

A Vibrant Living Thing



Recognizing that our gardens are complex, dynamic environments- Not mechanized factories for production, is the key to human scaled farming. Manufactures of soil amendments would have us believe that every backyard gardner should emulate commercial techniques, creating miniature versions of big agriculture, *and* repeating it's many mistakes. Industrialized agriculture that has only been around for around 100 years, yet, over the long span of post agricultural humanity, people in cooperation with plants, seasons, animals, & available resources have fed themselves, their animals, & produced fiber that clothed them.

My operating principle has always been; 'As *natural beings*, it can't be that hard to secure food'- **BUT**, the absolutely necessary addendum to this is:

If we do the right thing.

That may be the hardest thing. Who knows what the right thing is anymore? Generations of observation, and wisdom have been lost or set aside as agriculture has *progressed* and diminished- Left to 'experts', the practice of growing has been established and codified as an extractive process. **Unfortunately, this is exactly the opposite way that nature operates.**

The additive process of natural production is based on growth, which invariably brings decay. As the cycle repeats endlessly, countless generations of living organisms participate in transforming, recombining, and, adding to the raw materials that sustain everyone and everything on the planet.

With this foundation, I seek to grow food as intuitively as my modern mind can manage. I defer to no expert opinion, but observe conditions, and approach the problems of pests and nutrients conservatively, mimicking nature with tolerance and adaptation. The results speak for themselves. As I daily, year round, eat fresh food from my garden.

Relying on the garden for a constant supply of nutrition necessarily becomes a way of life.

There is no separation in nature, a true integration of living *and* lively hood is required. Acquiring sustenance is an ongoing and necessary challenge that requires a commitment to the process.

The aphorism:

The best fertilizer is the farmers shadow-

exemplifies this principle. Success depends on daily participation, and observation. The cycles of the garden are always churning, there is no beginning or end to the garden, just the process. This can make starting a garden from scratch a challenge, but once the appreciation of cycles is established, a holistic approach develops priorities organically, and the wheel of the year turns evenly.

A plant in it's proper time, given a decent chance, can't help but grow & prosper. The decent chance is simply; Adequate tilth, nutritive material, space, sun, and water. Tilth, the physical condition of the plant supporting soil assures adequate permeability to the essential elements of air and water, and allows expansive root development so the plant can find the resources it needs to build its cells and complete its encoded lifecycle.

Nutrition consists of organic material, anything that has lived, and the biota that supports the break down to it's molecular components, along with minerals. The building blocks of new life. Minerals come from rocks- every soil in the world has the potential to grow plants.

Some rock is weathered into soluble forms that plants can absorb directly through their roots, recycled back through the decay process, the limitless resources available in the crystalline structures of the rock can provide the essential nutrients plants need to be healthy and disease resistant.

Every spoonful of healthy soil contains a billion or more microorganisms, thousands of tiny creatures who, along with earthworms- digesting, dissolving and excreting, gradually improve soils. The mineral cycle is that; **A cycle**, that began with bare rock, some bacteria, fungi and algae. These microorganisms use enzymes and acids to break down the rock and access nutrients. With no soil, the bacteria, fungi and algae form symbiotic relationships to create a plant like species called lichens. These communities can then offer a home

to mosses and other 'successional' species.

Gradually over time, the cycle of growth, death and decay builds enough soil for whole plant communities to thrive.

The more diverse the plant community the better overall access the minerals in the soil. Different species have different root depths, soil preferences and water tolerance. The plant grows deep roots, as the foliage develops mature leaves, it access a higher concentrations and a wider range of the soluble nutrients. Minerals leach downwards as rain passes through the soil layers, deep roots transport minerals back towards the surface.

Dead plants, excretions from grazing animals, and other organic matter pass some of these recycled minerals on as soluble minerals, but the real potential to make free fertilizer forever is in the so-called '**microbial bridge.**'

The crucial, **sugars of life**- a juicy cocktail of '**liquid carbon**'- attracts and feeds bacteria and fungi who, through solubilizing rock mineral, have a biomass filled with the essential nutrients our plants can't access. In turn, these bacteria and fungi attract predatory organisms like protozoa and fungal eating nematodes who eat them, releasing nitrogen, phosphorus, sulphur, magnesium, potassium sodium, iron, zinc and more, in a plant available form next to the plant roots where it can be easily absorbed - with no waste & no leaching. All created by the photosynthetic capacity of plants leaves, the fuel for this process- Starlight from our nearest and dearest, the **SUN.**

But the Problem is:

Inorganic fertilizers; herbicides; fungicides; insecticides; wormers; antibiotics; irrigation; tillage; overgrazing; monocultures, reduced diversity; & leaving soil bare are all hugely detrimental to this microbial cohort.

Inorganic fertilizers are highly destructive to underground life. Nitrogen- even though it makes up 80% of our atmosphere, is a plant's most limiting element. The stable triple bonded molecule makes it hard for life to access unless it is converted or '*fixed*' into Ammonia (NH3). In a natural system for nitrogen to be available to plants, it needs to be '*fixed*' by nitrogen fixing bacteria. This plant available form of nitrogen soon gets gobbled up and through the actions of a diverse soil food web including bacteria, mycorrhizal fungi and their predator's; it's then recycled into different forms through excretions.

It's not just legumes that are associated with the biological nitrogen fixing process, any green plants can be involved in exchanging liquid carbon for plant available nitrogen. This process is very stable and happens 'on demand' with no leaching or waste.

Over 100 million tons of synthetic fertilizer is now used annually, it has facilitated massive population expansion. Now approximately two billion people rely on food produced from this high energy, unsustainable form of fertility.

Up to 80% of synthetic nitrogen fertilizer applied is lost and ends up in our water courses and eventually the ocean. Nitrate runoff causes an explosive growth of algae which in turns sucks oxygen from the water as the algae decay. This sucks the life out of the seas causing so-called 'dead zones', like that of the 'Gulf of Mexico dead zone' which extends over 20,000 square miles every summer, or the annual Eel river toxic bloom.

Even the small amount that remains to be utilized in your soil could be causing more harm than good. Every form of synthetic fertilizer disrupts natural balancing, and damages the potential effectiveness of your soil biology.

-Joshua Golden

IF YOU BUY SOIL-
PLEASE, DON'T CALL
YOURSELF A FARMER



JULY

slack mouthed, drunk as fish
out of water, we
billow in the heat, the bed
sogged with sweat, the
cat gaping on her side,
the mercury

beyond all toleration. Last
night I dreamt lepers
wading the Pacific, your
lips blistering my skin
your hands heavy
& empty:

my hollow ballast -
all the air burning

Holding Your Name

I have stopped numbering my pages.
The calendar curls back against the wall
blameless & white
repeating always the same day, the month
open, a smooth bed, empty

Empty the weather passes with your step.
I am always opening the door.
The rain comes in, blank, faithful as breath
holding your name. I have stopped
pretending reason; love is no safe room.

Though the stones are speaking I cannot
hear. The wind tightens on my face, the sky
broods its dull warnings. Grief
that mild bird has turned its head; oh my dear
we cannot stop dying.

Mirrors Do Not Give You Back

The chairs, those plush madonnas
stretch their arms, pretending
faith. Your absence lies
on everything like dust.

I keep my own time now,
estranged from all your clocks.
Though roses bloom
on each numb wall

printing their thorns, pink,
& vapid as old love,
we have all sprung
tearless faces

& will not mark your loss.

Poems by Kathy Epling

from her unpublished manuscript:
"LIKE THAT BIRD, STUNNED"



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