SOIL AMENDMENTS AND ORGANIC FERTILIZERS

Worm Castings

Worm castings are worm excrement. They are rich in micronutrients and trace elements, humates, and microbial life, though worm castings do have macronutrients as well. Castings are perfect for potted houseplants and during transplant into the garden for vegetable crops. With abundant microbial life and natural time release (3 weeks or so), they are one of our favorite fertilizers. The Wiggle Worm white bags that we carry are listed as 1-0-0. The red bags of Worm Earth and Worm Castings are approximately 4-3-2 and also have 6-8% calcium. Add at 1 tablespoon per gallon of potting soil for houseplants, or 3 tablespoons per transplant, mixed in the soil directly below the roots.

Bat Guano

Bat Guano is one of the oldest fertilizers known to humans. Legends say that bat guano was so important to the Inca civilization in South America that the penalty for harming bats was death. Bat guano begins as plant life that is eaten by insects, which in turn are eaten by bats. Bat droppings fall to the floor of the cave where millions of guano beetles eat the droppings as their food. At the same time, beneficial decomposing microbes are also eating the droppings. This process composts the bat guano and increases the beneficial microorganisms in the guano. It also rids the guano of toxins and dangerous pathogens. Bat guano contains all of the macro nutrients as well as minor and trace elements essential for plant growth. Guano can be purchased with different NPK ratings for different stages of plant growth. Some examples are 10-2-0, used for vegetative growth; 0-13-0, used for rooting and fruiting/flowering; and 10-13-3, used for both vegetative and flower promotion. Guano can be applied in two different ways: top dressing or through a compost tea.

Sunshine Organic Manure

Comprised of chicken manure, this product is a great base for all outdoor crops. It has an all-around NPK of .5-.5-.5. If you have good soil already, this product alone will suffice in preparing your garden. Manure is also a good product to add to Pro-Mix and other soilless mixes for outdoor applications and container gardens. Also, for vegetative crops such as lettuce, greens, basil, dill, and other herbs, a good addition of manure will be all the food the plants need. Application rates will vary depending on soil condition.

Mushroom Compost

Mushroom compost is the discarded media in which mushrooms grow. It is comprised of peat, manure, and other elements. Mushroom compost is great for micronutrients, trace elements, and some macronutrients. Mushroom compost is a great addition to clay soils. It can also be used to top-dress similar to mulch. People who make their own potting soils can also use mushroom compost. We recommend it be mixed with Sunshine Organic Potting Soil and Pro-Mix to help boost macronutrient content, and for the Pro-Mix to add humates and microbial life. We recommend it for transplants, especially shrubs, vines, azaleas, and the like, mixing 1/3 mushroom compost with 2/3 soil in the bottom of hole to stimulate roots.

Greensand

Greensand is a mined ore called Glauconite. It is mainly potash and hydrated silicate of iron. This ore contains a huge amount of potassium and up to 32 trace minerals. The potassium is not all immediately available (i.e. not water soluble) and will remain in the soil for future gardens. Greensand helps break up clay soils and helps bind sandy soils. Greensand has been gaining in popularity over the past few years, even outside of organic gardening circles, though organic growers have long known the benefits of greensand. It increases plant vitality and vigor, which will help with everything from fruiting to pest control. A healthy plant can defend itself!

Rock Phosphate

Rock Phosphate is 0-3-0. It contains 3% readily available phosphorus but a total of 24% phosphate that will break down over time. This is a “vegan” alternative to bone meal and is used similarly to bone meal. Rock Phosphate also contains about 30% calcium.

Lime

Lime is used to raise the pH of soil. If you do not know the pH of your soil, your local Extension Service will have testing boxes for soil samples, and the State will test it for free. Soil pH is critical to nutrient uptake. Almost all garden and edible plants prefer a soil pH of 6.3 to 6.8. When the pH is outside of this range, the plant can not absorb or use the nutrients that are in the soil, no matter how fertile it is. The main plants prefering a low pH (4.5-5.5) are blueberries, blackberries, azaleas, and rhododendrons.

Crab Shell

Crab shell, as the name suggests, is ground up crab shells with an NPK rating of 2-3-0. Its main benefit, however, is that it contains 23% calcium, particularly good for tomatoes since blossom end rot on tomatoes is caused by a lack of calcium. This slow release calcium will correct that deficiency.

Blood Meal

Blood meal is actually dried blood. It has been run through a centrifuge to remove foreign particles and then dried. Blood meal is an excellent nitrogen source (12-0-0) and releases quickly into the soil. It is a great amendment for corn and other high nitrogen crops.

Bone Meal

Bone meal is ground bone, usually cow. It has an NPK of 4-12-0. This product is great for bulbs and flower gardens. It is also a great source of phosphorus for vegetable gardens. Bone meal also has a high calcium content, around 24%. Bone meal is a slow release fertilizer that is great for fruit-bearing plants. The phosphorus will aid in fruit set and fruit bulk, and also promotes root growth in young plants. Because of its high calcium, bone meal is great for tomatoes, which need an ample supply of calcium. Calcium deficiency in tomatoes causes blossom end-rot. Supplying this calcium will resolve that problem.

Cottonseed Meal

Cottonseed meal has an NPK of 6-2-1. As the name implies, it is ground cotton seed. This is a good substitute for blood meal for people who either don't use blood meal or try to garden without using products derived from animals. Cottonseed meal is also good for trees and shrubs. Certified organic farmers may not use this product because of pesticide use in cotton farming which limits OMRI approval.

Alfalfa Meal

With an NPK rating of 2-0-2, this product contains triaconatol, a natural fatty acid growth stimulant, plus trace minerals. It can be used to make a tea, tilled in, or as a top dressing. It is highly recommended for roses and is a good alternative to cottonseed meal for those concerned with pesticide residue, or for those who want to garden without introducing animal products.

Kelp Meal

Kelp meal has a 1-0-2 NPK. Kelp (Ascophyllum Nodosum), also known as seaweed, is a great amendment to any garden or potting soil. Kelp contains a broad array of vitamins, minerals, and soil conditioning elements. It has natural plant vitamins (like B1) which a lot of synthetic fertilizers try to mimic. Kelp is great for rooting plants, and also one of the best additions when transplanting indoors or out. We recommend kelp to everyone with an outdoor garden, and liquid kelp to people who are transplanting vegetables, trees, and shrubs.

Fish Meal 10-5-0

This product is great for corn and other high nitrogen crops. The can goes a long way (3000 sq.ft.) and for only $8, is a great deal! It does smell like fish, so we don't recommend it for indoor gardeners who have cats. Fish meal is a good alternative to blood meal or cottonseed meal. Fish has been used for centuries by Native Americans as the primary food for crops, especially corn. Stories have it that Native Americans and old farmers would plant a piece of fish below every corn stalk for a successful crop.

Coconut Fiber

Coconut fiber is the husk of coconuts. It expands to about 7 times its size (from the compressed brick). We recommend expanding the coco, then rinsing it thoroughly. Some companies claim that their coco has no salts. We have not found this to be true. Coconut is a great addition to soil for aeration and also to "stretch" the amount of soil in a bag. We have also used it successfully with perlite (10-20% coco, 80-90% perlite) for orchids. Also, mixed at 30% coco, 70% hydroton, it is great for top drip and flood and drain tables in hydroponics. We have also used coco for seed germination, mixed with 1/10 wormcastings for nutrient. Recently, we have begun to use the coco mixed with perlite (1-2 gal perlite for 4 gal coco) with great success as an all-purpose soiless media.

Perlite

Horticultural perlite is a semi-coarse soil additive that improves soil structure, eliminates soil crusting and compaction, and improves drainage and aeration. Among the unique properties of Horticultural Perlite is its ability to work for many years in the soil. It does this because it is inorganic and does not deteriorate. In addition, perlite is chemically inert and has an essentially neutral pH. Because it is sterile, perlite is free of disease, weed seeds and insects. Its light weight makes perlite easy to handle and is clean and odorless too. As a soil additive, mix equal parts perlite and soil. Moisten and mix thoroughly. Firm the mix well around the roots but do not pack too tightly. Water thoroughly. For starting seeds or cuttings, mix equal parts of perlite and soil. Moisten thoroughly and add your seeds or cuttings. Pack gently.

Vermiculite

Vermiculite is used for nutrient retention but also drainage. It is similar to mica, and because of its many layers, it helps hold and disperse the nutrient throughout the growing media. Vermiculite is also known to reduce soil born diseases and root damage during transplantation. Many professional growers make their own seed starting mix using vermiculite mixed with potting soils or coconut.

Peat Moss

Peat moss is partially decomposed sphagnum moss. Its large cell structure enables it to absorb air and water like a sponge. Although peat moss does not contain nutrients, it absorbs nutrients added to or present in the soil releasing them over time as the plants require. This saves valuable nutrients which are otherwise lost through leaching. Peat moss is a natural, organic soil conditioner that regulates moisture and air around plant roots for ideal growing conditions. It will help to save water because peat retains up to 20 times its weight in moisture and releases water slowly as plants need it. Peat moss aerates heavy, North Carolina clay soil and helps bind sandy soils. Furthermore, peat moss reduces the leaching of nutrients in or added to the soil, releasing them over time, saving on fertilizer. To use, till two inches of peat moss into the top six or eight inches of soil, and consider adding complementary organic matter, such as compost, for nutrients.