

What is a Sustainable Garden?

I was planning to jump right into the guidelines for managing a sustainable garden until I realized that there are many levels of sustainability and many choices for the gardener to make. How you define it, determines how you practice it and what guidelines you use.

The ultimate sustainable garden system would mimic nature by requiring no inputs from the gardener – no water, no fertilizer, no compost, no nada. Achieving that in a southern New Mexico food garden would provide a dependable diet of beans and weeds, with the possibility of corn, amaranth and squash in wet monsoon years.

So where on this slippery slope of sustainability do you wish to perch? Dry gardening in the desert is an interesting experiment – but not dependable. I have grown tepary beans without irrigation and got some yield from Hopi Black Pintos by using water harvesting and good timing. Nevertheless, I consider additional water a necessity for sustainable gardening. What else can you add and still be sustainable?

For the purists, the answer is nothing. Your garden would run on sunlight and sunlight would meet all of its energy needs – just like natural systems (with some exceptions). The key to maintaining a “nothing added but water” garden is converting enough sunlight into nitrogen and growing enough organic matter. To provide site grown nitrogen rich organic matter, while growing food to feed the gardener requires a disciplined year round approach to intercropping and rotation planting. Success lies in how you manage the legume cycles and how you maintain organic content in the soil. I have also found that managing the waste flow from the kitchen through the worm bins and into the soil to be an invaluable way to compensate for my miscalculations in soil nutritional needs.

If you import organic matter and organic nutrients into the garden you will be able to produce more food per square foot, since less space and time is required to grow legume crops that only enhance soil nitrogen. “Sunshine only” beds in my backyard sized food garden produce about half as much food as those that receive compost imported from the outside world. Therefore, parts of my garden get outside inputs (compost and organic nitrogen) and parts do not. My decisions are based on soil condition and growing space. If I don’t time and space to grow one or two legume crops in between other heavy feeders then I add compost to the surface of the beds. When I have time and space to use legumes and sunshine, I do that.

Guidelines for a Sustainable Food Garden

- Do not dig, plow or roto-till the soil except to establish new growing beds. You can start new beds without disturbing the soil, but it is faster to open up the soil and add organic matter. Once this is complete keeping the soil open and rich is a natural process.

- Keep the soil covered with organic mulch. Mulch moderates soil temperatures, reduces evaporation and feeds the soil dwelling organisms that breaks down organic material into the elements that plants use. There are some exceptions to always keeping soil mulched, but it a good general rule to follow.
- Grow crops in beds of mixed plants. I treat the growing beds as special ecosystems where I disturb the soil as little as possible. Occasionally it will need loosening to increase its ability to hold air and water. Not digging up the soil enables me to grow annuals and biennials together and maintain a continuous cycle of intercropping and rotation planting.
- Leave all roots in the ground, except for the ones you eat. Consider the size of a plants root system in proportion to the above ground part. Some plants may have two to three times the vegetative growth in roots that they have in aerial vegetation. As the plant activity changes the composition of soil community will change, the roots will decay in place, making elemental nutrients available to the new living roots and making passageways deep into the soil for air and water.
- Leave some plants to bloom, produce seed and complete their whole life cycle. The complex relationship between plants, roots and soil organisms requires the wholeness of a complete cycle. The blossoms will provide nectar and pollen for insects and preferred plant juices for aphids and a host of other subtle and essential factors in the food garden ecosystem.
- Rotate and intercrop with legume to add nitrogen to the soil. The nitrogen required for plant growth is free, if you let those nitrogen-fixing microbes work for you. When you plant legumes and have eaten your share, cut them back, use the tops for mulch and leave the roots full of nitrogen nodules to decay underground. That will keep the soil open, aerated and rich.
- Return unused produce (kitchen waste) to the garden as vermicompost. We actually consume a small amount of what the garden grows, with a few exceptions. The uneaten parts are either left in the soil (roots), used as mulch (and eventually returned to the soil) or go into the worm bin (and are eventually returned to the soil)

Seeing the garden as a managed yet self-sustaining solar powered community of edible plants can radically alter how you garden in ways that are both liberating and demanding. My personal experience of this transition has been a constant engagement in observation, exploration, discovery, success and failure. For in my garden I seek and find myself as imperfect as that may be.

till next time,

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