Watch where you step

By Julie Silva

Soil cultivation. Photographer Laurence R. Costello, UCCE San Francisco-San Mateo. Copyright UCANR

Where you are standing this very moment is on soil that is living, breathing, and reproducing, even below the floor of your house. The soil you are standing on consists of 95% minerals that are on a constant downward spiral of reduction in size from water, ice, wind, and plant roots. As the particles break down they go from small rocks to dirt. Those minor particles are home and food to bacteria, mosses, lichens, microbes, and plant roots. As these organisms fill their needs and die, other organisms use the nutrients and follow the same path. Where you are standing, there are billions and billions of organisms living, breathing, dying and decomposing.

Soil is a living, breathing building block of the food chain. As a living being, it needs water and food. The watering aspect has a dynamic of too little, too much, or just enough. Food is another story. There are two types of food or fertilizers, organic or synthetic. They both provide food for your plants but in two very different ways.

Synthetic fertilizers appeared in abundance on farms in the 1940s. Then the great debate started between organic versus synthetic. Both types of fertilizers will feed your plants but with different results and time elements. Synthetic fertilizers supply the basics (Nitrogen N, Phosphorus P, and Potassium K) quickly to the plant. Organic fertilizers have plant nutrients in lower concentrations that take longer to reach the plant. So what is the real difference?

The little guys under your feet are actually your plant's source of food in the organic world. Microbes, soil bacteria, and fungi have to decompose the organic material into a food form. Depending on the weather and temperatures the big five that release nutrients from organic materials are microbes, fungi, bacteria, worms, and water. Feeding your soil, and in turn feeding your plants, organically is a balanced diet with minerals, like a multi-vitamin after dinner. The synthetic side is like eating a candy bar and having to keep your energy up by eating more candy bars when your sugars drop.

The best choice for soil and plant food in your yard is compost. Compost is like the jack- of-all-trades. Compost supplies nutrients and micronutrients for plants. Compost also builds the structure of the soil, increases moisture in the soil, breaks up clay soil, adds oxygen by providing air pockets and helps to balance pH. On top of all of that, the most important thing is that compost feeds the microbes and worms. Compost is a soil amendment and not a straight fertilizer. It improves soil on many levels, adding long-term benefits. Use your compost as the base to your organic food plants. There are other things you may add to the mix.

If compost helps to feed your plants, what do the microbes, bacteria, fungi, and worms like to eat? What kind of store sells microbe chow? Different types of microbe chow create different types of results. Start with alfalfa meal. Alfalfa is high in vitamins, N P K, calcium, magnesium, and other important minerals. If you do not have alfalfa meal, rabbit pellets are a substitute. Bat guano is another good choice; it contains nitrogen and key trace minerals. Since bat guano is not in production except by bats, it is in a pure form without added chemicals.

Blood meal will supply nitrogen and phosphorus. Bone meal is a raving favorite of tomatoes with calcium and phosphorus. Fish meal is a good source of nitrogen. Greensand is high in potassium and iron. Kelp meal is made from seaweed, adding potash and micronutrients. Earthworm castings are high in bacteria, calcium, iron, magnesium, and N P K.

Just like synthetics, organic fertilizers can be overused. On these hot days applying fertilizers may be detrimental to your plants and chemical makeup of your soil. Fertilizing on just a moderate day may be done by watering the plant first, applying the fertilizer, and then watering the fertilizer into the soil. When it is hot you are better off waiting until a cooler day.

Both of these fertilizers will make your plants grow strong and healthy. Organic fertilizers have less of an impact on the environment, will build your soil into a super status, and give your plants the food they need. In this case, patience is a virtue and time is on your side. By building and feeding your soil your garden will be healthy and strong for years to come.

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