

CULTIVATE COMMUNITY GARDENS
APPROVED SOIL AMENDMENTS, MULCHES, COMPOST INGREDIENTS AND PEST CONTROLS

SOIL AMENDMENTS

Healthy soil has a good balance of nitrogen, phosphorous and potassium as well as minerals, micronutrients and healthy, active microorganisms. Healthy soil generally has a balanced PH although some plants prefer a more acid or alkaline soil. Organic material eventually breaks down and provides the essential soil ingredients, food for abundant microorganisms, and carbon which keeps soil moist and porous.

ORGANIC MULCHES

Organic mulch is organic material added in a one or two inch layer on the soil around plants. Mulch helps prevent weeds and retain moisture and slowly breaks down to enrich the soil. Most mulches can also be added to the compost pile. Some can be mixed directly in the soil as soil amendments. Don't pile mulch directly around plant stems-try to leave an inch or so.

FREE AMENDMENTS AND MULCHES FROM THE KITCHEN

Organic Coffee Grounds-A good mulch, soil amendment, and compost ingredient. Coffee is typically grown in mineral rich mountain soil which has important nutrients that Florida's sandy soil lacks. It is also nitrogen rich. Coffee grounds are acidic so don't add too much directly around tomato plants. You can add directly around acid loving plants like blueberries, carrots, cabbage, garlic, mint, rosemary and radishes. Coffee grounds also attract earthworms (aka fertilizer factories) which neutralize the acidity of coffee grounds and decrease the level of heavy metals in soil. Coffee grounds can also be used as a barrier to deter slugs.

Organic Egg Shells-Crumble and add directly to soil, use on top of soil to create a slug and snail barrier, or add to the compost pile. Eggshells provide calcium which is essential to building cell walls. Plants that benefit most are tomatoes, peppers, eggplant, broccoli, spinach, lettuce and Swiss chard.

Organic Tea Leaves-Contain nitrogen, phosphorous and potassium as well as trace minerals. Use as a mulch, a soil amendment or compost pile ingredient.

FREE FROM THE YARD (IF YOU OR A FRIENDLY NEIGHBOR DON'T USE CHEMICALS IN THE YARD)

Leaves or Leaf Mold-A good mulch or compost pile ingredient. Leaf Mold is composed of leaves that have decomposed without additional compost ingredients-essentially old leaves. Leaf Mold is a better mulch than newly fallen leaves. As a mulch, good for maintaining soil moisture, suppressing weeds, and feeding earthworms and microbes essential for plant growth. Leaf mold absorbs as much as several hundred times its weight in moisture. Leaves are also a great addition to the compost pile to provide carbon to balance out the nitrogen rich green leafy material that our plots produce. It would be good to have a bag of leaves and/or a bale of hay or pine straw near the compost pile to add in equal proportions when we add green plant matter.

Lawn Clippings-Grass clippings are nitrogen rich but also provide potassium and phosphorous equivalent to a 4-1-2 fertilizer. They are “fuel” for the compost pile and need to be balanced with carbon rich material like leaves or dry straw in roughly equal proportions.

Pine Straw-A good, widely available organic mulch that allows water filtration to the soil, preserves soil moisture and suppresses weeds. Pine straw very slowly adds acidity to the soil so it's great around acid loving plants like blueberries, rosemary, garlic and mint. It reduces blight by reducing splashing soil on the lower leaves. Pine needles are also a good source of carbon for the compost pile mixed equally with green matter such as garden waste or fresh organic lawn clippings. Although pine needles have a PH of around 3.2, the PH is neutralized by composting.

FROM THE STORE

All Purpose Organic Fertilizers-A large number of all purpose organic fertilizers are available at stores such as Ace Hardware, Home Depot and Lowes. Organic fertilizers tend to release nutrients to plants “when needed” and are less likely to burn or damage plants if overused. They release nutrients immediately upon application and over time. Fertilizers with ingredients like bone meal and ground minerals can feed soils for years. There are organic fertilizers blended for different vegetables and flowers so shop around and read the labels. Our plots are 48 Sq feet. Most 4 lb bags cover about 60 sq feet.

Dry Commercial Organic Fertilizers: Dr Earth Premium Gold Organic All Purpose Fertilizer, Espoma Organic Garden Tone Herb and Vegetable Food, Jobes Organic Vegetable and Tomato, Jobes Organic Granules All Plant Food, Kellogg Garden Organics Tomato Vegetable and Herb Fertilizer, Miracle Grow Organics All Purpose Plant Nutrition.

Fish Emulsion: Fish emulsion is typically a concentrated liquid and needs to be mixed with water. It provides an immediate nitrogen boost and is typically 5-1-1. It also provides a boost to essential soil microbes. It is a bit smelly but the smell dissipates quickly.

Other Liquid Organic Fertilizers: There are other commercial products available such as worm castings tea and urea tea (99% nitrogen) for more quickly correcting soil imbalances. My preference is for milder, slow release fertilizers but liquid fertilizers can be useful for specific problems or a quick boost.

Earthworm Castings: An ideal organic, nutrient rich, slow release fertilizer that is mild and beneficial to all plants. It has a neutral PH of 7.0. Earthworms convert nutrients to a more bio available form for plants. Their castings are a gentle, effective and natural fertilizer and earthworms are tiny organic fertilizer factories. A healthy earthworm population is a sign of a healthy, organically rich, bio active soil with active beneficial bacteria. They also improve soil moisture retention which is important in Florida.

Organic Mushroom Compost: An organic slow release fertilizer, soil amendment or mulch made of spent (used) mushroom compost and sold in bags at hardware stores. It is not recommended for germinating seedlings because it can be high in salt. Contents vary so read labels.

Organic Cow Manure Compost: A good soil amendment or top dressing. High in nitrogen and key nutrients (typically 3-2-1 NPK). An excellent source of nitrogen and organic matter. Contains beneficial bacteria which make nutrients more accessible to plants.

Organic Blood Meal: A dry powder made from blood and typically used as a high nitrogen (13%) fertilizer or top dressing. It is good for heavy nitrogen feeders like tomatoes, cabbage, cucumbers, squash and corn.

Organic Bone Meal: A dry powder made from bones. It is a calcium and phosphorus rich (typically 15%), slow release fertilizer that is easily absorbed by plants and is especially beneficial for root crops such as onions, beats, radishes and carrots.

Earthworms: Earthworms are an organic gardeners best friend and a sign of healthy soil (aka “fertilizer factories”, “natures plow”). They convert organic material into a PH balanced readily available nutrient rich fertilizer. They also help aerate the soil. Earthworms such as night crawlers can be purchased alive at many bait stores or online. If you add them to your plot and supply organic material, they will multiply and help ensure that your soil remains well balanced and healthy. If your soil already has earthworms, keep them healthy by adding organic matter regularly.

COMPOST PILE INGREDIENTS AND TIPS

All organic material breaks down. A good compost pile blends organic ingredients in a proportion that speeds the breakdown by providing a mixture of high nitrogen and high carbon materials with small amounts of soil, water and air. Green garden material, vegetable scraps, fresh (wet) organic grass clippings, and coffee grounds tend to be high in nitrogen and provide “fuel” for the compost pile. Leaves, pine straw, dry straw, dry grass clippings, bark and wood chips tend to be higher in carbon. Mixing these materials with small amounts of soil which contain bacteria that feed on the nitrogen and carbon will accelerate the breakdown of organic matter and provide beneficial heat. Heat speeds decomposition and neutralizes seeds in the compost which reduces weeds in the garden. Turning or mixing the material occasionally keeps the process going. A balanced compost pile is best but any organic material will eventually turn into compost so mistakes are self correcting with time.

Kitchen Scraps; Coffee grounds, egg shells, and raw vegetable scraps are ideal and nitrogen rich. Raw fruit peels and scraps are also excellent. All of these should be mixed into the compost pile and blended or covered with dry, carbon rich material like leaves, pine straw or dry straw to deter insects and balance out the nitrogen. You can purchase kitchen “compost bins” which are 1 or 2 gallon containers with charcoal filters for storing your kitchen waste until you can put it in the compost pile. Or you can put it in a plastic bag with the top tied if the ingredients don’t emit odor or attract bugs. Don’t use kitchen waste with salad dressing, butter, sauces, etc. in the compost pile. Raw, organic, uncooked plant scraps are ideal.

Yard Waste: Leaves, pine straw and grass clippings from yards that aren’t chemically treated are great compost ingredients. Leaves, straw (aka hay) and pine straw are carbon rich and fresh grass clippings are nitrogen rich. Blending them is ideal. Sawdust from untreated wood is carbon rich as is shredded bark or wood chips from untreated wood. Treated wood has been chemically treated for outdoor use to slow rot and should not be used as a garden additive.

PEST CONTROL

Healthy Soil: The best form of pest control is a healthy, balanced organic soil. Healthy, organic soil provides the basis for healthy plants which are more pest and disease resistant. Insects and pests are often attracted to weak, unhealthy plants. Similar to humans, healthy plants have better immunity to ward off pests.

Eyes and Fingers: Keeping an eye on your plants and noticing signs of trouble is the foundation of pest control. If you see leaves with holes or asymmetrical leaves that have been munched on you should search for the source. It might be slugs or caterpillars which are easy to spot (although caterpillars are pretty good at blending in) and remove by hand (or gloved hands). Your plants might have aphids which can be green or orange and a bit less obvious because they suck the sap and weaken plants. You might find spider mites which are tiny and live under leaves. They sometimes form what look like fine spider webs. They also suck sap, cause yellowing, and weaken plants. If you see the symptom you can probably find the cause. On line searches of symptoms and causes can lead you to an organic solution.

Diatomaceous Earth: Available commercially, Diatomaceous Earth is a soft powder made by grinding a natural sedimentary rock composed mostly of silica, iron oxide and fossilized microbes. It is used in tooth paste among other products so it is considered safe for humans. It's abrasive qualities enable it to puncture the skin of slugs and caterpillars like tiny shards of glass which dehydrate them and deter them. Crumbled eggshells and dried coffee grounds can also be used as a barrier to deter crawling pests. It deters slugs, snails, ants, mites, beetles and other crawling insects.

Insecticidal Soap: A liquid sprayed on plants which is typically made from potassium salts or fatty acids mixed with water. It is an effective curb against soft bodied pests like mealy bugs or aphids which it kills by dehydrating them. Not effective against chewing bugs like caterpillars or beetles. It does not harm plants and is considered safe for organic gardening. Soap sprays can be purchased or made at home using recipes you can find on line.

BT: *Bacillus thuringiensis* (BT) is a soil dwelling microbe that is not harmful to mammals, birds or fish but is toxic for caterpillars, corn ear worms, cutworms, tomato hornworms and similar pests. It may also harm beneficial insects if overused so use sparingly for infestations only and not as a general preventative.

Milky Spore: A cousin of BT used specifically to kill white grubs which are the larvae of Japanese beetles. White grubs feed on roots and turn into Japanese beetles which feed on a number of vegetables. Milky spore kills the grubs and is effective for several years. It does not harm earthworms, beneficial insects, mammals, birds or fish. If you see white grubs in your soil you can also just pick them out and squash them.

Iron Phosphate: A natural mineral that is the main ingredient in slug and snail killers. It is toxic to slugs and snails and tends to last longer than diatomaceous earth.