

## Organic Grow: Soil First

by Rick Weller, Founder of Organically Done Plant Products

Growing with organic methods provides a wide range of benefits – protecting our environment from pollutants, no consumption of scarce natural resources and yields of high-quality contaminant-free product. It only makes sense that if our goal is to produce a medicinal product to improve our health, it should be done in a healthy fashion.

**"OK, I'm going to grow organically".** You may wonder what this really means and the answer is quite simple: organic growers develop and maintain their growing environment using natural products and processes. Of course, like everything else, the devil is in the details and we'll spend the bulk of this article discussing the most important of these, soil health.

A common misconception is that by eliminating chemical fertilizers and pesticides you are growing organically. While partially true, there are other aspects to consider that are keys to your success. Rather than *'I'm not using chemical fertilizers or pesticides, therefore I'm growing organically'*, our mindset should be *'I'm supporting a healthy soil and ecological environment and part of that is by not using chemical fertilizers or pesticides'*.



**Why is Healthy Soil Important?** While indoor growing differs in many respects from outdoor growing, the goals remain the same: create a healthy environment that supports healthy plants. Physically, your soil mix provides structure for air and water flow, easy rooting and plant anchoring. But It also plays an important biological role, holding and buffering nutrients and providing a habitat for microorganisms.



While you will find a bit less diversity relative to your outdoor environment, each teaspoon of healthy soil contains hundreds of millions of tiny creatures including bacteria, fungi, protozoa, nematodes and arthropods. These are all critical for providing nutrients to your plants (nutrient cycling), maintaining soil structure, controlling disease, promoting plant health and enhancing plant growth.

A healthy soil provides the needs of your plant: physical environment, water, air, food, vitamins, hormones, amino acids, etc. Like humans, when health is at an optimum, plants grow strong, robust and their natural defenses are more capable of providing protection from stress (disease, pests, temperature variations and inadequate water conditions).

### Developing Healthy Soil

OK, so healthy soil supports healthy plants but how do you create soil health? The answer is complex (pH, CEC, air and water flow, nutrients, biology, etc.) but the approach is fairly simple. Let's start with developing a foundation.

Rich top soil, made up of clay, sand, silt and organic matter is nature's answer to a perfect habitat for soil biology and plant support. However, it has its drawbacks when growing indoors. Industry has moved to soil-less mediums that, while fine for chemical growing in which soil plays a limited role, are not a substitute for top soil. For your organic environment, try a mix of top soil, organic matter and drainage components.

Top soils provide an excellent starting structure and habitat for indoor growing but are heavy and easily compacted in pots. Quality soils available commercially should be free of weeds, pests (in general) and disease. Organic matter can come from many sources including composts, peat moss, coco coir, etc. Organic matter provides structure to the soil, food for microbes, water and nutrient holding capacity.

A common 'organic' drainage material is perlite but many new products are being introduced to the market. It is important that you blend your chosen material evenly throughout your entire growing medium to obtain an even distribution of air and water.

**Don't forget the biology** - While we now have a soil structure, we may still need soil biology. Organic nutrients are

primarily slow release, meaning they are not initially in a form that can be absorbed by the plant. To be plant available, they must be converted by soil microorganisms in a process called nutrient cycling. If you've added a good, quality compost you should be all set to go. If not, alternatives for providing your initial microbial population include worm castings, teas or packaged biology products.

Pros and cons of soil mix options.

- **Top Soil** - *pros*: sustainable, buffering, habitat, biology source; *cons*: heavy, compaction.
- **Compost** - *pros*: sustainable, organic matter, biology source; *cons*: compaction, potential contamination.
- **Worm Castings** – *pros*: sustainable, biology source; *cons*: compaction.
- **Peat Moss** – *pros*: organic matter, biology source, moisture retention; *cons*: not renewable, pH.
- **Coco Coir** – *pros*: sustainable, moisture retention, air flow; *cons*: may have high salt content
- **Perlite** – *pros*: moisture retention, drainage; *cons*: not renewable, high carbon footprint.
- **Commercially-Bagged products** – *pros*: available; *cons*: often processed to destroy biology.
- **Packaged Biology Products** – *pros*: biology source; *cons*: limited biological diversity

There are many soil mix recipes on the internet and everyone has their opinion but remember, diversity is the key to life as well as soil and creating a nice diverse mix can provide a multitude of benefits. Develop your soil and visually inspect its structure and drainage capability before using. After adding your biology source, mix an amount of organic fertilizer throughout and keep your mix slightly damp for a few weeks to promote biological activity and the nutrient cycling process.

You now have a healthy soil mix which can provide the foundation for multiple successful growing cycles. You need to provide a steady source of nutrients as these are consumed by your plants. Unless your environment develops disease or a pest infestation, clean your soil of plant debris and re-mix the soil from multiple pots together, amending with soil mix components as required.

There are many concepts to discuss for successful organic growing and we will get to those in later articles. But, as in all aspects of life, beginning with a solid foundation is your key to success.

**What results should you expect?** As with everything, opinions vary widely. Common perceptions include:

- Organics produce better tasting product
- Organics produce higher nutritional value
- Organic products demand a market premium
- Chemicals produce higher yields
- Chemical growing is easier

Organic growing requires a different focus and mindset and, while each of us needs to develop our own opinion, those who do switch away from chemicals rarely go back.

**Coming next:** Organic amendments and fertilizers



*Organically Done ([www.organicallydone.com](http://www.organicallydone.com)) is a Michigan manufacturer of organic fertilizers and soil amendments. Their mission is to produce high-quality truly organic products that provide what your plants need while being free of potential contaminating sources that are found in many of today's "organic" alternative – NOT ALL ORGANICS ARE CREATED EQUAL.*