peas from the pod, or the first ripe tomato, provide a delight to the senses we can’t get from imported produce. But freshness also means nutritional wholeness. A study done by Dr. Walter Goldstein of the Michael Fields Institute found, among other things, that after eight days, the Vitamin C content of spinach drops from 7500 milligrams to 100 milligrams. What you get with well-traveled spinach is fiber and water.

The news about health problems today is bad news: over the last twenty years, there has been a dramatic rise in cardio-vascular disease, cancer, obesity, diabetes, digestive problems, ADD, ADHD, asthma, allergies – the list goes on and on. And these illnesses are striking younger and younger people. Dr. Bob says that he is seeing children in elementary school who have early-onset diabetes and are at risk for heart disease. All of these illnesses are related to a diet of processed and de-natured foods, most of which come from far, far away.

The issue of shipping foods long distances goes beyond the illnesses they contribute to. I have never wanted my food to be better traveled than I am. Most foods available in grocery stores have been transported 1400 miles from field to plate, changing hands at least six times on the way. These crops have been chosen for their ability to withstand long journeys and many days in the produce section and your refrigerator, so qualities of nutritional value, crop variety, taste, and scent, have been neglected in order to privilege staying power.

Food miles – the number of miles it takes for food to get to the marketplace – are a real consideration, especially as we see the world’s oil supply dwindling. One kilo of asparagus from California uses four kilos of aviation fuel to get to Maine. The use of fuels in the production, distribution, and transportation of food is a primary source of the greenhouse gasses that are responsible for climate change.

Crop variety is seriously undermined by foods that are raised for shipping. Since fruits and vegetables must be selected for staying power, large growers generally do not raise heirloom varieties that may be delicious and nutritious, but will turn to mush during transport. These varieties are disappearing, and with them, the necessary genetic diversity that protects a species from disappearing when threatened by pests or disease.

50 years ago, there were 5000 different seeds available from seed catalogs. Today, there are 500. This is because large seed companies are buying up smaller ones. If you are a gardener, you probably get ten different seed catalogs per season. The names are different, but the same company may own them all. That parent company gets the cheapest seed it can from a single source – which may be in Europe, or India, or China – and its first task was to dump seeds that are not useful to commercial growers. These are usually heirloom varieties, because they must be grown out every year – the seed does not store well. So the biodiversity we depend on for our food security is best sustained by growing our own, or buying locally. Small farms that sell to local folks can grow heirloom varieties for their flavor, nutrition, and variety of color and size.

Not only seed production, but food production, is being consolidated into fewer and fewer hands. Five corporations control the world's grain supply. A recent study of the food processing industry showed that only 138 men and women sit on the boards of directors of the ten firms that account for over half of all the food sold in America. Just as with seed catalogs, the names and labels are misleading. A hundred different brand names can be owned and controlled by a single company – Phillip Morris, tobacco manufacturer, among them.

Labels on seed catalogs mislead us about who controls and distributes the seed. Labels on processed foods also mislead us in the same way. I grew up with TV ads for the Jolly Green Giant and believed that, all by himself, he grew and distributed the vegetables always pictured behind him. However naïve that was on my part, at least there was a real corporation that controlled the fields and foods that came from them. But today, Green Giant grows, produces, and distributes nothing. Its farms and factories were sold off years ago, and only the brand name is being sold.

More troubling is what labels don't tell us. Companies that produce and market genetically modified foods spend billions of dollars to keep labeling laws from being passed. They don't want you to know about the fish gene in your tomatoes or the bt corn in your tacos. You might choose not to buy the product. And, if you react to the foreign gene, or the bacterium or antibiotic or protein used to insert the gene into the food, the cause of your allergic reaction or illness can't be traced back to them.

Environmental concern is another issue very much at the heart of eating locally. Wendell Berry says, "Eating is an agricultural act." I understand this statement to mean that, when we choose the foods we put in our bodies, we are supporting either agribusiness or local production. Agribusinesses are clustered in several spots in the country, but I would like to focus on the Midwest as an example. Pig farms and corn. Setting aside all other issues for the moment, let's look just at pollution. Effluent from pig farms and chemical runoff from cornfields in the Midwest flow from contributory streams into the Mississippi River, destroying life in the river all the way up the food chain. From there, the poisons flow into the Gulf of Mexico, where they have created a dead sea the size of New Jersey.

Environmental concerns include not only what is present, but what is lost, when small family farms are gobbled up by agribusiness. A case in point is my husband's brother-in-law, Friedrich, who is a farmer in northern Germany. When his father ran the farm, there were fields with varied crops. Five families worked and lived there, managing dairy, meat, poultry, vegetable, and fruit production. Storks nested on the roof of the main house. The frogs, fish, and snakes that fed the storks lived in the ditches and

streams that crossed the fields. When Friedrich took over the farm, he tore out the crops that his father had raised for local sale. He sent the five farm worker families packing, and replaced the labor of their hands with gigantic machines. He filled in the ditches and streams, because the machines he uses need level surfaces. The frogs, fish, and snakes died, and the storks that had fed on them stopped nesting there. He began to monocrop, raising whatever foodstuffs the government would subsidize – acres of rapeseed, wheat, or apples, for example. When the price of apples was undercut by cheaper apples from Spain, the orchards were knocked down. When Spanish apples suffered blight and stopped producing, Friedrich replanted apple trees. Friedrich is running a business, not a farm. He works on machines, not with the soil. The wildlife now on his land consists only of animals he likes to hunt. He and his wife maintain a minimal garden, a few poultry, and exist mostly on processed foods from the grocery store.

I use this example because I have visited there, and seen the changes. But envision a farm in Kansas before World War II. There was a farmhouse, surrounded by trees, a picnic table under them. There were barns for hay, a corral for horses that pulled the plows and harrows, chickens and pigs and a few cows for eggs and meat and dairy production. Now, those family farms are gone, and the towns that served them are dying. The farms have been replaced with agribusinesses, supported by subsidies, growing one crop – mostly corn. The soil and water are polluted with pesticides and herbicides. Birds and wild animals are gone, because there is no habitat to support them. There are only acres of corn or soybeans as far as the eye can see.

What happened to the animals? They have been moved into CAFOs – Confined Animal Feeding Operations. “Factory farms” is a more common term, though the word “farm” is misused here. “Factory” is appropriate, since animals in these operations are treated as machines – “production units” – and are unable to live anything like the lives they would have lived on that Kansas farm.

Laying hens are crammed five or six to a cage. The stress caused by overcrowding and the frustration of every natural instinct a chicken has causes them to rub their breasts against cage walls until they are featherless and bleeding. It also causes them to cannibalize their cage mates, so they are “debeaked” with a hot knife. As their production begins to fall off, they are starved of food and water and light for several days. The assumption is, that as the hen begins to die, she tries to produce life, and will give a few more eggs before the end.

Broiler chickens are not kept in cages, not out of humanitarian kindness, but because they might scar the breast meat if they rub off their feathers. Unless organically raised, they are fed antibiotics, hormones, and even arsenic (which increases their appetites) in order to hasten their growth. They must be slaughtered at seven weeks of age. Their growth is so rapid that often their legs break and their hearts stop before the slaughter date.

Henning and I once tried to raise some Cornish cross hens. Because our chickens run around outside all day, they are muscular; they make excellent broth, but their meat is impossible to chew. Hungry for fried chicken, we got a dozen Cornish cross chicks, and tried to raise them naturally. Because these chickens are over bred – bred strictly to grow fast and produce tender meat, they have no immunities. So we built them their own little pen inside the chicken run, and fed them the same home cooked meals our laying hens get – ground barley, fresh vegetables, cooked potatoes, and table scraps. These chicks

were the sweetest little birds I'd ever raised. They had trusting, gentle natures, and funny, croaky little voices. But they did not act like chickens. They did not forage for food. They did not run around. They did not establish little hierarchies among themselves. They did not take dust baths or sun baths, or have much to say to each other. And, sadly, some of them could not defecate. I will spare you the description of how I helped them. But it was awful to watch their beaks and combs grow pale, and see how listless they became. We were not giving them antibiotics, nor high-powered commercial feed, and they were not bred to survive in the natural world. We managed to take six through to maturity. I have no memory of eating them. The whole experience was too sad.

The overall picture of CAFOs is an ugly one. Thousands of pigs in a single building, each in a cage so narrow it cannot turn around. Because they are bred to produce lean meat, (a big selling point in fat-conscious America), their natural hardiness is bred out of them. When a stranger enters the building he or she is met by the screams of terrified, overstressed animals. They may be reacting to the HazMat suit that the visitor is required to don before entering the pig building. These animals have no immunity to disease.

CAFO cows, just like factory-farmed pigs and Cornish cross hens, are bred to be producers of profitable foods, far from the way nature created them to be. Cows should eat grass. They have four stomachs that allow them to produce protein from cellulose. In natural circumstances, cows graze, ruminate, and fertilize their pastures with their manure. CAFO cows are bred to process unnatural feeds – cardboard, stale pastry, grains, and feed concentrates. They stand crowded in feedlots up to their knees in their own manure, do not move in pastures, raise their young, or in any other way, live out their lives as cows should. They, too are pumped full of antibiotics to prevent the spread of disease.

Indeed, half of the antibiotics produced in America are administered to dairy cows, and a good percentage more are administered to chickens and pigs. You get them in the milk, eggs, and meat. As a result, the number of antibiotics effective against infections in humans is diminishing rapidly.

There are other health concerns relating to CAFO animals. The lethal strain of e-coli bacteria that has appeared in apple juice, beef, and most recently, spinach, was unknown before 1982 – evidently it evolved in the guts of feedlot cattle. Grass-fed cattle are not susceptible to that strain. The Centers for Disease Control and Prevention estimate that our food supply now sickens 76 million Americans every year, putting more than 300,000 in the hospital, and killing 5,000.

In Japan, every animal that goes through a slaughterhouse is carefully inspected. In our own county, a USDA inspector travels with the Mobile Unit that goes from farm to farm and slaughters animals on site. The inspector, (who loves coming to Lopez, by the way, because the animals are so healthy here) evaluates the condition of every animal in the field, and inspects each carefully after it is slaughtered. So local folks buying local meat know that it is safe. In commercial slaughterhouses, the focus is not safety, but speed. Beef slaughterhouses process five thousand head of cattle per day. USDA inspectors, if present at all, are not allowed to stop the line. If an inspector sees a visibly diseased animal go through the line, he or she can tag the animal, and hope someone on the other end will take note, but that is all.

The people employed in these slaughterhouses have the most dangerous jobs in America. Because of the speed with which they must work, and the repetitive motions they use, they suffer lacerations, loss of limbs, broken bones, torn muscles, slipped discs, pinched nerves. Every year one quarter of the meatpacking workers in this country – about forty thousand men and women – suffer a serious work injury or illness. Thousands more go unrecorded. Workers are discouraged from reporting injuries, and many avoid doing so for fear of being fired. Only about one-third belong to a union that could represent their interests. Most of the non-union workers are recent immigrants, many are illegals, and many are hired “at will”, meaning they can be fired without warning, for any reason. Government oversight of plant safety is so minimal that a single plant can expect a visit from an Occupational Safety and Health Administration representative once every eighty years.

The issue of social justice extends throughout the industrialized food system. When you look at cucumbers raised on commercial farms, think of the people who harvested them. Chances are, they came from Mexico or Central America, leaving hometowns and families, probably crossing the border illegally, at great cost and danger. They work for less than minimum wage. They take in insecticides and pesticides through their skin. Usually, in the camps they live in, there is no hot water to wash those off, and they and their children get sick from eating food from the fields.

Understand one thing: we bring them here. NAFTA, the North American Free Trade Agreement, created a treaty through which all protections for local producers were eliminated. United States agribusinesses, subsidized by our tax dollars through the Farm Bill, dump cheap corn into Mexican markets, at a price with which local farmers cannot compete. Since the inception of NAFTA, ten million farmers in Mexico alone have lost their land, and must come to the United States and pick our crops in order to support their families.

The health, environmental, ethical, and social costs of the industrialized, corporation-run food system are high. But the bright side of this dark picture is that each of us has a choice. Not only can we buy local foods, but we can also change the system. Consumer demand puts organic milk and meat and fruits and vegetables on the shelves of grocery stores, and on our plates in restaurants. We have plentiful examples right here on Lopez.

When you buy local foods,

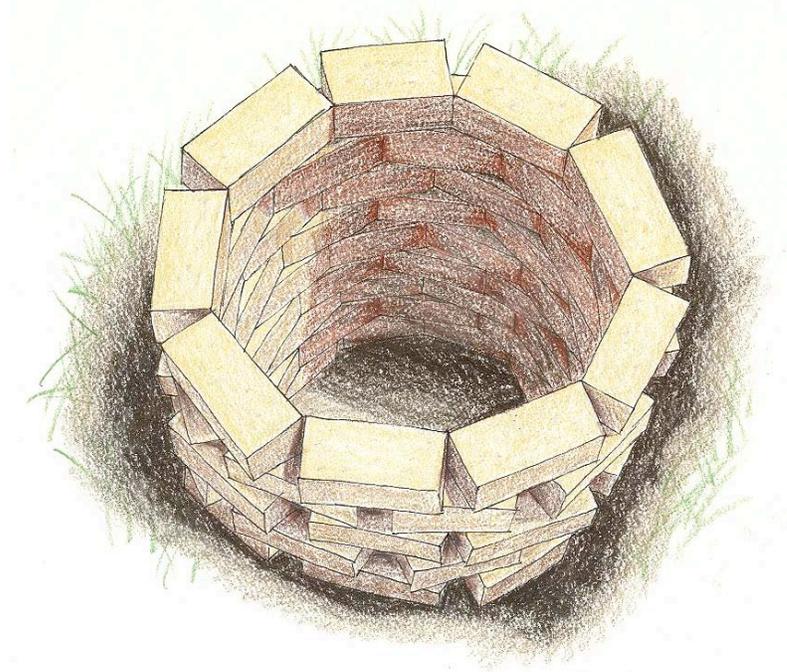
- The food travels from the farmer’s hand to yours, not thousands of miles;
- You have a personal relationship with the farmer, and you can see how the food is grown and how the animals are raised;
- You strengthen the food security of your community;
- You help to preserve the open spaces and complex ecology that farms create;
- You avoid pesticides, herbicides and genetically modified foods that may have unforeseen consequences for human and environmental health;
- You help preserve a local farming economy;
- You cultivate a local food culture.

This last point is especially interesting. In his latest book, *The Omnivore’s Dilemma*, Michael Pollan points out that Americans who are not recent immigrants to this country have no particular food culture. There is no tradition to tell us what to eat and

how to eat it. People who grow up in a strong food culture, such as the French, know, for example, to buy fresh and local foods, and to eat them at a carefully set table, slowly, spiced with lots of conversation. The practice of “grabbing” a muffin and a latte and consuming them in the car on the way to work is surely a habit that inhibits healthy choices, the pleasure we should take in food, and a healthy digestive system. Mainstream America’s lack of a clear food culture numbs us to issues of health, the environment, ethics regarding the treatment of animals, and makes us prey to fad diets, fast foods, and the devaluating of eating as a communal and celebratory act.

Fortunately, all across America, small farms are providing wonderful fresh foods to people through farmers’ markets, farm stands, CSAs, local restaurants, and grocery stores. (These are, interestingly, under the radar – the census does not even list “farmer” as a possible occupation any longer. But they are there.) And they are here. Look around. San Juan County is the only county in Washington where the number of farms has increased in the past twenty years. And Lopez, the most rural of the large islands, has a growing population of people who move here to farm, and young families who take up farming, because there is support for them here.

We all have a choice about what to eat, and on Lopez we have a food culture and a community tradition of making local foods the centerpiece of our celebrations. There is more that we can do. We can cultivate a garden, or a gardener. We can choose local greens rather than greens bagged in plastic from California. We can take our children to a local farm and show them where their meat, and milk, and fruit, and vegetables, come from. I want to thank the organizers of this event for bringing us together, and making us aware of the power of our choices.



The Seasonal Kitchen

This part of the Food Book is dedicated to Laurie Parker, who requested it. She asked for a section that would teach folks “How to bring garden, kitchen, and life into wholeness and order.” Laurie is a filmmaker, and travels a great deal. She cannot maintain a complete garden, but she wants to feed her family well.

This section is predicated on the assumption that everyone can cultivate a salad garden and annual and perennial herbs. Even if you have no land to till, you can grow your own greens year-round, using containers on your deck or in your yard in summer, and cold frames in winter. The resulting greens will give you fresh salad and herbs all year, and are well worth the effort.

January

Raising food is really a four-season adventure, as you will find when seed catalogs begin arriving in winter. Be sure that the seeds you buy are suited to your growing zone, and that you can provide seedlings and plants with the environment they need in order to thrive.

Plan your growing spaces, be sure the soil is well prepared, and that you have shade, sun, and fertility as required.

Think about the greens available in your grocery store, long out of the soil, drained of nutrition, and possibly covered with pesticides, herbicides, and fungicides. Remember that leafy greens are the first line of defense against macular degeneration, heart disease, and cancer. Then choose seeds for all kinds of greens – chard, lettuce, mache, spinach, sorrel, arugula, mustards and kale, for example, that will give your family healthy greens all year long. Space is not a problem, because all of these plants are “cut and come again”. You can harvest the mature outer leaves, or cut the whole plant one inch from the base, and the plant will continue to grow.

Join a CSA to obtain the vegetables you cannot grow yourself. Since farmers start planning and ordering seed in winter, it’s a good time to stake your claim. No CSAs available? Contact a local farmer or gardener to see if you can purchase shares from them, ideally in exchange for labor. Contract for large amounts of organic “keeper” vegetables, such as winter squash, potatoes, onions, shallots, and garlic, which you can harvest in the fall and use all winter.

February

Your seeds have arrived. Start them in an appropriate place – many folks raise seedlings on their living room floors under a window. Until Henning built our greenhouse, I raised melon seedlings, which require warmth, on our heated bathroom floor.

Think in terms of a year-round garden. Construct cold frames, which can be used for hardening-off boxes in the spring, and growing pits for greens all winter long. (Elliot Coleman, in *the Four Season Garden*, gives specific instructions for building these boxes.)

Start sprouting seeds. I have a nifty seed sprouter that sits on my kitchen counter all year, but you can sprout seeds in a quart jar with cheesecloth or a metal screen -- anything that will allow you to rinse and drain the seeds every day. Seeds for sprouting can be purchased through catalogs, or at natural food stores. Unfortunately, alfalfa and mung beans, the most popular sprouts, both produce mild toxins, but I have found that red clover seeds produce the same tasty, crunchy green sprouts as alfalfa sprouts, and provide an impressive array of vitamins and proteins. I use sprouted seed on salads, wraps, and sandwiches, all year long.

Start baking your own bread. You can make a simple French bread dough in about ten minutes, using white or wheat flour. This dough can become French bread, foccacia, hamburger buns, and pizza crust. Other breads require more time, but you can make multiple loaves, and your breads will contain all kinds of great-tasting, wholesome ingredients. (See *Bread Section* in this book for recipes.)

March

Transplant seedlings to four-inch pots. Have hardening-off boxes (to double as cold frames) ready. When the seedlings are strong, harden them off in the boxes, so they are protected from wind but will get used to changes between day and night temperatures. You will be eating your own greens in a month.

If you do not have a freezer, buy one. If you do have a freezer, go through it. Time to eat up (or make into jam, jelly, or juice) all those plums and berries you lovingly froze last year. Fresh strawberries will be available in June, raspberries and blackberries close behind.

Contact a local farmer to purchase grass-fed lamb and beef, and organically raised chicken and pork. We slaughter beef and lamb in June, when the animals are nicely fattened on spring grass, and pork in November. We slaughter chickens in spring, when the roosters have begun to harass the hens. Know your farmers and their methods of raising and slaughtering meat. Often, you can choose the specific animals you want.

Plant rhubarb. It's a great vegetable, and one plant will serve you nicely. It can reside in a corner of your yard – deer will not eat it because the leaves contain tannic acid. (You shouldn't eat them, either, nor put them in your compost pile.)

April

Seed a second round of greens, especially those that you eat every day, such as lettuce. Plan on needing more lettuce that the “cut and come again” method will supply. Lettuce should be seeded every three or four weeks. Succession planting is hard to remember, but it is painful to pull the last head of lettuce from your container or bed and think “Whoops! Where's the next one?” Put seeding on your appointment calendar and stay on top of it.

Start making your own salad dressing. Bottled dressings are often full of trans fats, sugars, and preservatives, and their artificial flavors overwhelm the subtle, complex flavors of your greens. A simple vinaigrette, composed of olive oil, vinegar, honey, salt,

pepper, mustard, and garlic, takes only a few minutes to make, and is wonderful over salads, on bread, rice, or potatoes.

Start flower seeds. I start mine in the greenhouse and transplant the seedlings in May. Choose your varieties carefully, because some require special handling – such as scoring, freezing, or soaking – before they will germinate.

If you have a garden, interplant flowers with your vegetables: I plant nasturtiums with tomatoes (the nasturtiums draw off aphids, are edible, and dress up a salad wonderfully), marigolds between brassicas (they ward off pests) and other flowers that have color and scent to draw pollinators and delight the heart.

May

Purchase herb seedlings from a local nursery. You can grow your own herbs from seed, but some herbs are difficult to raise from seed, and most of the ones you want are perennials, so you will have a one-time investment in them. Once they are in the ground, (or window box, or containers on your deck) they will last for many seasons.

We grow herbs in a dedicated bed in the garden, interplanted with annual and perennial flowers. I find basil, parsley, sage, rosemary, thyme, tarragon, chives, and oregano, indispensable. For ease of access, I also have a rosemary bush, and parsley and chive plants, in a growing pit that is part of the “mud room” entry to our house, just off the kitchen. It is wonderful to slip out there at the end of meal preparation, and cut fresh herbs for whatever dishes I’m serving.

June

Gain access to raw milk. In June, because of fresh grass, cows give milk rich with cream, and raw milk from a grass fed cow will give you butter, buttermilk, ice cream, yogurt, whey, sour cream, cottage cheese, and other homemade cheeses. (See the *Dairy* section in this book for a full discussion of the benefits of raw milk.)

In some states, raw milk is available in natural foods stores. Certified dairy farmers can sell you raw milk directly. Uncertified dairies might offer “cow shares”, wherein you purchase a share of the cow, and pay the farmer to feed, care for, and milk her. Another possibility is joining a co-operative, where you provide feed for the cow, and, one day a week, care for her, milk her, clean up the milking stall, and take the milk. You will find that raw milk, and the products you can make from it, far superior to commercially produced milk, and your grocery bill will shrink noticeably.

July

Start preserving food for the winter. You *can* eat peas in December, salsa in February. If you aren’t raising the foods you would like to preserve, you can contract for

them. Farmers who sell to grocery stores, at farmers' markets, and to restaurants will always have fruits and vegetables that are cosmetically imperfect, and would probably be happy to sell them to you for a discount.

The basic equipment, such as freezer bags and a water bath canner, is relatively inexpensive. The food dehydrator, juicing equipment, and pressure canner are expensive, but if you regard them as lifetime tools, their cost spread out over years, they are a good investment. Before you purchase any of these new, look around. Many people have canning jars that are taking up space, or grandma's old pressure canner sitting in the attic. Really expensive items, like our cider press, can be shared. A community "pressing," where everyone brings their apples and pears, share the work and the resulting cider, can be a yearly event.

Every year, I freeze

- Strawberries, raspberries, and blackberries
- Corn
- Peas
- Marinated artichokes
- Pesto

I make juice from

- Red currants
- Black currants
- Apples
- Plums

Tomatoes become

- Basil and tomato sauce
- Salsa
- Catsup
- Chili sauce
- Crushed tomatoes
- Tomatoes dried with basil
- Whole canned tomatoes

Cucumbers give us

- Sweet pickles
- Dill pickles

Cabbage becomes

- Sauerkraut
- Kim chi

Tarragon makes wonderfully flavored vinegar.

Yes, it's a lot of work. I call it "the race with rot", as the pickling cucumbers threaten to get too large, the tomatoes too soft. But it is well worthwhile. The berries can be eaten for their own sweet sakes, or made into jam. Marinated artichokes adorn salads, foccacia or pizza, or become part of a spicy sauce for pasta. Pesto is an instant pasta sauce, thinned with a little white wine and topped with Parmesan.

In winter, I am grateful for the race with rot, all the canning, freezing, pickling, jamming and juicing, when I can pull a jar off the shelf or a package out of the freezer

and have half the meal done. I only have to read the labels of many commercially canned foods, such as catsup, to be glad I make my own.

August

Make broth. Any butcher can supply you with bones from a grass fed cow, and the process is very simple. I just fill a big pot with beef bones and let them cook slowly for about three days. Adding a little white vinegar will help extract the marrow. I pressure can what we don't use immediately. I used to fuss about broth, adding all kinds of vegetables, herbs and spices, but found that the broth is actually better if you leave it alone. The flavor will come from the fresh vegetables, herbs, and spices that you add when you make soup.

The fat from the broth is an important source of nutrition and flavor. Saturated fats have been demonized in our culture by being linked to heart disease. However, the science behind that claim has been called into question, and fats from animal sources are essential to the health of cell membranes, bones, the liver, the immune system, and the digestive system. (See *Nourishing Traditions* for a full discussion of the importance of fats in our diet.)

September

Make fermented foods, such as sauerkraut and kimchi. Fermentation is one of the oldest forms of food preservation, and one of the best. Fermentation preserves food without cooking it, so all of the enzymes remain. Fermentation also breaks foods down into more easily digestible forms, enhances the availability of minerals in the food, and creates new nutrients. (See *Fermented Foods* in this book for recipes and suggestions.)

October

Make your own pumpkin pie filling for the holidays. Be sure that the pumpkins you raise or purchase are intended for eating and not just carving. Cut the pumpkin into large pieces, clean out the seeds and membrane, place in a baking dish with a little water, and bake at 350 until the flesh is tender and can be scooped from the shell. Puree in a food processor, and freeze one-cup servings in plastic freezer bags. I resisted this procedure when Henning first presented me with a pumpkin and had that pie gleam in his eyes. I argued that you could buy canned pumpkin, so why bother to prepare your own? But then we were invited to Mark and Lois Brown's house for dinner, and Lois served a pumpkin pie that was golden and fragrant and delicious, quite unlike the brown, spiritless pies made from a can. Her recipe is below.

When the holidays roll around, prepare a crust for a 9-inch pie dish. The filling consists of

½ C sugar

1 C cooked pumpkin

2 eggs
1 T flour
¼ tsp ginger
¼ tsp nutmeg
½ tsp cinnamon
¾ C milk

Mix together pumpkin, sugar, and flour, and then add milk, eggs and spices. Pour into pie shell and bake at 425 for 15 minutes. Reduce heat to 350 and bake another 40 minutes, or until a knife blade inserted in the middle of the pie comes out clean.

November

November is the start of the big holiday that stretches on until after New Year's. I think our biggest achievement in the last few years has been to simplify, simplify, simplify. This was difficult at first, because, like many Americans, I thought that a Thanksgiving or Christmas dinner had to be elaborate, the table groaning with food. However, we were the ones groaning afterwards. So I made it a practice to use only the foods we had raised ourselves, and to keep the meal simple. Last Thanksgiving, I served ham, mashed potatoes, baked Delicata squash, green peas from the freezer, and pumpkin pie. I did not spend all day cooking, we did not have endless dishes to wash, and everyone rose from the table satisfied.

December

In anticipation of the growing season to come, tend your compost pile. On our farm, compost piles are not only a source of fertility for the gardens, but also symbols of wholeness. Years ago, Nils Benson gave us a painting he had done, which he called "Henning's Compost Pile." It shows a skull at the bottom of the pile, with living organisms making their way to the top.

Composting means that no chore stands by itself – everything is tied to new life. What table scraps cannot be recycled through the chickens and pigs go into composting containers in the house and barn kitchens. When we clean out the chicken house, the litter goes into the compost pile. We feed the heifer cows in the pole barn in winter, so that we can collect their rich manure. Twigs and branches from pruning rose and berry bushes and fruit trees are put through a wood chipper to make sawdust, and leaves raked in the fall provide mulch and compost for the flowerbeds.

In the winter, we sleep a little later, burn candles at every meal, eat fresh foods from the garden, and plan for the coming spring.

Meat

By Jenelle Kvistad, Intern, S&S Homestead Farm

I was a vegetarian before I came to S&S Homestead Farm. It's not the concept of eating meat that I have a problem with. We are part of the food chain. When I die, the worms will eat me. What I do have a problem with is the way our society goes about getting the meat we eat. Factory farming is a cruel and destructive industry that is not only destroying the environment, but is also destroying our integrity as "humane" humans. The reasons for adopting a vegetarian diet are varied. Some people feel they function better without meat, others practice a spiritual faith that doesn't condone the eating of certain flesh foods. Many people choose to be vegetarian because they can't in good conscience contribute to the practice of factory farming, nor do they have a source of meat raised in an ethically and nutritionally sound way.

Factory Farming

Nearly ten billion chickens, and half a billion turkeys, are hatched in the U.S. every year. These birds are typically crowded by the thousands into huge factory-like warehouses where they can barely move. Chickens are given less than half a square foot of space per bird while turkeys are each given less than three square feet. Both chickens and turkeys have the end of their beaks cut off, and turkeys also have their toes clipped. These mutilations are performed without anesthesia, and they are done in order to reduce injuries that happen when stressed birds are driven to fighting. Most broiler chickens are now genetically altered and fed steroids to make them grow at abnormally fast rates. This results in high death rates due to the fact that the heart and lungs cannot keep up with the growth of muscle. They also develop weight that the legs cannot support and the chickens often collapse, never to get up again.

Egg layers are also subjected to many cruel practices, such as "forced molting" in which they are denied food, water, and light for up to 20 days in order to shock their bodies back in to production. Many birds die and are cannibalized by other chickens.

The example of chickens has been used here, but the story is the same across the board for all animals living in a factory farming situation. Beef cattle and dairy cows, veal calves, geese, pigs, and sheep all are subjected to the cruel practices of the industry.

Many animals don't make it from the factory to the slaughterhouse, due to long truck rides without food and water and without shelter from cold, heat, and wind. The ones that don't live, or who are too weak to walk off the truck by themselves, are called "downers". These are animals that by industry standards are *not considered fit for human consumption*. The carcasses are used as pet feed or livestock feed (which is a practice that is declining due to the threat of "mad cow" disease, E. coli and "foot and mouth" disease). Many of these "downers" are sold for human consumption, even though the animals might be severely diseased. There have been campaigns mounted to end this practice.

The slaughtering techniques of factory farmed animals are horrendous. Because of the highly mechanized systems, many animals miss the blades or stunning machines and are not killed immediately. They suffer painful, prolonged deaths. There is not a system in place to humanely accommodate such a large number of killings.

There is a human labor issue to the factory farming debate as well. Despite increased automation, meat, poultry, and fish processing remain labor-intensive. Today's major food-processing companies still draw their workers from among minorities, new immigrants, refugees, and women. According to the Occupational Safety and Health Administration (OSHA), meat-, poultry-, and fish-processing jobs are among the most hazardous in America. A principal cause of excessive injury is the speed of the disassembly line along which carcasses are processed.

Food processing workers rarely earn a wage sufficient to support their households. Gross annual incomes from meatpacking jobs usually fall a few thousand dollars above or below federally established poverty levels; income in poultry processing is less, while in fish processing earnings can fall to half of poverty levels.

Another labor issue concerns contract farmers. Large corporations that market chickens, for example, contract out the raising of these birds to small farmers, often retired couples looking for supplementary income. The contract system sounds good: the corporation supplies the eggs and feed, and guarantees to purchase the grown birds when they are ready to slaughter. However, the contract farmer must build, at his own expense, facilities according to the specifications of the corporation. If the corporation determines at a later date that the farmer needs to upgrade the facilities, such as adding a new ventilation system, this, too, is at the farmer's expense. If the farmer does not follow specified procedures, (such as killing all baby chicks that can't hop high enough to get to the elevated water troughs) the corporation stops delivering feed, and will not buy the birds. The farmer may be left with thousands of feathery corpses on his hands, and with serious financial debts.

Human Health Concerns of Conventionally Raised Meat Products

Diseases spread quickly among animals kept in close quarters. For this and other reasons, conventionally raised animals are pumped full of antibiotics and growth hormones to keep production as high as possible. We then ingest them from the meat, eggs, and dairy products we eat. Nursing mothers transfer these harmful antibiotics and hormones to their children in concentrated doses.

The growing concern about antibiotics, hormones, and chemicals used by non-organic animal farms is becoming widespread. But it is not spreading fast enough! People are getting sick, even dying, from things that science long ago found "cures" or vaccinations for. These include TB, strep infections, even secondary infections from fractures and wounds! These viruses and bacteria are mutating to become resistant to the

antibiotics that usually protect us. The growing belief is that this is a direct result of the abundance of antibiotics found in our food supply.

** There is a discussion on nutrients in each individual meat section. Here are some general things to keep in mind: Meat is a protein and does not contain carbohydrate or fiber. Different cuts of meat provide slightly different levels of nutrients. Sausage and other processed meat products will contain much more sodium, and possibly fewer nutrients than unprocessed cuts of meat. The sources used for nutritional information uses non-organic products. There are some emerging studies showing that organic food is nutritionally superior to non-organic.*

Some Thoughts on Eating...

By Jenelle Kvistad, B.S., Nutrition (Intern, S&S Homestead Farm)

In this age of nutrition information, we are both blessed and cursed. On one hand, we now understand more about the biochemical processes in our bodies that make us tick, or not tick. There is a wealth of information for us to choose from when deciding how best to eat. On the other hand, we have lost the ability to think for ourselves and to listen to the needs of our bodies. Despite all the research on proper diets and the marvels of modern food production technologies, as a nation we are dealing with alarming levels of heart disease, obesity, diabetes and other major nutrition related-diseases. We are eating severely nutrient-deficient food that makes our bodies crave *more*. We then eat *more* processed non-food. And so the cycle continues. We are *over*-eating, yet we remain *under*-nourished.

We grow up being told that eating *right* is important, vegetables are *good* for us, and will make us *strong* like Popeye the Sailor Man. But what does eating “right” mean? What is so “good” about vegetables? What does it really mean to be “strong”?

Eating “Right”

In many ways, this is the most difficult aspect of eating to define. Factors involved can include: how environmentally responsibly the food was produced, processed, and transported; the conditions experienced by all the food workers involved; the genetic affinity we have to our ethnic foods; health conditions and diseases that require us to eat a lot of, or stay away from, particular foods; and spiritual or ethical beliefs that speak to our souls about the appropriateness of what we put in our mouths. As you can see, eating “right” in this day and age is not a simple task!

Many of us ignore this task and go about eating whatever is most convenient and tastes somewhat decent. This casual approach to eating causes more damage than we may realize. Some of us go to the other end of the spectrum, taking eating so seriously that we label ourselves vegetarian, vegan, raw-foodist, lacto-ovo-vegetarian, macrobiotic, fruitarian -- the list goes on. The most important aspect of eating is that we eat with a conscience. Get educated about all parts of your food system, global, national, and local. Then make decisions based on what feels right to you. You have the power to make serious political and ethical statements just by the food you put in your mouth!

The “Goodness” of Vegetables and Other Whole Foods

When determining if a food you are about to eat is a *whole* food, there are a few things to consider. How close is it to the state it is found in nature? How many ingredients does it have? A carrot that has been shredded, combined with processed grains, preservatives and other ingredients, then vacuum-packed in plastic and sold as a

“healthy” bran muffin, is not a whole food. Vegetable oils and fruit juices are not whole foods, they are only a part of what was once a whole food. These partial foods can still be healthful, as long as your diet consists *mostly* of whole foods.

This is not to say that you can’t be creative in working with the whole foods that you get. Evelyn Roehl in her book *Whole Foods Facts*, says that whole foods “encompasses a *whole cuisine* – a diet consisting of whole foods, and the ways of preparing them to gain the most nutritional and culinary benefits.”

Vegetables and other whole foods contain within them components essential to life. These components include macronutrients (fats, carbohydrates, and protein) and micronutrients (microminerals, macrominerals, and vitamins).

Fats

It is unfortunate that we are so afraid of fat in this culture. *We need fat!* Without it, none of the cells in our body could function because fats are essential components in membrane structure. Fats transport the lipid-soluble vitamins A, D, E, and K through our bodies. They are vital components in our cell membranes and provide padding and insulation around our vital organs, protecting them from trauma and temperature extremes.

It’s the type and quantity of fat that we eat that determines appropriate intake. Our bodies need three essential fatty acids: linoleic acid (LA), linolenic acid (LNA), and arachidonic acid.* We get these only from our diet. Concentrating on getting these essential fatty acids in our diets is just as important as limiting saturated and hydrogenated fats. The liver makes cholesterol from saturated fats; therefore, saturated fats and hydrogenated vegetable oils (which contain high amounts of saturated fats in place of their once polyunsaturated ones) raise serum cholesterol.**

Fats also move flavors around in a prepared dish. So don’t be shy! Learn how to use fats and oils properly and your body and tastebuds will thank you.

**For more information on the benefits and sources of essential fatty acids, see the “beef” section.*

*** For more information about cholesterol, see the “egg” section.*

Carbohydrates

Carbohydrates are our main source of energy and should constitute the majority of our diet. Unfortunately and unfairly, carbohydrates are fast on the heels of fats as our culture's most feared dietary component. It cannot be argued that our brain prefers glucose as fuel and glucose comes from the breakdown of carbohydrates. The real villain is not the carbohydrate itself, but the shift in our culture away from complex carbohydrates to refined and simple sugars. Complex carbohydrates are starch and fiber foods such as fruits, vegetables, and whole grains. These provide stable blood sugar levels as opposed to the rise and fall levels of sugar and refined flour products. It makes so much more sense to gravitate away from the refined sugar and flour products that promote disease and obesity rather than to cut out *all* carbohydrates, including the important complex fibers.

Proteins

Chemically speaking, proteins are complex molecules made up of a combination of 22 naturally occurring amino acids. Proteins perform many functions. We need them to build all the tissues in our body, for our bodily fluid and salt balance, acid-alkaline balance, and energy. They also help build important substances, such as enzymes, hemoglobin (the iron-bearing protein in the red blood cell responsible for oxygenating our bodies), hormones, and antibodies.

Amino acids are grouped in to categories of essential, semi-essential, and non-essential. The eight essential amino acids are: isoleucine, leucine, lysine, methionine, phenylalanine, threonine, tryptophan, and valine. These we must get from our diet. There are lots of conflicting opinions out there about adequate protein intake for humans. It has been said that vegetarians must combine their foods correctly in order to get all the essential amino acids in one meal, hence the popular "beans and rice is nice." New information is coming out to say that we do not need to worry about eating all the eight essentials in one meal, that as long as we get a varied diet we will get adequate amounts. One thing is for sure, we do *not* need the gluttonous amounts of protein that most North Americans consume on average. Symptoms of excess protein consumption include acidic blood, calcium deficiency, and a tendency to carcinogenic and other degenerative diseases. It is quite ironic that while we are seeing these signs of protein overload in our culture, there are still hundreds of millions of people in other countries dying from kwashiorkor and marasmus, two serious protein deficiency diseases.

Micronutrients

We are more likely to be deficient in essential minerals than we are to be deficient in vitamins. This is due to the fact that commercial farming erodes topsoil and removes minerals from the soil, replacing only nitrogen, phosphorus, and potassium in the form of chemical fertilizers. The food we grow is only as good as the soil in which it was grown. Commercial agriculture employs practices that literally "kill" the soil, thereby creating a

“dead” product. Also, industrialized food is likely to be fortified mostly with vitamins along with some minerals, like calcium. Furthermore, if the mineral or vitamin is not in a form that is bio-available to the body, then it does no good to dump a bunch of it in to a product because it won’t be absorbed by the body.

Iron is one of the most finicky micronutrients when it comes to bio-availability. This mineral is a good example of how important it is to eat a varied diet. If we lack iron, we will not get adequate oxygen to our cells due to decreases in hemoglobin. Iron deficiency anemia is a common problem, especially in childhood, youth, and for women in their child-bearing years (due to loss of blood through menstruation and increased needs during pregnancy). Anemia can result in functional impairment of the body, reduced work capacity, behavioral and intellectual impairment, reduced resistance to infection, and impaired temperature regulation. There can be problems with too much iron intake as well. It occurs mainly in men and post-menopausal women because they do not shed iron in menstrual blood. Excess iron in the blood may increase the risk of atherosclerosis and heart disease. The mechanism for this is not yet known, but is thought to be associated with increased oxidation and free-radical formation.

As you can see in the box to the right, there are many factors affecting the absorption of iron. Average iron absorption is 8-10 percent of intake. Iron from flesh foods (heme foods) is more readily absorbed than iron from non-flesh foods (non-heme foods), being as high as 10 to 30 percent. Phytates in whole grains and oxalates in certain vegetables, like spinach, bind with iron and make it unusable by the body. This is why some vegetarians have trouble getting their iron needs from diet alone. The absorption of iron is a slow process, so a high-fiber diet can decrease absorption due to fast intestinal transit time. This is not to say that a person should not eat fiber! Nor is it being suggested that no one adopt a vegetarian diet. The point is that it pays to have some knowledge of how your body relates to the food you eat. Each nutrient has its own preferences for being absorbed and getting to know all of them can seem like an unrealistic and daunting challenge. Be at ease! There is an answer. Getting a *variety* of fresh, locally grown, organic food is a huge part of staying healthy. Eating a variety of colors means you are getting a variety of vitamins. Having some green chives and parsley on your eggs in the morning, some red cabbage and carrots on your salad for lunch, and cauliflower as your dinner vegetable is a good example of eating from the rainbow. Elizabeth calls it “health insurance.”

IN INFORMATION BOX: (taken from “Staying Healthy with Nutrition” by Elson Haas)

FACTORS AFFECTING IRON ABSORPTION

INCREASED BY:

- ◆ *Body needs during growth, pregnancy, and lactation*
- ◆ *Hydrochloric acid*
- ◆ *Vitamin C*
- ◆ *Blood loss or iron deficiency*
- ◆ *Meats (heme iron)*
- ◆ *Protein foods*
- ◆ *Citrus fruits and vegetables*
- ◆ *Iron cookware*
- ◆ *Copper, cobalt, manganese*

DECREASED BY:

- ◆ *Low hydrochloric acid*
- ◆ *Antacids*
- ◆ *Low copper*
- ◆ *Phosphates in meats and soft drinks*
- ◆ *Calcium*
- ◆ *Phytates in whole grains*
- ◆ *Oxylates in leafy green vegetables*
- ◆ *Soy protein*
- ◆ *Coffee and black tea*
- ◆ *Fast gastrointestinal motility*

Strong, Like Popeye the Sailor Man

Ever wonder why Popeye would open a can of spinach when he found himself in a bind? Well, spinach contains iron, which is needed for all kinds of biochemical processes that make us strong. Popeye *should* be downing a fresh spinach salad, with locally grown hazelnuts, farm-fresh eggs, and spinach just picked from the dirt, but the point is that food contains within it all the components essential to life. So when our kids say “Blech! I don’t like spinach!”, tell them that it will make them able to play longer and run faster.

Water

Water covers (?) percent of the earth’s surface. The human body is two thirds water. Most fruits and vegetables are over ninety percent water. Water is essential to all forms of life. We are constantly expelling water through urination, perspiration, and respiration. We must take care to replenish our bodies of this invaluable nutrient. I immediately notice when I become dehydrated: my throat becomes scratchy, I develop a headache, and a bit of an attitude. I used to work at a health food store selling vitamins. So many people have approached me with the question, “What can I take to improve the way I feel? I seem to be a bit on the lethargic side.” More often than not, I find that they are not taking in adequate amounts of water. I tell them to drink water often and in between meals, then come back if they are still feeling the same and we can talk vitamins. Never saw a one again.

People with diets high in animal products and salt require more water intake. Those who eat mostly vegetables, fruit, and sprouted foods require less. Climate is also a factor. Those living in dry, hot, and windy areas require more water than those in cold and damp climates. Nutritionally, it is best to not drink large amounts of water with your meals because stomach acid and digestive enzymes will be diluted and your food will not be properly digested. Drink water one half hour before or one hour after you eat your food.

Handling Your Fresh Produce

Micronutrients can be enhanced or destroyed by how we grow, harvest, process, and store the foods we eat. The food grown in mineral-deficient soil will be deficient in those minerals. A head of lettuce may be fresh and full of nutrients the day it is picked, but if it has to travel from California to Lopez Island, it will likely lose many of the vitamins that were once available. Broccoli is an amazing vegetable full of vitamins, but if you boil it for 10 minutes in water, most of them will leach out or be destroyed by the heat. Having some basic knowledge about how to properly handle fresh produce is essential to reaping to benefits of the food.

There is specific information about handling individual foods on the pages dedicated to them in this book. In general, you want to focus on cooking your vegetables

just long enough to make them tender without reducing them to a mush. Cutting your vegetables too small creates a greater surface area for nutrient to leach out (which isn't an issue if you are using the water, as in a soup), cutting them too big subjects the heat-sensitive nutrients to a longer cooking time. Aim for medium size chunks. Steaming and sautéing are generally better than boiling because there is no water for the nutrients to leak in to.

The Raw and The Cooked of It

To cook or not to cook? Eating a variety should apply to food preparation as well as types of food. Raw foods contain more nutrients and enzymes than in their cooked form. Some foods, however, such as broccoli, are more difficult to digest and cooking makes them easier on our system. Grains, nuts, and seeds can be soaked or fermented rather than cooked, which helps them retain enzymes and heat sensitive nutrients. But, again, eating a variety of cooked and raw foods will ensure that you are getting a wide range of nutrients in their absorbable form. I enjoy too much a slow cooked soup and a loaf of fresh baked bread to ever become a raw foodist. I do, however, acknowledge the benefits of fresh, unadulterated fruits and vegetables.

Table Manners

For goodness sake, sit down while you eat! Too many people eat while standing at the counter! They crack open a can of this and a box of that, many times not even bothering to put it on a plate. They are robbing themselves of an opportunity to be fully nourished in that moment. Part of this problem is that our family units have become fragmented and we no longer respect the ritual of eating. We look at food as fuel and nothing else. When we eat, we must realize that we are not only renewing our cells, but also our spirits. Eat slowly and acknowledge the flavors. Eating can be a sensuous experience.

Sharing meals with family and friends is another important aspect of sustaining those relationships and further enriching the eating experience. Cynthia Lair, in her book *Feeding the Whole Family* says, "Deep in our cells we know that eating whole, fresh, natural foods is the best nourishment for body and soul. Eating whole foods can help feed the desire for wholeness within ourselves. This spiritual benefit is magnified when the entire family partakes of nature's bounty together. Not only are the individuals of the family enriched and nourished, the family is strengthened as well." Here on the farm, Henning and Elizabeth put great emphasis on the importance of a well-prepared meal. Elizabeth takes great care to plan meals and prepare the food that is grown here. There is always a dinner presented that far surpasses anything offered even at the finest restaurants.

Teach Your Children Well

Our farm has always been a favorite place for Lopez folks to bring their guests, especially visiting grandchildren. Those visits are an education for them, and for us, too. Some of our experiences with younger people showed just how de-natured their lives are, and how far most of them are from understanding the sources of their food.

- There were the two teenage boys who refused to get out of the car because they were afraid of getting their new white sneakers dirty.
- There was the young man who pointed to a cabbage growing in the garden, and asked, somewhat distainfully, “What’s that?”
- There was the little boy who tasted Loveday’s fresh milk, made a face, and said, “I only like store milk.”

Those responses range from annoying to alarming. Children who don’t want to get dirty. Children who have never seen vegetables growing. Children who have no idea how pure, unprocessed food tastes.

It was, in part, our experiences with these visitors that prompted us to create the Ecological Food Production class that we have offered to high school students for the past five years. The class is different every semester, depending on what is going on at the farm, so many students have taken it up to three consecutive semesters. Students come to the farm on Monday and Thursday afternoons, and work with Henning, or me, or both of us.

Henning teaches them about

- Rotational grazing, pasture management, and animal husbandry;
- Sustainable water systems that make use of rainfall catchment and solar power to irrigate gardens and orchards;
- Orchard care – pruning, propagation of berries, and care of fruit trees;
- Gardening – bed preparation, composting, the preparation and use of bio-sprays to enhance the immune systems of plants and the micro-biological life in the soil;
- Planting, direct seeding, and care of plants and beds;
- Sustainable use of farm resources, such as cutting and peeling logs for on-farm construction;
- The inter-connectedness of people, plants, animals, insects, and soil life.

I teach them how to

- Seed and transplant in the greenhouse;
- How to cook and bake from scratch;
- How to process raw milk into many products, including yogurt, butter and cheese;

- How to preserve foods, including freezing, drying, canning, and fermenting;
- How to look first to the garden, second to your shelves, third to your freezer, before going to the store;
- How to read labels to see what ingredients are in the processed foods available at the store. (Anything they can't pronounce they probably shouldn't eat.)

Both of us teach them

- To know where their food comes from;
- To pay attention to health, political, environmental, and social issues relating to food;
- To take joy in growing, processing, preparing, and celebrating food as part of family and community wholeness.

As a result

- Students have started home gardens;
- Students have changed the purchasing, cooking, and eating habits of their families;
- Students have made sustainable living the focus of their studies, publishing papers, creating senior projects, and choosing majors related to sustainability.

Early on, Henning and I aimed at changing the school cafeteria menu. Dana Cotten, the school chef, was happy to include our garden's greens in lunches. At the urging of our students, she soon went beyond requesting standard lettuces, and ventured into root crops, brassicas, and leafy vegetables. On Mondays, students would gather foods that they had helped to plant and grow, such as beets, kale, chard, lettuce, spinach, carrots, sorrel, cucumber, and mustards. During the week, they would go into the kitchen on their own time and help to wash and prepare the vegetables.

One of our students started a "Beef for Kids" campaign in the community, putting coffee cans in local businesses so that people could donate money towards the school's purchase of locally raised, grass fed beef, to replace the commodity beef supplied by USDA. In the years since this student's project began, the school has been able to obtain nearly all of its meat from local sources, and always notes on the monthly school menu that the beef in the hamburgers, tacos or spaghetti sauce is local and organic. Students don't want anything else now.

Dana attended an institute in Berkeley, California on providing healthy foods in cafeterias, and what she learned there has changed the school's food culture entirely, from the yogurt offered during nutrition break to the organic milk offered by the glass (not the carton), to the whole grained breads, pastas and rice they now serve. Students love the food, and the effects on their behavior and academic performance (soon to be measured by a study sponsored by Johns Hopkins) are already noticed by staff, teachers and administrators.

The change in the school menu from commodity foods to locally grown, organic foods was a long time coming, and not without difficulties. For the first four years we offered it, Henning and I struggled to have our course supported (or even acknowledged) by the school. We taught without compensation. We worked with administrators who gave our efforts lip service, but little meaningful input. Finally, a new principal and new superintendent took our ideas seriously, but could not squeeze funding from a tight budget for an ideal that most folks saw as quixotic. We needed an angel.

She arrived as Michele Heller, a local person who is concerned about global problems and determined to solve them locally. Her first move was to offer the district a high tunnel hoop house so that students could grow vegetables for the cafeteria. The school board responded with understandable concerns about funding, maintenance of the hoop house, and the impact on an overstrained curriculum. Henning and I offered to have the hoop house placed on our property, to provide water and fencing, and to locate a person who would help maintain it, and work in the district to create and implement a farm-to-school, farm-to-cafeteria program.

Henning and I wanted to turn our south field into a CSA, following our belief that this island can and should feed itself. We searched for a young couple to develop and run it, hoping that one of them would have the skills to bring farm, cafeteria and elementary school curriculum together. Jesse Pizzitola and Lisa Murgatroyd responded to our outreach, arrived at the farm a few days after school started, and plunged into the community and school projects with some farming experience and a lot of faith in what we were trying to do. Michele funded Lisa's position at the school. Rhea Miller, from the Lopez Island Land Trust, had built the beds in the hoophouse, brought in compost, and planted seedlings. Lisa took over from there. Her work in the elementary school and cafeteria were so successful that the LIFE (Lopez Island Farm Education) program became a model for school districts all over the country. (For details of Lisa's work, see her essay, "This is Not Just a Show Garden".

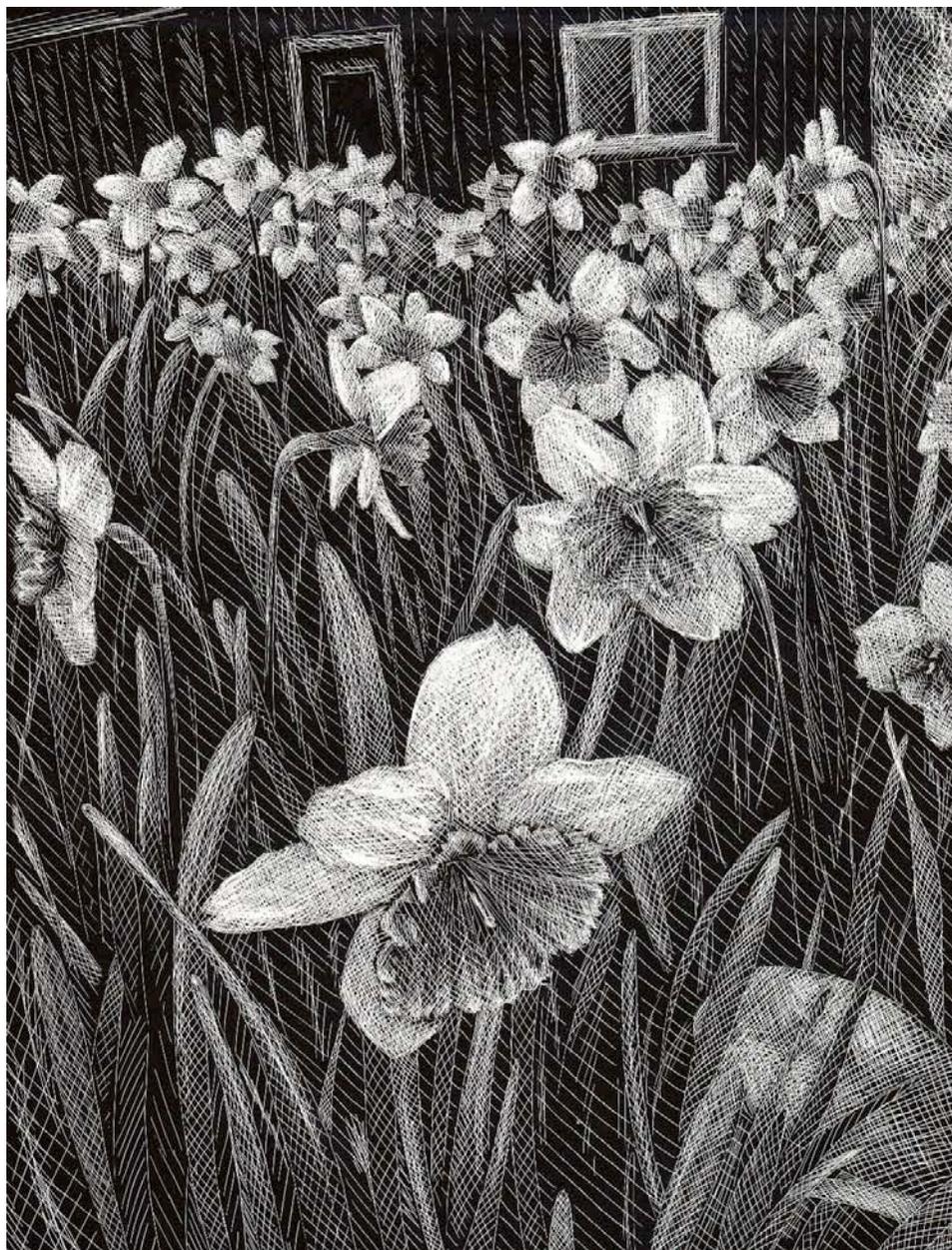
The school board, now convinced of the viability and usefulness of the program, gave staff time and school resources to advance the project. Laurie Parker, a film producer, made a pilot video on Lisa's and our work with students. Michele, Laurie, Lisa, Jennelle Quistad, Jean Perry and I produced two well-attended events on food issues.

In the winter of 2008, Michele instituted monthly community dinners. Two local chefs, Kim Bast and Jean Perry, plan menus of seasonal foods, purchase produce from island farmers, and create simple and delicious soups, salads, breads, vegetable dishes, and desserts from those foods. The cost is \$5.00 for adults, \$3.00 for children, \$15.00 for a family. On those evenings, the cafeteria is transformed: tablecloths and simple, handsome plates and bowls, table decorations, elegantly printed menus listing the foods, providing recipes, and identifying the farms that provided the produce. There is the hum of hundreds of folks talking, laughing, and eating. Usually, over 300 people are served, and the food is abundant.

The goal of these dinners goes beyond creating an affordable community feast: Jean, Kim, and Michele are downright subversive. They believe that when people taste kale sauteed with garlic, chocolate beet cake, pumpkin bread, leek and potato soup, they will learn how delicious simple, healthy foods are, and how easily

prepared; perhaps this experience will change the way they eat. Such a change would impact personal health, community economics, and global politics. Wendell Berry writes, “Eating is an agricultural act.” And also, “How we eat determines, to a considerable extent, how the world is used.”

Teaching students through the LIFE program, providing forums for community education and discussion, and feeding families at the community dinners, brings home in concrete ways, how people can become healthier, more self-sufficient, and less dependent on a wasteful and irresponsible global food system.



This Isn't a Show Garden

by Lisa Murgatroyd

I wake up every morning determined both to change the world and have one hell of a good time. Sometimes this makes planning the day a little difficult.

E.B. White

In my year at Lopez Island Elementary School, as the first garden-to-cafeteria program designer and educator, the best decision I made came the night before the first day of school: to always choose what would encourage personal investment by staff and students. This is the story of where that decision, and the hard work of everyone involved, led us.

That decision became a thousand other decisions that year. I have learned that my investment of time, emotion, or action is the path to meaningful ownership. When you feel ownership in something, whether it is a love relationship, a fight for civil rights, or dedication to a daily practice, that something becomes inseparable from your being.

I was certain that the new garden-to-cafeteria program would secure its future only when the whole elementary school felt it was theirs. We needed to reach a place in the school culture where the work of the program was housed on the fingertips and lips of every student and staff member, instead of on my makeshift desk, smooshed between the copy room and the teachers' lounge. From the beginning I had to believe that everyone could be inspired in some way. How? Where to start? How to gain access to the teachers' and students' time and make it time well spent? What would success mean to us? These were questions we worked through all year.

On the first day of school, I was a complete rookie. I didn't know what needed to be done. I didn't know the school or the community. I had never been a teacher or created a program, but here I was. It was baptism by fire. To my dismay, in endearing jest, the principal told me later that I had the look of "a deer in the headlights" the first few weeks of school. I walked into his office the first day and he told me two important things: "Find the seams in the culture of this school and see how your program can fit into them. You have to do that to make this work." And, "We don't have a lot of time to work with here. We have to teach a lot of other things, too, like the standards." I took this to heart in figuring my approach.

I knew to expect this in a public school: pressure to meet the standards, but not enough time or resources to do it. Teachers would be overworked and class time would be full before the garden-to-cafeteria program asked for anything. If the program was to survive, it had to become what was taught in school, not just something extra that took time away from everything else. The garden, farm, working with food in class, had to become a lens through which the standards in every subject could be taught.

To own the project, the teachers had to have a hand in designing it. So I went about assessing their needs, and the more effort I made to involve them, the more willing they were to make time for me. Including everyone in making decisions was messy at first: it's difficult to meet the desires of so many different individuals. But this approach paid off big time in the end. After preliminary meetings with each teacher and then collaborative meetings with the whole group, we created a structure for the program that worked. Our final plan, after several weeks of trial and rehashing sessions, defined my role:

- I would act as a resource to teachers, providing ideas and support for them to use the garden, food, and natural world as a lens to teach their subject standards.
- I would create and facilitate classes using the garden or food to develop specific themes they were teaching (i.e. learning fractions or the history of Lewis and Clark).
- I would help the kitchen staff incorporate student-harvested garden produce into their meals. I would co-ordinate weekly harvesters, prefigure harvest amounts, and find volunteer vegetable washers.
- I would provide weekly L.I.F.E. (Lopez Island Farm Education) lessons, incorporating the standards in interdisciplinary ways, while teaching students growing techniques and how to enjoy fresh, healthful food.

We scheduled care of the school garden together. The six beautiful kid-friendly raised beds would be cared for by all the classes on a rotating basis, an exercise in cooperation and shared responsibility. Each class would harvest or water for one week. We completed planting and other garden work during my weekly classes with students, and on other days when teachers felt compelled to get students outside and working. Every chance I got, I encouraged students' sense of ownership in the garden: "You guys, this is your garden to create and love. We can either make it beautiful or let it lie. In the end it is up to us to figure out how to do it together."

We involved the whole elementary school in determining the crops we would grow and where we would put them, preparing the beds, growing the seedlings, planting, and care. When it rained or was too cold, we worked in the classroom learning about food or cooking. Everything was an experiment, an adventure in teaching, learning, and growing food. We expanded the garden so that each homeroom had its own garden bed. I acted as support for teachers on their projects, encouraging their investment and creative impetus. Even the teachers who had never grown a plant in their lives took to their class gardens with vivacity and boldness. They created salad gardens, flower gardens, and even a French fry and catsup garden with a carpet of cover crop growing beneath.

After some experience with teaching their students in the garden, the teachers told me that they noticed that the students who had the hardest time focusing in the classroom excelled in garden lessons. This was exciting, though not surprising. University of Illinois studies show that the test scores of children who participate in outdoor learning, actively doing instead of listening to a lecture or reading a textbook, rise in every discipline, a whopping 27% in the sciences.

With new opportunity, there was also confusion. We had notable adventures in harvesting, for example. In one miscommunication, immature garlic was pulled up instead of chives being cut. Whole sections of chard and kale plants were pulled up instead of individual leaves being harvested, and cabbage plants cut instead of lettuce! This needed to happen. It was an educational garden, and served its function beautifully. I loved witnessing the process of personal discovery that kids and teachers experienced. They were reconnecting themselves to food. Day after day, a new moment in the garden or classroom would speak to someone, and they would become alive with wonder.

We found that with some creativity, we could fit gardening and food into any lesson. In math we learned ratios and fractions by making potting soil, about data tables and how to make line graphs by measuring the growth rate of garden plants over time, to make bar graphs by counting plant families, and about pie charts and percentages by experimenting with the composition of our garden soil.

In social studies we examined how farming is done all over the world and learned about what foods grow in different climates. We learned the geography of countries while mapping the migration of apples, cheese, and other foods across the world. To learn about colonial times in America, we made foods from ingredients that were important in Wampanoag and Pilgrim agriculture. We put on skits depicting the history of different important seed crops. Using apples as a model for the Earth's spherical shape, we figured exactly how much of the apple skin, representing the crust of the Earth, could actually support human life through the growing of food. The kids were amazed at the tiny ration of apple skin, smaller than a fingernail, on which we could actually grow food!

We enriched the language arts curriculum by integrating into it visits to S&S Homestead Farm, a diversified sustainable farm and champion of local food education. Students learned how food is grown there, visited the animals, milked the cow, and explored the interconnections of life on the farm. Back at school, they wrote stories and poems about their experiences. My favorite was a story about the chicken that wanted to go to kindergarten. During the students' visit, the chicken had actually hopped on the school bus and was waiting for them on a seat when they returned. They created poems that read like a beat poet night in San Francisco: "Milking the cow, squeezing a hot dog," "Chickens squawking like a woman screaming, their eggs, white circle smooth".

For a science class learning about the solar system, we explored the farm on a "tasting adventure route," making different stops to explore the role of the sun in growing food. Back at school, students tied their experiences together in a song they wrote about interconnections on the farm that are powered by the sun. Several teachers told me that science was their most challenging subject to teach in the classroom. However, from introducing the world of microorganisms through compost, to the composition of air through photosynthesis, to investigating seasonal rhythms through garden observation journaling, the possibilities for teaching the sciences in the garden were endless. We didn't let these opportunities get away. After all, the ideas about the natural world we were studying were functioning all around us in the garden. It felt magical.

Throughout the year we found that the kids loved participating in anything to do with food. If they had grown it, they would eat it, guaranteed. At 9:00 am, children would ask for thirds on turnips when we cooked them together to complement the children's story, "The Enormous Turnip". In wellness class, when learning about vitamins, the kids would ask the teacher, "Can I have another vitamin A snack please?" Every day in the garden students would eat kale and brussels sprouts right off the plants. It wasn't long before the school chef and I teamed up.

If we could prepare a healthy food item in one of my classes that she wanted to introduce to the menu, chances were that the students would take it from the lunch line because they now knew that food. When the chef had tried to serve hummus the year before, there were a lot of "Weird's" and "Yuck's" heard, and she was left with a bowl full of hummus at the end of lunch. She tried again this year, and, after we made hummus in class with parsley from the garden, they ate it right up. Now it is a standard item on the menu. We realized that we had struck a gold mine in child psychology for getting kids to eat well.

I used the same approach with the kitchen staff, offering myself as a resource to meet their needs. From the beginning the staff welcomed this challenge, their fire growing as the year progressed. They were empowered in their unique role as agents of change in students' lives. Lopez Island School has a Title I designation. This means that over 50% of the students qualify for free breakfast and lunch at school, the bulk of their daily nutrition. Cafeteria staff attended workshops entitled Rethinking School Lunch. Through culinary classes they taught students to make and enjoy delicious healthy foods. By the end of the school year the staff had also researched how and where they could purchase local and organic foods. Due to their work and dedication, with the help of grant monies, the cafeteria is going organic, and the students love the fresh, flavorful food. Since the kitchen started the year on a budget that would support only "heat and serve," many would have said it couldn't be done. But they did it.

By spring, the "garden as lens" idea was everywhere in the elementary curriculum, and soon the teachers were taking it on themselves. They taught nutrition by cooking recipes to complement a book the class was reading, used the garden to create math puzzles, and illustrated erosion by growing plants in different densities. Wellness class learned about nutrients through a wall-sized fruit and vegetable rainbow they had made. Art classes learned drawing by sketching their growing plants in natural fiber diaries they had created. When the music teacher jumped on the bandwagon, it felt like we had reached a tipping point. They were making it their own.

In mid spring, when the garden climbed out of its winter shell, the whole elementary school serenaded its return in a beautiful concert based on gardening and growing. They sang, "Inch by inch, row by row, gonna make this garden grow, gonna mulch it deep and low, till the rain comes tumbling down". There were flower costumes, butterflies, and scarecrows. Then came the encore, "The Weeds Came Back" to the tune of "The Cat Came Back". A gang of wild third grade boys dressed as weeds danced

across the stage. The grand finale was a perfectly timed percussion piece in the garden, using every kind of garden tool. Students danced around the garden to the beat holding lunch trays and harvesting into them. The show ended with the students balancing the trays on their heads to indicate “a balanced meal”. The crowd of parents and community members went wild; it was glorious.

The spirit was catching everyone. The librarian created a year-round display of garden books for kids and another of teaching resources. The superintendent began making presentations about our garden-to-cafeteria program at school conferences. The principal attended a nation-wide Sustainability and Education retreat to focus his own work on the program. A Farm-to-School Institute was held, attended by educators from around the country. The school board considered funding part of the program’s needs for the following year, a big step on a shoestring budget. Even the loveable but sassy school secretary was giving me updates about the veggies she had refused all her life but was eating at school now.

Children came home from school or from visits to the farm eager to eat vegetables and to plan and start gardens at home. Every time we cooked in class at school, we sent the students home with the recipe so that students could apply what they learned to their lives outside school. Parents told me they were making the recipes with their kids and began to give me suggestions about new ones we could consider for future food lessons.

The principal who had called me a “deer in the headlights” was now saying that he felt the culture of the school was changing because of the work we were doing. By the end of the year he was a dear friend to me. Teachers said they could feel the school changing too, and they were excited by the project, refreshed. One parent told me that it was the reason their kindergartener attended the school.

Truth be told, the Lopez School garden did not look like a show garden that year. The plant-spacing imperfections, late plantings, uneven watering, densely planted seeds, and over ripened fruits were not the marks of neglect, however, but the marks of learning children. All over the quirky garden was the evidence of motor skills being stretched to new heights, children taking responsibility for nurturing their own plants, and interesting features that showcased their creative design and thoughtful planning, such as pioneering experiments in milk jug greenhouses and adventures in tomato trellising.

The students who worked in the dirt all year, the kids who helped with extra garden watering during recess, the teachers who stayed up late developing ideas and preparing to integrate food and garden into their classes, the kitchen staff who discovered new sources and preparations of food, the principal and superintendent who extended their hours to attend conferences and meetings -- this garden was now theirs.