

Leafing Home



The Potential of Home Grown Greens



The first section of this book considered some of the strengths and weaknesses of three scales of production within the food system: the dominant industrial scale, the rapidly growing local food movement, and small but widespread kitchen garden scale. It then looked at how these different scales of production and distribution could be nested together to make major improvements in the efficiency and long-term health of our food system.

This section presents the case for growing leaf vegetables in home gardens as a specific way to address several things that the industrial food system and the local small-scale commercial food systems are poorly equipped to do. Leaf vegetables are plant leaves (sometimes including the stems and shoots) that are eaten as food. They are also called *greens*, *pothebs*, *leafy greens*, or *salad greens*. A leafy vegetable patch growing in a backyard garden may strike you as an unlikely place to begin rebuilding a food system. In fact, the green leaf crop is a humble hero patiently waiting for its potential to be unleashed. It is an elemental and underutilized agricultural tool that adapts well to a vast range of circumstance, starting with the home garden.

Why Eat Leafy Vegetables?

Leafy vegetables are good for your health. They are low in calories and full of vitamins, minerals, and antioxidants. The extreme diversity of leafy vegetables presents an interesting variety of flavors, colors, and textures on the plate.

Simply put, leafy vegetables are the antidote to corn syrup in our food system.

In a way, high-fructose corn syrup (HFCS) is the logical conclusion and the ultimate failure of the industrial food system. It begins with the quintessential commodity: government-subsidized genetically modified corn. The corn is shipped to one of 26 corn processing plants in the US, and the starch is stripped from the kernels. This is followed by three stages of enzymatic conversion, then, by various steps involving filtration, ion-exchange, evaporation and blending, resulting in a perfectly uniform product. Just five companies produce 92 percent of this sweetener.

Corn syrup is extremely handy in manufacturing processed foods. It is cheap, colorless, flavorless, and extends the shelf life of many of the diverse products in which it is an ingredient. Because of these attributes, corn syrup is in a lot of products—from soda and pizza to health bars and yogurt. It provides sweetness and calories but none of the protein, vitamins, minerals, fiber, or antioxidants essential to good health. Because it provides energy but nothing else, corn syrup is often described as “empty calories.”

The average American eats about a pound a week of high-fructose corn syrup, adding roughly 1,000 of the emptiest of calories to his or her diet. From 1985 to 2010, the price of soft drinks sweetened with HFCS dropped 24 percent, while the price of fresh fruits and vegetables rose 39%. American children took in an extra 130 calories a day from these drinks, while fresh fruit and vegetable consumption remained far below recommended levels.¹ The enormous increase in corn syrup consumption over the past 40 years has coincided with an enormous increase in both obesity and diabetes. It is certainly not the only cause of these two closely linked American epidemics, but neither is the connection mere chance.

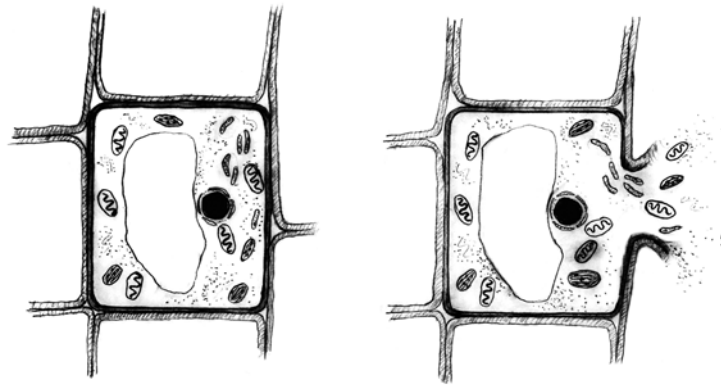
A recent study compared the prevalence of diabetes in countries with heavy use of high-fructose corn syrup with that of countries where it is little used, such as Sweden. Even after accounting for being overweight and for total sugar and calorie intake, the rate of diabetes was about 20 percent higher in countries where HFCS was readily available than in countries where it was more difficult to come by.²

In contrast to corn syrup, leafy vegetables have deep colors and full, complex flavors. They are rich in a wide variety of nutrients, beneficial antioxidants, and fiber. No other foods can match leafy vegetables for supplying

so much nutrition with so few calories. This is ideal for a society where over two thirds of the adults and one third of the children are overweight or obese.

A 2010 study reported in the *British Medical Journal* found that an increase of 1.15 servings of leafy vegetables a day was associated with a 14 percent decrease in the incidence of Type 2 diabetes. No other fruits or vegetables could be linked to a similar decrease in diabetes.³ The carbohydrates in leaf vegetables are metabolized slowly, so they don't create spikes in blood sugar like refined carbohydrates do. All leaf vegetables have very low glycemic index numbers, and foods with low glycemic index numbers don't contribute to rapid changes in blood sugar levels associated with diabetes and pre-diabetes.

While corn syrup is central to the food processing industry, green leafy vegetables are among the least processed of all foods. Often eaten raw in salads, the only processing necessary for most leafy vegetables is breaking open cell walls to liberate the nutrients within the cell. This can be accomplished with thorough chewing or by blending the leaves at high speed—as is done to make green smoothies. Briefly heating greens also softens and bursts the cell walls because the water inside them turns to steam.



Cell wall ruptured; nutrients released.

Why Grow Your Own Leafy Vegetables?

Of all the categories of food, none is as well suited for growing in home gardens as greens. Because they have a very short shelf life, leaf vegetables are best eaten as soon as possible after harvest. Also, they vary wildly in size, shape, color, texture, and flavor. Not only are different types of leafy vegetables different from each other, they also vary depending on how old the plant is, how warm the weather is, how much rain the leaf crop received, and the fertility of the soil.

The food industry finds the great variability and perishability of leafy vegetables to be problematic. The manufacture of processed foods is predicated on uniform ingredients with long shelf life. Because leaf vegetables are not a

predictable commodity, like corn or sugar, they have been largely excluded from industrially processed food. This is part of the reason that Americans eat only about half of a pound of greens a week, despite the unanimous endorsement of nutritional science.

For nutritional and culinary reasons, it is a sound idea to enlarge the role of leaf vegetables in your diet. You can get greens at supermarkets, through farmers markets, or at CSAs. Or you can grow your own. Doing so gives you the best access to the best quality of the widest variety of greens.

Greens are a natural ally of any grower working with limited space. Because they produce more food in less space than any other crop, even a tiny patch of ground dedicated to leaf vegetables can contribute to your diet. For this reason, they have become a favorite in community gardens as well as in backyard gardens. Also, most of the popular leaf vegetables—such as spinach, lettuce, kale, collards, parsley, cilantro, Swiss chard, mustard, and turnip greens—can be easily grown in any container that will hold at least 8 inches of soil. Not everyone is in a position to grow leaf vegetables, but a surprisingly high percentage of people are.

Greens produce more food in less time than any other crop. Some leaf crops, such as amaranth greens, can go from seed to harvest in just 30 days. This means they can be grown in chunks of time far too short for corn or tomatoes or pumpkins. This allows people in places like Calgary or northern New Hampshire, who work with very short growing seasons, to grow some of their own food. For folks feeling hemmed in by cold weather and who are often shut out of gardening, this can be a therapeutic undertaking.

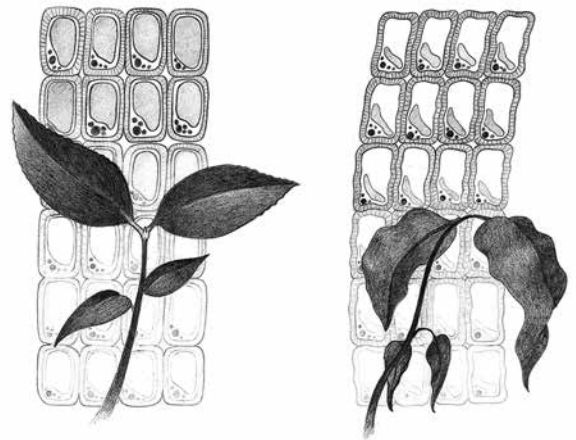
The capacity to produce a large amount of nutritious food quickly in a very small area makes greens the ideal urban crop. For over 60 years, people have been leaving farms and becoming more mobile and urban. Despite the numerous benefits of this migration, many people sense a loss as their schedules become more complicated and unrelated to natural cycles. For these people, the draw of “getting my hands in the dirt” can be strong. Interest in growing food in urban situations continues to rise, and greens are often the easiest and most rewarding foods that can be grown in town. Renters can supplement their diet with the freshest food possible from a few buckets or trays growing leafy vegetables. Greens are even well adapted for growing on urban rooftops, where both weight and space are limiting factors. When the semester ends or the lease expires or the new job in another town comes through, the vegetable garden can be taken along.

It is true that, unless you are pretty hard pressed financially, buying greens is easier than growing them. A few types of leafy vegetables are available at most supermarkets, but no other category of food is as poorly managed by the industrial food system. Most fresh greens are 85–95 percent water, which makes them very perishable. The moment they are cut from the plant, leaves begin wilting, losing both eye appeal and nutritional value. Over 90 percent of leaf vegetables sold in the US are grown in California and Arizona. In order to be shipped, most greens need to be cooled with ice in the field and packed in refrigerated trucks with no delays.

Even this special treatment doesn't give leafy vegetables much shelf life compared to canned beans or flour or cheese doodles or even oranges. For grocers, greens are a lot of trouble. If they don't sell quickly, they look like limp green rags. Profits for food retailers are based on keeping labor costs low, and fresh greens take more labor than simply opening cartons and setting the produce on a shelf. Highly profitable and increasingly ubiquitous convenience stores take this food marketing strategy to the extreme. They have little use and little space for leafy vegetables. If they carry any greens at all, it is only the most popular ones, and many people are fooled into thinking these are their only choices.

Though we are repeatedly encouraged to eat more leafy vegetables, industrially grown leafy vegetables aren't always especially good for you. It can be discouraging when you are trying to try to clean up your diet and then you read that leafy green vegetables are responsible for more food-borne illnesses than any other foods. Over ten million Americans become sick each year from eating contaminated leafy vegetables. This represents 22 percent of all the cases of food poisoning in the US.⁴ Canadian studies show a very similar pattern; leaf vegetables are also the top vector for food-borne illness there.⁵

Leafy vegetables grown industrially often carry pesticide residues. Lettuce and spinach are both listed in the Environmental Working Group's 2012 "dirty dozen" list of foods with the highest levels of pesticide residues. They also singled out kale for commonly having residues of organophosphate insecticides that have a toxic effect on our nervous systems.⁶ It is bizarre



Freshly harvested leaves, wilted leaves.

that different samples of kale greens, one of icons of healthy eating, showed residues of up to 55 different pesticides according to USDA Pesticide Data Program and the Pesticide Action Network (pesticideinfo.org).

Could these pesticide residues cause health problems? The Environmental Protection Agency tells us they are still safe at these levels. However, it is extremely difficult to test the long-term impact of these chemicals in our systems and to test them in combinations with other common things in our environment, such as fabric softeners, deodorants, caffeine, or antidepressants. Are they safe enough? Who knows? Who wants to find out using their family as test subjects?

Lettuce makes up over 70 percent of all leafy vegetables sold in the US, and most of that is iceberg lettuce. If you were to stay up all night trying to think up the worst food distribution plan possible, you would have trouble coming up with something as illogical as the iceberg or head lettuce industry. While greens as a food category are extremely nutritious, head lettuce is a notable exception. A comparison with kale is instructive. Kale is well known, easily grown, and nutritious (though there are still many greens with greater nutritional value). An equal weight of kale has triple the protein, four times the iron, seven times the calcium, 30 times the vitamin A, and over 40 times the vitamin C supplied by head lettuce.

Growing five billion pounds of a nutritionally crippled food that is 96 percent water in southwestern deserts with subsidized irrigation water is the start of a very bad plan. Then, wrapping each lettuce head in plastic and shipping it thousands of miles in a refrigerated truck doesn't ring of genius either. Days later, the lettuce arrives at supermarkets in areas where local farmers who could be growing far better greens are struggling to stay in business. It sounds like a spoof on modern agriculture, but this is how we eat.

Because it grows close to the soil and is eaten raw, lettuce is one of the most frequent sources of food poisoning. Because it is so mild flavored and tender, it is attractive to many insects and so it must be protected with insecticides. Enough of the pesticides remain on lettuce to make it one of the ten worst foods for pesticide residues. Despite its many nutritional and agricultural limitations, iceberg lettuce is our most important vegetable in terms of sales. You could almost describe it as the corn syrup of leafy greens.

In midst of this somewhat stagnant state of affairs, there is a whiff of change in the air. We appear to finally be getting bored with head lettuce.

The share of sales going to leaf-type lettuce is increasing at the expense of iceberg-head types. We are also gradually becoming more adventuresome, adding a bit of other greens, such as arugula, Asian cabbages, and endives to salads. It should also be noted that leaf vegetables grown with organic methods, whether certified or not, have essentially no pesticide residues. This is true for organically grown greens from industrial farms, local farms, or backyard gardens.

If You Can Afford Organic Greens, Why Grow Your Own?

Buying organic leafy vegetables (along with apples, celery, peaches, strawberries, bell peppers, and grapes) is clearly justified in order to avoid pesticide residues. However, just being labeled “organic” doesn’t guarantee that the greens are any fresher, more nutritious, or free from the pathogens that may cause food poisoning. Buying from a farmers market or CSA usually means fresher greens that have been grown in better soil and handled with greater care, but they are probably only available once or twice a week. Buying from either a supermarket or a local food market, your choices of leafy vegetables will be limited by what is most profitable to the retailers or the big farmers.

Growing your own changes all the rules. As you progressively master the craft of gardening, you can gain a level of control over the food you eat and access possibilities well beyond the offerings in the commercial sales outlets. Nowhere are those possibilities greater than with leaf vegetables. There are over 1,000 species of plants that have edible leaves. They offer a dazzling array of shapes, colors, and flavors currently unavailable to consumers.

Leaf crops can be annual herbs, perennial shrubs, or even trees. Some are vigorous twining climbers that can quickly turn a chain link fence into a wall of edible greenery. Barley and Austrian winter peas make mild-flavored greens, and they are hardy enough to last after frost has killed the tomatoes. Cowpeas and fenugreek can be grown for edible leaves and for enriching the soil with nitrogen. They can be planted in between rows of heavy nitrogen feeders, like corn.

Tropical leaf crops can be raised that shrug off the hottest days of summer—when lettuce and spinach turn bitter and go to seed. Summer in much of the world’s temperate zones has long stretches of tropical weather. That is all it takes to grow great crops of tropical greens like molokhaya, soko, and

vine spinach. When it does turn cold, you can still harvest Siberian kale at temperatures down to 0°F (-17°C). If your soil is too salty for a garden, you can still grow orach, a very salt-tolerant leaf crop in the Atriplex family.

The following chapters will give you the practical information you need to take leafy vegetables to the next level. I hope you can forget all about pale, bland, plastic-wrapped leafy vegetables and have fun taking a plunge into the chlorophylled world of edible foliage.