## **Our Soil Building Toolbox**

Healthy soil stores more water, nutrients, and minerals than depleted soil, and also provides a home for trillions of beneficial organisms, which provide all the nutrients that plants require. Just like humans cannot take a handful of soil and eat it, plants too require nutrients to be made into an available form before they can take them into their roots. Bacteria, fungus and other soil microbes are responsible for digesting soil organic matter and minerals, and putting those nutrients into a form available to plants.

**Worm Castings-** What comes out of the back end of a worm is the most biologically active soil on earth. This amazing soil amendment seeds the surrounding minerals and organic matter with the necessary beneficial microbes to digest it, and results in highly productive soil with a higher capacity for storing nutrients and moisture. Only a thin skiff of castings is required, but more is always better. No risk of overdose here.

**Kelp / Alfalfa pellets-** Pellets of kelp and alfalfa help feed soil organisms. These pellets are full of nitrogen, protein, and minerals, which ensure that microbes will have all the micronutrients required to build soil. Expanding pellets also alleviate compaction and store moisture.

**Glacial rock dust**- Limestone rock dust is made up of marine organisms like coral and plankton. When this powder is spread onto the soil, it provides a wealth of easily digestible minerals, and this allows the soil microbial life to flourish. The increase in microbes that result from rock dust tends to neutralize any pH issues in the soil, as well as increase the soil's capacity to store nutrients and moisture. Add up to 1 pound per square foot of garden area, and work into the soil.

**Chicken & Cow Compost**- A well-composted manure pile from chickens and cattle is an excellent organic amendment for soil. Compost helps to fertilize soil, provide organic matter, and contains trillions of organisms, which will all help to feed the plants. Compost also increases the water and nutrient-holding capacity of the soil. Composted manure from horse, sheep, and other animals can also be beneficial.

**Coffee Grounds-** Used coffee grounds are an excellent source of nitrogen and organic matter for the soil. Up to 1/3 of the soil (by volume) can consist of used coffee grounds so don't worry about overdoses.

**Straw / wood mulch**- Since nature never leaves bare soil, we try not to either. A mix of straw and wood mulch on top of the soil prevents weeds from growing, moisture from evaporating, and soil from eroding. This organic mulch slowly breaks down to fertilize the soil, as well as providing carbon dioxide and habitat for beneficial fungus and insects. Leaves, grass clippings, weeds, and any other organic matter can be added to the mulch over time. Three to eight inches of mulch should be left on the surface as opposed to being worked or tilled into the soil. When planting, pull the mulch aside, seed into the soil surface, and place the mulch over the seed. The seedling will easily grow through the mulch layer, at the same time being protected from frost and wind.

**Compost Tea**- Compost tea is brewed using high quality aerobic compost, and the brewing process extracts the microbial population into solution. This solution can then be sprayed on the plants and soil, which provides a huge boost in plant-available nutrients, as well as several other benefits. Compost tea has the potential to replace chemical fertilizer, even on large-scale farms.

One of the best parts of the whole soil building process is that a healthy garden soil requires much less tilling, weeding, and watering. The effect of mulch and amendments create a healthy, weed-free soil that eliminates compaction on a molecular level, stores huge amounts of water and nutrients, and is able to produce amazing crops through drought and flood cycles without ever drying out or eroding. The plants that are produced from this soil will be frost resistant, disease resistant, pest resistant, and of course, very healthy for the consumer. What could be better than a healthy garden that requires almost no maintenance, and gets better and better every year?

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Start with healthy soil.

