

Eating Off the Grid

By Warren M Myers

Abstract

This paper presents a route for individuals and small families to – sustainably – produce the majority of their own fruits and vegetables. Considered are modules of fruit and vegetable production which can be combined and multiplied for personal preference, but which are each very easy to maintain.

As a side benefit of efforts to produce an individual or family's vegetable needs also comes pleasant landscaping, shade, reduced mowing, simpler weeding, and future alternative uses for the plants, modules, and trees.

I hope to show that such a modular system would greatly benefit many suburban and rural families, and is even extendible on a small scale to urban dwellers.

Introduction

Does growing your own food have to be difficult and time-consuming? Mel Bartholomew, a retired efficiency engineering expert, has devoted over a quarter century to the proposition that it does not. In his seminal first book, *Square Foot Gardening*, he outlines an intriguing proposition for food production, which I am going to summarize and expand upon here. Instead of focusing on traditional growing methods, Mr Bartholomew looked at what people did for house plants, patio planting, etc, and extended it to fruit and vegetable gardening.

Very few people who have house plants would think of growing them as farms do corn – in long rows to be harvested by machine. Traditionally, gardens and farms have looked very similar, at least in most countries. Vegetable, flower, and fruit plants are grown in rows. For a farmer or gardener who wishes to consolidate planting and harvesting efforts into a few short – but busy – times of the year, and who wants to use automated ways of turning the earth, such as plowing via animal- or tractor-drawn tools, planting in long rows is natural. However, for small-scale growing, or for growing with a staggered harvest, this method doesn't work well.

Mr Bartholomew modularized gardening down to a fundamental unit of measurement: the square foot, and then worked back up to growing flowers, fruits, and vegetables that many people are interested in growing for themselves. One primary improvement that he made in his system, which I have modified slightly for this proposal, is the concept of growing vertically.

Vines grow up quite well, if they are given something to grab onto. Adding to this the ideas of complementary and opportunistic gardening, I am proposing a way for suburban and rural residents to grow much of their own fruit and vegetable needs easily.

Growing your own food has many benefits beyond just saving money at the grocery store, too. Gardening forces people to get outside and do at least some physical activity on a frequent basis, gives the grower a sense of pride, and can spruce up the looks of their property. If a little care is taken in planning the garden, the complementing and contrasting colors, textures, and aromas act to invite people to look at the garden. This is true of both the gardener and passersby. In combination with applying many of Mr Bartholomew's principles, can be the strategic locating of fruit- and nut-bearing bushes and shrubs which may also act as wind breaks and shade sources. From personal experience, a well-tended garden is always enjoyable to look at.

One point Mr Bartholomew makes in both of his books, and on the Square Foot Gardening Foundation website, is the locality of production afforded by growing your own food. This is emphasized in the book *CASH From Square Foot Gardening*, and is a major selling point for the foundation's work to spread sustainable development around the world. By growing your own food, you know what you're eating, the quality of the plants, safety of any fertilizers, and whether or not pesticides have been used, and what kinds they all were.

In keeping with most nutritionists' recommendations to consume lots of fruits and vegetables, growing your own food will encourage the grower to eat what he's grown, and to share it with friends and family. Eating a home-grown salad is almost always an enjoyable experience, often leading to discussions about what was grown and why.

Who Can Eat "Off the Grid"?

Due to space requirements, even the modest ones of my proposal, urban dwellers may find it difficult to have more than a small herb garden for themselves, especially in very densely populated areas like New York City or Los Angeles. Suburban and rural people tend to have more space available to them, and can more easily devote a small portion of their yard to growing food for themselves. Depending on how much effort the gardener wishes to commit to their garden, eating off the grid can be a hobby providing tasty summer-time salads, or it can provide nearly all the vegetable and fruit needs for a family throughout the year.

Growing up, my mom and I often planted a small garden, even when we lived in the city and had only a 4'x11' area we could use easily. Our production amounted to small summer salad additions, a few (very) sweet ears of corn, a small mound of potatoes, or more tomatoes than we could count (they'll grow as long as sun and water are available, and they're very prolific). Given the property my parents owned, and the neighborhood we lived in, we had a nice, small vegetable garden that was both fun to work in most of the time, and gave us the satisfaction of being able to eat something we had grown.

Why Grow Your Own Food?

Beyond simply taking a sense of satisfaction from eating the "fruit of your hands," growing your own food reduces your need to buy food grown elsewhere. Currently the United States imports a great deal of our food from other countries where growing conditions and seasons are more favorable, or where labor is cheap. Various studies have placed the average distance a vegetable travels to reach the American consumer's table at 1000-1500 miles. With rising fuel and transport costs, getting food locally is an attractive possibility, but often is not available, either because there is an inadequate supply of local farms, or because the selection is not as broad as it is at stores that have full lines of imported produce.

The fact that food you grow only has to be transported from your back yard into your house obviously improves freshness. Beyond that, though, it also reduces time spent shopping, and increases personal disposable income for other things than food. If enough people grew food for themselves, even at a hobby level, it might also increase choice, or decrease prices for people in urban regions, as less would need to be transported to less developed areas.

Another, somewhat selfish, reason to grow your own food is to reduce the maintenance required for lawns. The gardener might spend the same amount of time outside, but instead of mowing and weed-whacking, some of that time can be spent preparing plants, and bringing food inside.

Additionally, if some chooses to plant berry bushes and fruit and nut trees on their property instead of just the 'classic' hedge plants and decorative trees, trimming the hedges can become a time for pruning and harvesting, and not just cutting off unwanted growth. Large blueberry and raspberry bush lines create a similar amount of privacy and decoration as to rhododendrons or azaleas, but also offer their colorful highlights as a ready snack or dessert.

Walnut trees, which grow well in many parts of the country, can provide their nuts either for personal consumption, or to attract squirrels to your yard, and keep them away from any bird feeders you may have. All things being equal, planting walnut, beech, or almond trees is no more difficult than planting oak or pine trees, and the fruits of the trees are edible.

How Do You Grow Your Own Food?

Expanding on Mel Bartholomew's plan as laid out in *Square Foot Gardening*, I have developed several 4'x4' modules that can be placed in varying combinations for a personal garden. While initial costs may seem high, the fact that the start-up costs of the modules of lumber, fencing, and piping are a one-time-only outlay, and their benefits can be reaped for many years. [See attached construction sheet for description of modules, trellises, and soil preparation.]

After the modules have been prepared, all that is left is to populate and tend them throughout the growing season. Populating the gardening plots takes very little time. With practice, planting seeds takes only seconds per spot, and transplanting seedlings generally takes less than a minute each, so each module can be fully populated in 10-15 minutes, and the whole garden, presuming the initial installation of 8 modules, should take less than two hours to plant.

Once the plants are in the ground, the only two jobs left are to water them, and make sure weeds and critters don't kill off what you've working to grow. If the grower lives in an area with a large nuisance animal problem, medium to tall fences are recommended to protect the garden from large animals, such as deer and raccoons, while short fences will do fine if the only threat comes from rabbits.

Mr Bartholomew's method also encourages crop rotation, multiple plantings, and staged harvesting. By planting identical crops every few weeks, rather than all at once, the gardener gets a benefit of a continual harvest throughout the growing season. Following the methods outlined in *Square Foot Gardening*, the gardener plants 1-16 plants per foot (depending on size), and can divvy-up the 4'x4' block any way he wishes. The attached module layout sheets are one option among myriad others.

Harvesting and Using Your Food

By planting in small, highly manageable squares, waste is reduced, and harvesting crops becomes very easy. As in any garden, vegetables and fruits should be picked when you think they're ripe. Growing seasons vary by plant and region, but once the garden begins to produce,

fresh salads will be available almost daily. Tomato plants are notorious for being over-productive, but canning, making sauces, salads, and giving away them excess is a great way to share locally-grown food with neighbors, colleagues, friends, and family. Incorporating the yield of the garden into daily menus and take-along snacks becomes simple, as the garden starts issuing its goods.

Expanding Production

After an initial experiment with growing your own food, you will probably find that you want to grow more the next year. With the low maintenance times of the individual growing modules, adding more production is as easy as setting up another box, and planting new items. Mr Bartholomew lays out a small-scale commercial production method in *CA\$H from Square Foot Gardening*, which could easily be used to produce food for a large family, and is all based on aggregating more growing modules next to each other.

The only real limitation to expanding production is maintenance time. Retired people, or families with kids, may find it easier to work on a large garden, as they would likely have the time, or manpower, to devote to maintaining the garden. In such a large garden, too, excess production will be more likely, as a localized economy of scale sets in.

Conclusion

Eating off the grid has many benefits, from eating healthier, to getting exercise, to getting to know neighbors, to saving money, to slowing down a busy schedule a bit; it's a great way of improving yourself. Growing your own food may not be in the cards for everyone, but for those who are able, the negatives are negligible, and the benefits will last for a long time.

Works cited:

CASH from Square Foot Gardening, by Mel Bartholomew; © 1985; Alpine Press

Fast Food Nation, by Eric Schlosser; © 2001; Harper Perennial

<http://off-grid.net> – ‘Self-sufficiency, mobility, and environment, how to relax and unplug off the grid’

Producing Your Own Power, Rodale Press; © 1974

The Skeptical Environmentalist, by Bjørn Lomborg; © 1998, 2001; Cambridge University Press

Square Foot Gardening, by Mel Bartholomew; © 1981; Rodale Press

<http://squarefootgardening.com> – ‘The Official Site of Square Foot Gardening’

Notes:

The attached garden layout includes personal favorites of my own, and has been designed for installation in the southeast US. Areas with fewer annual sunny days should place trellises vertically at the north side of the modules, as not as much shade will be needed.

Modules with potato regions need to make sure the ground below the gardening frame has been loosened, and at least somewhat improved for adequate growth of the tubers.

Installing trellises vertically, rather than in an A-frame, requires using longer pipes, so they may be driven into the ground for stability.

Construction Sheet

Parts list:

- 4 1"x6"x6' boards per module
- 4 6' long 1" pipe per trellis
- 1 4' long 1" pipe per trellis
- 2 three-way pipe fittings per trellis
- 10' long 60" wide, 4-6" opening fencing, like page wire, per trellis
- 4 ft³ peat moss per module
- 2 ft² vermiculite per module
- 2 ft² compost per module
- optional: crushed stone for walkways
- ~\$60 per module
- ~\$50 per trellis A-frame
- ~\$400 for 48'x3'x3" crushed marble chip walkways

Module assembly:

- notch each board 12" from each end, halfway through and 1" wide
- using notches for lateral strength, connect boards together to form 4'x4' boxes with 12" 'legs' sticking out of the corners

Trellis assembly:

the trellis is an A-frame, providing vines the ability to grown vertically rather than sprawling on the ground

- connect 2 6' pipes into 'short' side of three-way pipe fitting; make two of these
- connect a 4' pipe across from one angled pair of long pipes to the other, making a swing-set-like A-frame
- slide corners of trellis into the corners of a module to be used with the trellis, orienting the trellis to match the direction of the planned sun needs (trellis can be used to provide shade for plants that don't want lots of sun)
- drape fencing evenly over frame, and secure to pipes

Tree and bush considerations:

- plant raspberry and blueberry bushes at least 20 feet from the nearest building to avoid having lots of bees near dwellings
- plant fruit and nut trees decoratively, or as part of a wind break or privacy screen

See plant plan sheet for a possible configuration of modules

Approximate cost for materials for proposed garden layout, including all 8 modules, initial soil improvements, trellises, and crushed stone walkways between the modules: \$1030

Plant legend:

Ca	carrot	Mg	marigold	Ce	celery
Jp	jalapeno pepper	Hm	cantaloupe	Gp	green pepper
Tv	vine tomato	Bb	bush bean/pea	Tc	cherry tomato
Co	corn	Ns	nasturtiums	Wm	watermelon
Po	potato	Sw	strawberry	Le	lettuce/spinach
Bv	vine bean/pea	Ga	garlic	On	onion