Simple Steps to Organic Gardening (continued)

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In our last article we discussed general organic gardening steps and focused on the importance of soil health in organic gardening. Here we will discuss amendments and fertilizers, the importance of diversity in your garden and pest/weed management.

Organic Fertilizers & Soil Amendments

Ever wonder what the difference is? An *amendment* is used to modify the physical properties of soil such as water retention, aeration, drainage, and structure. A *fertilizer* is used to add nutrients to your growing environment. Many amendments also add nutrients and many fertilizers also modify physical structure.

Common organic soil amendments include sand, compost, sphagnum peat and worm castings. If you do nothing else, make sure that you amend your garden with compost every year. It is the very best source for necessary organic matter and soil biology. The use of other amendments is dictated by availability, personal preference and your soil environment.

Fertilizers replenish the nutrients that are continuously consumed by your plant life. Most nutrients in organic fertilizers must be converted into plant-available form by the biology in your soil. Because of this, they are by definition, slow release fertilizers with little risk of plant burn (some exceptions) or nutrients leaching into water supplies. They provide a much broader range of minerals than chemical fertilizers do and can also provide natural plant growth hormones, enzymes and amino acids, all important elements to healthy plant growth.

Organic fertilizer components come primarily from four categories, each with their own unique pros and cons. Some components are mined material and not 'organic', meaning they did not come from something that was once living. These materials are however, natural products and can conform to the standards defined for use in organic agriculture.

When selecting soil amendments and fertilizers for your garden, there are several questions you should consider in addition to their amending and fertilizing capabilities. Are they made from renewable ingredients? What is the environmental impact of harvesting? What is the risk of source contamination?

- Plant-based (e.g., alfalfa meal). Pros - rapidly renewable. Cons – contamination risk (pesticides, GMO)
- Animal By-Products (e.g., manure, blood meal). *Pros* – renewable waste. *Cons* - contamination risk (growth hormones, antibiotics, pathogens, GMO feed)
- Fish By-Products (e.g.,fish bone meal). Pros – renewable waste. Cons – contamination risk (heavy metals, pharmaceuticals)
- Mined (e.g., greensand). Pros – typically a plentiful resource. Cons – non renewable, contamination risk (heavy metals, salts)

Guano (seabird/bat feces and urine) has gained some attention as an organic fertilizer in recent years due to high levels of nitrogen and phosphorous. Unfortunately, harvesting guano is extremely destructive to habitats and the guano itself has a high level of pathogen contamination risk.

Humic and fulvic acids are a very interesting category of products that are generally not well understood by consumers. They are analogous to a concentrated fully-decomposed compost, an excellent food source for microbiology and have been shown to significantly improve plant uptake.

Organic Diversity

Following organic gardening practices means taking a holistic approach to nurturing our plant life. We maximize our use of the abundant natural processes and resources that nature provides to help us achieve our gardening goals. Part of this is fostering a diverse population of microbiology, insects, plants and habitats.

In our previous article we discussed the diversity of soil biology. Insect diversity plays a key role as well. The majority of insects we see in our gardens play a beneficial role that we should encourage.

Pollinators. Virtually all seed plants require pollination and this is often accomplished by a diverse group of pollinators including bees, bats, birds and butterflies. Nectar and pollen attract a variety of these pollinators to your garden (see www.pollinator.org/resources/pollinator_Syndromes.pdf). Select flowers that provide an abundance of colors, shapes, scents and blossoming schedules. Plant your flowers in clumps.

Select a diverse mix of indigenous plant species for your garden and landscape. These species have developed naturally to thrive in our local environment. Non-native plants contribute to the decline of local species by competing for resources (water, space, sunlight and nutrients). Not only will native plants flourish in their natural environment but they support the needs of the local wildlife and insect population.

Appropriate habitats encourage pollinators and other insects. Providing water, nesting sites, materials and overwintering shelter are some key habitat elements. Bat houses for bats, patches of long grass for caterpillar eggs and areas of bare ground for ground-nesting bees are just a few ideas.

Pests and Weeds

I had pests partially eating my tomatoes during a very dry period last summer. After placing a watering bowl away from my garden but in the general vicinity, my tomato pest problem disappeared. The critters weren't really interested in the tomatoes but had been searching for water and I provided an easy alternative. Not every problem is as simple to solve as this one but there are usually environmentally friendly alternatives to pesticides and traps.

While healthy plants are less susceptible to disease and pest damage, they are not immune and you should take steps to minimize the risk. Good garden planning establishes natural processes that prevent pest and disease introduction. Rotate the location of vegetables and vegetable families each season. Companion planting (also called inter-cropping and plant associations) can help discourage pests and attract beneficial insects.

Appropriate maintenance practices will also help keep your garden pest and disease free. Harvest fruits and vegetables as soon as they are ripe. Remove plants that are diseased (immediately) or unproductive. Remove weeds from the garden area.

Even with proper planning and maintenance you may still have unwanted and damaging pests. Insecticidal soaps (such as Safer or Dr. Bronner's) are non-toxic and work well but can also damage beneficial insects so use caution when you apply.

Weeds. There is no magic bullet to combat weeds for the organic gardener. Maintain a thick layer of mulch on uncovered ground. Some folks use straw but beware of weed seeds in the straw. The best method to get rid of weeds is to pull them on a regular basis with your favorite mechanical tool (I have tried everything else).

The Joy of Organic Gardening

As a life-long organic gardener, I get great satisfaction knowing that I am helping to maintain a healthy environment. My children and pets, along with the local wildlife and water supplies, are safe from toxins in my small part of the world. Our back yard is full of diverse plants, insects and wildlife. Year after year, the flower beds are full vegetation and brilliant colors and our garden produces an abundance of healthy, toxin-free fruit and vegetables.