5

Walking the Garden Talk

All my talk about the power of home gardening doesn't mean much if I haven't "been there and done that" in a way that could feasibly be repeated in millions of home gardens. It's the stamp of credibility to show that what I'm advocating is possible, both for individual gardeners and for inspiring the creation of a new food production system nationwide. My previous experience with growing vegetables occurred when I was more or less where most gardeners are now: interested, having fun, enjoying the fresh produce, but with no real thought of it providing much or possibly even most of my sustenance. Much less being part of a food-system remake of the country as a whole. However, with the emergence of the pandemic, I felt like I had to up my game. So I grew stuff and took notes.

Writing this book, mostly over the summer and fall of 2020, it was just so satisfying and rewarding to leave my computer from time to time to go out and tend my own garden, now that it had a bigger purpose. I assumed I'd have an absolutely abundant harvest that I'd then be able to triumphantly tout to inspire people.

It didn't one hundred percent work out that way. Some of the fourteen tomato plants died early from yellowing and withering (nutrient deficiency?), although enough did well to produce my best harvest ever. One plant, way over in a corner and crowded on two sides by tall poles of lush green beans and colored butter beans, grew spectacularly well, producing maybe 15 pounds of large, blemish-free tomatoes. It was still bearing ripe fruit in mid-October, right here in Iowa. Just 30 feet away from the early flame-outs, so go figure. Meanwhile, squash vine borers devastated the Red Kuri squash, so I got only 38 pounds. Equally disappointing were the two 24-foot rows of all-purple potatoes, which gave me a measly 28 pounds. As you'll see in a bit, the yield for those two crops should have been much higher.

The two rows of green beans, planted in hills around separate poles amidst the squash, surprised me. They grew very lush foliage, but no flowers for weeks; I thought they were never going to blossom and produce beans. Then, suddenly they took off, eventually yielding more than I ever expected. I think I might have given them too much compost and organic nitrogen fertilizer, because the leaves, though healthy green, were at first highly convex, not flat like they're supposed to be. That's often

a sign of too much nitrogen. I'd never grown these varieties of squash, potatoes, and green beans before, and it showed. That's gardening: you learn something new every year.

On the other hand, I'd never grown sweet potatoes before either, but they produced an average 5.5 pounds per hill, despite the voles that devoured parts of some of them. I should probably attribute my success there to Steve Solomon's advice to mix some sand into the heavy clay soil, plant the slips in raised hills, and only lightly fertilize them with compost.[1] I also grew a mix of collards and various kinds of kale, planted in between some of the tomato plants. They far exceeded my expectations as well.

Interestingly, I got 0.95 portions per square foot of butter beans in 2020 using one double row, with the rows planted one foot apart, and 0.83 portions per square feet in 2018 from two rows 4 feet apart. (You'll see below what I mean by portions.) The 2020 crop was also half as much work, since I provided only one vertical lattice for the vines to climb on, compared to two in 2018. Although the rows were 24 feet long in both years, they were not wholly comparable, as I harvested almost all of the 2018 beans dry, and most of the 2020 beans fresh, the majority of which I froze.

With these results in mind, I'll now revisit the Chapter 2 measures by which to evaluate the worth of produce, this time applied to my (24' x 31') garden in 2020. I kept meticulous records of every ounce of every vegetable I harvested, so the math was easy.

- Cash value

  Based on the USDA's average retail price per pound of each vegetable, multiplied by the average industry premium of 70 percent more for organic, I harvested $603 worth of produce. I could have grown my own heirloom tomato starter plants, but opted instead to buy them, costing me $35. I also bought $10 worth of sweet potato slips, so my cash "profit" was $558, right in line with the examples of garden profits mentioned in Chapter 2.

- Weight

  The garden yielded 456 pounds of fresh produce (Table 5-2), about half of which was tomatoes. (In fact, counting the original weight of tomatoes before they were rendered down into sauce and frozen, the total was 535 pounds.) Yet the watery tomatoes provided only a small fraction of the calorie output of the corn, beans, potatoes, winter squash, and sweet potatoes, which again is why weight alone is misleading.

- Yield

  I harvested 535 pounds from my 24' x 31' plot, which equals 535 pounds per 744 square feet, which is 0.7 pounds per square foot. At that rate, I could expect to produce 30,492 pounds of vegetables on a full acre, despite the poor potato and winter squash yield rates.

- Survival value

  If you'll recall, this is how long how your garden would keep you alive if you had to depend on it for all your food. I've come up with a simple accounting system, which I'm calling portion-based, to assess that measure of worth.

Portion-based garden evaluation

Follow along on Tables 5-1 and 5-2 to get an idea of how the portion-based system works. The steps to arrive at your own portion-based measurements are listed below. I think this way of measuring is more useful than the usual strategy of simply listing average weight or volume per veggie per length of row, since that can vary so extensively for different people and different gardens.

Although it's all simple math, for those who are easily bored by numbers, I've provided key summary points at the beginning of each table so you can skip over the table itself. For those who want to know more, follow the text along with the figures.

How to calculate your portion-based garden yield:

1. Determine the numbers of portions of different kinds of foods you typically eat every day for breakfast, lunch, and supper (and perhaps more if you include between-meal snacks). For me, on average, it's three portions each for those three meals.

Table 5-1. 2018 (beans) and 2019 (corn) plots

Two plots, totaling 22' x 22', grew enough beans and corn to last 55 days if that were all I ate.

Crop	Total harvest, lb.	Weight per portion, oz.	Portions available	Days harvest would last at 9 portions per day	Plot size, sq. ft.
Colored butter beans, dry	10.2	1.5	108.8	12.1	132
Corn - grits - dumplings	 24.0 12.0	 1.5 1.5	 256.0 128.0	 28.4 14.2	352
Total	**46.2**		**492.8**	**54.7**	**484**

2. Decide how much of any food item constitutes a fulfilling, healthy portion for you. For instance, Table 5-1 shows that 1.5 ounces of dried butterbeans, when hydrated and cooked, constitutes one portion for me. For Red Kuri winter squash (Table 5-2), it's 7 ounces, as it contains a lot more water than dried beans. In general, the pre-prep weight of calorie-dense veggies will be less than that of the calorie-sparse ones. But you can't just assume what will work; you'll have to determine the correct weights per portion by trying them out for yourself.

3. Divide the total weight of your harvested vegetable (or a garden average from the Internet if you haven't grown it yet) by the weight per portion to see how many portions the total harvest would provide, and thus how many days it would last you. For instance, my 2018 harvest of 10.2 pounds of dry butterbeans would yield 109 1.5-ounce portions. At nine portions per day, that would last about 12 days if I ate nothing but butterbeans three times a day (Table 5-1). Of course, I would never do that. The point is to provide a way to see how long my harvest would last when applied to all the crops I want to grow and eat.

   For example, for lunch I might have one portion each of sweet potatoes, butterbeans, and greens. That would be two calorie-rich to one calorie-sparse food (both nutritious, by the way). You could mix and match any of the foods, any way you like, to provide your idea of an interesting, satisfying, and nutritious meal.
4. You can then use this system to see how large your garden would have to be in order to feed yourself for a year, given the amounts of each crop you grow and how well they yield. As you can see from Table 5-1, the corn and butterbeans I grew on a total of 484 square feet in 2018 and 2019 would last me about 55 days if that were all I ate. My 2020 garden (Table 5-2), grown on 744 square feet, would last me about 128 days. If I had grown it all in the same year, I would have had 183 days' worth of food (Table 5-3)—exactly half a year. After that, I'd have to head to the grocery store.

Table 5-2. 2020 Garden

A 21' x 34' plot grew enough vegetables to last me 128 days.

Crop	Total harvest, lb.	Weight per portion oz.	Portions available	Days harvest would last at 9 portions per day	Plot size sq. ft.
Potatoes	28.2	13.0	34.7	3.9	
Winter squash	35.7	7.0	81.6	9.1	
Sweet potatoes	66.5	8.0	133.0	14.8	
Butterbeans:					
frozen	13.0	3.2	65.0	7.2	
dry	1.4	1.5	14.9	1.7	
Green beans:					
canned	19.9	3.6	88.4	9.8	
frozen	9.1	3.6	40.4	4.5	
dry	1.3	1.5	13.9	1.5	
fresh	5.2	5.2	16.0	1.8	744
Tomatoes:					
fresh (table)	82.5	4.5	293.3	32.6	
sauce (frozen)	140.0	9.0	248.9	27.6	
jam	13.0	9.0	23.1	2.6	
pickled	15.1	9.0	26.8	3.0	
Leafy greens:					
frozen	15.4	5.0	49.3	5.5	
fresh	7.3	5.0	23.4	2.6	
Total	**453.6**		**1,152.7**	**128.2**	

So, if I can grow enough food to sustain me for six months in an area of 1,228 square feet (Table 5.3), then my garden would have to be twice that size (2,456 square feet) to grow a full year's worth. That sounds imposing until you realize it's less than a

Table 5-3. 2018, 2019, 2020 Garden Summary
Plots from 2018 and 2019, added to my 2020 garden, would theoretically feed me for 183 days, or six months.

Crop year	Weight Harvested lb.	Portions available	Days harvest would last at 9 portions per day	Area sq. ft.
2018-19	46.2	492.8	54.7	484
2020	452.3	1,152.8	128.1	744
Total	**498.5**	**1,645.6**	**182.8**	**1,228**

fourth the size of the average American lawn, which is 10,000 square feet. To feed myself for a year, I would need a sunny plot about 50' x 50', assuming no yield rate drop-offs from previous gardens. That would be over three times as large as my 2020 garden alone.

But that's with my 2019 corn spacing of 4 feet between rows and eight to ten inches between plants in a row, rather than the recommended standard of 2.5 feet between rows and 6 inches between plants in a row. Plus, you'll remember that in my 2020 garden I got rather low yields with the purple potatoes and Red

Kuri winter squash. By bringing yields for those two crops up to average, I should be able to do much better.

Following across Table 5-4, you can see that using the same plot sizes I'd previously used, but upgrading my technique to average spacing and yields, I could expect to get an added 144

Table 5-4. 2019 and 2020 yields vs. expected 2021 increases

Maximizing corn spacing and bringing potato and squash yields up to average would feed me for an additional 144 days.

	C*	2019 and 2020 portion yields in my gardens ($D_1 = CH_1$)		2021 portion expected, based on average vegetable garden yields ($D_2 = CH_2$)		
		H_1 Harvest, lb.	D_1 Days harvest would last	H_2 Harvest, lb.	D_2 Days harvest would last	D_2—D_1 Added days harvest would last
Corn (2019)	1.18	36.0	42.6	124	146.7	104.1
Potato (2020)	0.15	28.2	4.3	175	26.3	22.0
Squash (2020)	0.29	35.7	10.1	70	28.0	17.8
Totals		**99.9**	**57.0**	**369**	**201.0**	**143.9**

*Constant

days of sustenance compared to what I got in 2019-20 for those crops.

Putting this all together allows me to optimize the amount of space it would take for me to eat for a day, based on a hypothetical daily meal plan that could then be ramped up to a year. For this meal plan:

- There would be two calorie-rich items and one calorie-sparse item per meal.
- I would consume each vegetable only once per day, except for butter beans, eaten twice daily for protein.
- Meals would theoretically add up to about a pound of cooked food each for breakfast, lunch, and supper, which would equal 1,095 pounds per year—about average for an adult within a healthy weight range).

So, here's one way this meal plan could break out, using Table 5-5:

- **Breakfast:** corn (0.3) + butterbeans (0.4) + tomato (0.1) = **0.8 square feet**
- **Lunch:** potatoes (0.4) + squash (0.4) + green beans (1.0) = **1.8 square feet**
- **Supper:** greens (0.4) + sweet potato (0.5) + butterbeans (0.4) = **1.3 square feet**
- **Total: 4.1 square feet**

Of course, this is all just an example for the sake of illustration, as no one would want to eat the same breakfast, lunch, and supper every day for a year. This meal plan would require a total of 4.1 square feet of garden space per day. So, 365

days per year times 4.1 square feet per day equals 1,497 square feet for a year. That's 1/29th of an acre, versus the aforementioned three acres it takes to feed the average American for a year. It would be garden measuring about 39' x 39', compared to my 2020 garden of 24' x 31'.

Table 5-5. Area required per portion

It would theoretically take 4.1 square feet of garden space per day to feed me.

Crop	Plot size, sq. ft.	Portions available	Sq. ft. per portion
Butter beans	48	108	0.4
Corn	352	1,077	0.3
Potatoes	84	240	0.4
Winter squash	84	224	0.4
Sweet potatoes	70	133	0.5
Green beans	168	161	1.0
Tomatoes	84	602	0.1
Greens	28	73	0.6
Butter beans	48	108	0.4
Total	**966**	**2,726**	**4.1**

Remember the 30' x 30' plot I cited in Chapter 3 that provides all the industrially-produced vegetables the average American eats per year, which would supply only 15 percent of their calorie needs? Compare that to a 39' x 39' plot that would provide all 100 percent of my calorie needs per year. Not that everyone needs to go the all-vegetable route; I don't intend to, for sure. I'm just showing what can be done.

So does this theoretical example reflect what's really possible, both on an individual scale as well as what could be ramped up nationwide? Could I *really* live from a garden measuring only 38' x 38'? I decided to find out by direct experience.

Garden Super-Size Me

Do you recall Morgan Spurlock's 2004 documentary, *Super-Size Me*, in which he ate nothing but McDonald's food every day for a month and recorded the disastrous effects on his body? Well, I decided to give my proposed home-grown food plan a similar test. Not to prove that a well-balanced diet of garden-grown veggies is generally much healthier than a solid McDonald's diet; most any nutritionist would agree that it is. Rather, my goal was to see if I could reasonably live for a month only on food from my garden, based on the meal plan in Table 5-5.

Like Spurlock, I first subjected myself to a thorough physical exam before I started, and then again after the month was over, just so I'd have some objective data on how it went. I recorded every ounce of each item I consumed, plus my subjective experiences, in a journal.

First, the basics: I ate only from my garden except for a few seasonings such as salt and pepper, herbs and spices, and a few shavings of fresh bacon (0.2 ounces per serving) to season beans and greens. Also, pepper vinegar, a sprinkling of parmesan cheese on tomato sauce, and butter and/or olive oil in which to sauté potatoes and sweet potatoes or to dribble over grits. In addition,

I allowed myself black and herb teas and exactly one cup of coffee with a sweet croissant, but no soft or alcoholic drinks, and no juices or processed drinks such as V-8 juice, energy drinks, or the like. In other words, 99.99 percent of what I ate came from the garden.

As I'm not a vegetarian, my first hurdle was to get over meat cravings. I was able to do that by making dishes as tasty as possible with the seasonings and, oddly, by treating my withdrawal symptoms with an occasional four to five teaspoons of salted almond butter between meals. After the first week or so I rarely needed even that. I also found that eating the pickled green tomatoes I made, whether with the salted almond butter or a meal, greatly helped soothe my need for a tasty treat.

The next challenge was the yearning for sweets. I'm not a big fan of heavy desserts; usually something like a single dark chocolate-covered piece of ginger or almond would be all I needed, but I did crave that. This is where my wife came to the rescue, as she made me some delicious tomato jam from my abundant supply of sweet tomatoes. It's something you never see here in the U.S., but it was common in her home country of Argentina, and she said it can also be found in Spain. So I'd just have a generous teaspoonful of that tasty jam once or twice daily. It also helped that big portions of sweet potatoes were on the menu every day.

In addition, I missed breads, biscuits, pasta, rice, and sandwiches, though not enough to have to invent something to counteract withdrawal symptoms.

Now, in spite of the fact that I ate only the eight vegetables in Tables 5-1 and 5-2, I enjoyed more variety than you might think. For example, tomatoes came in five options: fresh (red and orange), tomato sauce, pickled green tomatoes, and tomato jam.

Tomatoes: fresh, sauce, pickled, and jam

I've been growing heirloom corn and making it into whole-grain grits and cornmeal for several years, so I had several colors and flavors to choose from: red (Bloody Butcher), blue and white (White Cherokee Eagle), and yellow (Northstine Dent).

Have you ever tried blue grits? Red grits? Or even yellow, which can also be thought of as polenta? I used all of those variations. Each retains its unique flavor and color—to varying degrees—when made into grits, dumplings, or hoecakes.

I also had butterbeans, cooked from either fresh or fresh frozen, or dried; all are the same variety of beans, but they deliver very different eating experiences. Likewise, green beans (Kentucky Wonders) were prepped from either fresh, frozen, or canned. Or harvested when the pods were dry, yielding shelled beans that taste a lot like pinto beans. I tried preparing all these

options in a number of different ways, and combined them in a variety of permutations.

One thing I noticed after a couple weeks surprised me. Walking around in the grocery story with my wife (she was not on my garden diet), I suddenly became aware of feeling a little smug. Because I—unlike everyone else shopping for food—wasn't relying on someone else to keep me from starving. I was basically food self-sufficient, at least for a month, for the first time in my life. Quite a new and strange sensation, and distinctly empowering. Yes, I did use the seasonings I mentioned, but I knew that if I had to, I could even do without those. Or grow many of the herbs and seasonings myself, easily enough.

Also, when I made the lone exception to my garden diet by indulging in that sweet almond croissant with a cup of coffee to help my friend Mark celebrate passing his PhD defense, I had the oddest reaction. Although it tasted good, it felt vaguely artificial and unwelcome in my mouth, like some kind of superfluously-sweet fluff. That too surprised me, because I'm a big fan of good quality croissants. I suppose my tongue—and the rest of my body—was already getting used to a different physiological norm.

In any case, the food was delightfully savory, partly because I started getting creative. I really like pork or chicken sausage with breakfast, but since that was now off the menu, I decided to create my own sausage with the dry butterbeans. First I boiled them until they were soft, then mashed them up with diced red bell peppers from the garden and seasonings, made them into

little patties, and sautéed them in an iron skillet in olive oil and butter. I call them Simon and Garfunkel sausages because of the parsley, sage, rosemary, and thyme I used to make them savory (along with salt, pepper, and that tiny bit of bacon shavings). They were so delicious I looked forward to having them every morning, especially since they wonderfully complemented the buttered grits and fresh tomato chunks or tomato pickles. What a treat!

Other innovations were tomato sauce over grits or winter squash, pickled tomatoes with almost everything, and butter-sautéed, diced purple potatoes that had been pre-boiled. Of course, the harvest from my 2020 garden, even when augmented by leftover beans and corn from previous gardens, wouldn't last a whole year, so I'm once again buying food in the grocery store. Still, it will be interesting to see what the longer-term effects will be. I'm already eating a lot more vegetables than I used to, and also those Simon and Garfunkel butter bean sausages.

At end of the month, I found that although my energy level was good throughout, I had lost three pounds. I'm guessing my body found it quite a shock to suddenly be deprived of meat, although a two percent weight drop over 30 days isn't too concerning. My follow-up physical exam revealed that my blood pressure, already in the healthy range when I started at 136/70, was now 108/50. The nurse had no explanation, but wasn't worried; evidently blood pressure can vary that much from one day to the next, or even within a day. Also, my level of vitamin B12 had decreased a little, not surprising in view of having

almost no meat or dairy for a month. My hemoglobin dropped slightly and my iron went up a bit, and my PSA was a tad high. None of which was particularly concerning to the nurse, as all were close to norms. Most significantly, my cholesterol had dropped from 230 to 216. Since I'd had slightly high cholesterol for years, the nurse viewed that as an encouraging outcome.

Having proven that I can subsist on my own garden food for a month, the next step would be to extend it to a year. But to do that, I should first reveal what I actually ate during that month, just going by what felt right according to taste and satisfaction. As I mentioned in my proposed meal plan (Table 5-5), I had intended to have daily one portion each of corn, winter squash, potatoes, sweet potatoes, tomatoes, leafy greens, and green beans, plus two portions of butter beans. That is, three portions per meal, in various permutations. However, as indicated in Table 5-6, I ended up having about nine times as many portions of corn as winter squash, with a range of consumption rates between those extremes for the other veggies. I'd also intended to consume calorie-rich to calorie-sparse portions at a ratio of 2 to 1, but the actual ratio came out to about 2.4 to 1. In general, I found that I had to eat a *lot* of calorie-rich veggies just to maintain my weight (which I tracked all along). This may be potentially good news for people who want to lose weight, especially if, unlike me, they favor calorie-sparse options.

Table 5-6. Monthly and Projected Yearly Area Usage
Based on the rates at which I consumed eight vegetables over a month, I would need 1,351 square feet to provide all my food for a year—a garden about 37' x 37'.

Crop	Portions consumed per month	Portions consumed per year	Sq. ft. per portion	Sq. ft. per yr. required
Corn	90	1,080	0.3	324.0
Butter beans	66	792	0.4	316.8
Tomatoes	56	672	0.1	67.2
Potatoes	29	348	0.4	139.2
Leafy greens	25	300	0.6	180.0
Sweet potatoes	24	288	0.5	144.0
Green beans	11	132	1.0	132.0
Winter squash	10	120	0.4	48.0
Total	**311**	**3,732**	**3,732**	**1,351.2**

Surprisingly, based on the record of what I actually ate for a month, and the area it would take to grow each vegetable for a year, it would require only 1,351 square feet, or a plot 34' x 40', to grow a year's worth of food. That's over 1,000 square feet less than the 2,456 square feet I would have needed based on my 2018 and 2019 corn and bean plots plus the entire 2020 garden. And it's just a little less than the 1,497 square feet predicted from Table 5.5. That's encouraging. I'm sure the low figure is due to more efficient spacing as well as the fact that I ate so much

corn (mostly in the form of grits), and butterbeans, both of which require the least amount of area per harvested calorie to grow, as you'll see in Chapter 8. I'm not sure I'd eat like that over a year, so the size of my 2021 garden is 1,400 square feet, or 35' x 40', just to have a little extra space to try out a greater variety of vegetables.

That's still a very manageable garden plot. As of the end of November, I had already prepped the needed 218 feet of new turf, spading it 8 inches deep and 16 inches wide, and leaving two-foot-wide grass aisles between beds. It took me only 15 minutes to dig seven feet of row per day, or about a month to do the whole thing, plus a day or two off from time to time due to inclement weather. In the spring, I'll just mix in a little compost, plant the crops, and add leaves I raked up this fall for mulch. Then I'll use the grass clippings I will have gathered from spring mowing for additional mulch. That will help to keep moisture in the soil and weeds down around the plants. Easy. I've done it all before. Fifteen to thirty minutes max of "work" per day, or three-and-a-half hours per week to feed myself for a year. Pretty close to the average four hours a week that gardeners spend growing things. And for me, it is more like enjoyable relief from clacking away on a keyboard than work.

Meanwhile, this year's (2020) garden didn't end with the close of summer. During the first week of September, I transplanted seedlings of kale, chard, and other greens to one of the beds where I'd harvested potatoes. Six weeks later, those greens reached harvestable size, and I've already gotten a number

of meals' worth as of mid-December. So far, they've stayed alive and healthy down to 13°F, as they're winter-hardy. To extend this harvest of fresh, living produce even longer—possibly through a winter that will surely get down to well below zero—I made protective, plastic-covered elongated boxes to cover them when it gets really cold. It's a nice new garden project, and it will be interesting to see how long they keep the greens alive.

I designed the boxes so that, while firmly attached to the ground at the back corners, I can leave the greens completely exposed. I can also swing the boxes up to a tilt to partly cover the plants, or completely cover them when it gets down to 20 degrees or lower.

I also left some of the greens with no cover at all, just as a control to see how much longer the covers extend my winter harvest. As a fierce winter storm blew my cold frames half a block away several years ago, these boxes are anchored not only at the back corners but are also secured at the front corners when closed, and otherwise strongly tethered at each of the other two positions. As well, I made them to withstand blizzards, ice storms, heavy snow, windstorms, and whatever else the howling winter might throw at them.

I've thus embarked on succession planting, something I had never tried before. If this little experiment in winter greens is successful, I'll for sure try out more of the same in the future, which will make my garden even more productive than that depicted in Table 5-6. That's the creative fun of gardening—always more interesting things to try out next.

So what does it all mean, this 30-day garden diet experiment, supplied by some of the produce from of my 2018, 2019, and 2020 gardens? Simply that—to reiterate my statement of purpose at the end of Chapter 1—given very few resources, a little know-how, and a pace that works for you, you can be food self-sufficient, or largely so, with a moderate amount of enjoyable effort.