



2192 Route 102 Hwy
Lincoln NB, E3B 8N1
www.scottsnursery.nb.ca
(506) 458-9208
Toll Free 1 800 561 7268



Soil Composition:

Soil is composed of particles of varying sizes. The three basic groups are sand, silt, and clay. Sand is the largest and provides great aeration but no water retention. Clay particles are very small and tend to compact, making for too much water retention and no aeration. Silt particles are medium sized and have properties in between sand and clay. Therefore the loamy soil, loose and water retentive, that most gardeners dream of is composed of the right combination of these three types of particles. By amending the soil, over time you can achieve the loose, friable loam that plants will thrive in.

Amending the soil:

A soil amendment can be any material that is mixed into the existing soil to improve its physical properties such as aeration, water retention, and nutrient holding capacity. The purpose is to provide a healthier environment for plant roots. Just as we eat to replenish our bodies with nutrients soil must be continually be replenished with organic matter. Organic matter decomposes into humus, which is what creates a rich, moisture retentive soil in which nutrients are available to the plants. Mulching is not the same thing as an amendment because mulches are placed on top of the soil surface and not worked into the soil.

Basically there are two types of soil amendments, organic and inorganic. Organic in this context refers to anything that comes from something that is or was alive such as peat, grass clippings, straw, manure, wood chips, compost, bonemeal, bat guano, and earthworm castings. Organic amendments have an added benefit of providing an energy source for bacteria, fungi and earthworms that live in the soil. Inorganic amendments refer to items that are either mined or manufactured such as lime, vermiculite, and perlite.



Peat moss:

Peat moss is the decomposing parts of sphagnum moss usually found in bogs. It is very rich in organic matter. Peat is an excellent amendment especially for sandy soils as it greatly improves the water and nutrient holding capacity of the soil. Since it is acidic it can also be added to help change the pH for plants that require an acidic environment.

Bat Guano:

Bat guano is the feces obtained only from fruit and insect eating species of bats. Bat dung is a fast acting fertilizer with no odor. It enriches the soil as well as improving texture and drainage. There are two formulations, one for growth and one for blooms. Each has a different N-P-K breakdown depending on whether the dung is from the insect or the fruit eating bat. Bat guano provides a high concentration of nutrients. For this reason it is usually applied in smaller quantities than other manures. It can be used fresh or dried and worked into the soil or it can be made into a tea and applied. It can also be used as a natural fungicide in the soil or as a compost accelerator.





Manure:

Seventy-five to ninety percent of the plant nutrients fed to animals end up in their manure. No wonder it is such an excellent fertilizer. To utilize manure as a soil amendment it must be aged at least six months or more. If not the ammonia levels present in fresh manure will burn the plants. Another factor to consider is that manures contain salt, so if there is already a high concentration of salt present in your soil manure may not be a good choice. It is easy to look at the N-P-K numbers on a bag of manure and think it isn't very powerful compared to a bag of chemical fertilizer. However you have to remember that the manure is building the soil structure and nourishing the plants by adding back that much needed organic matter. The advantages over chemicals are that you don't have that risk of burning plants, plus the nutrients are in a form which are ready to be absorbed by the plants immediately.

As far as N-P-K goes, chicken manure is by far the richest of all manures. The potency of any manure depends to a large degree on what the animals were fed. Usually grain fed animals produce richer manure than those on green pasture.

Earthworm Castings:

Earthworms eat decomposing manures and other organic substances. Nutrients from these substances travel through the gut of the earthworm and are enhanced with minerals and humetic acids. This is then excreted as tiny odorless pellets called earthworm castings. These little pellets contain everything a plant needs including natural growth boosters and disease and pest resistance.



Bonemeal:

Bonemeal is the oldest known form of phosphorus fertilizer. It is made from the cooked and ground up animal bones from the meat industry, mostly beef. Since it is very high in phosphorus, it is used to either promote root growth or to encourage big beautiful blooms. There are also trace minerals present as well. It is very useful to balance out other, high nitrogen soil amendments such as manure.



Bloodmeal:

Bloodmeal is another by product of the meat industry. The blood is dried to make a powder, which is a very concentrated form of nitrogen. It is a great organic way to quickly add nitrogen to depleted soils. Care must be taken however not to burn plants. Bloodmeal can also be used to lower the pH of soil for those plants that prefer an acidic environment.

Lime:

Lime is used to increase the pH, or alkalinity of the soil. For plants that prefer “sweet” soil, this makes the nutrients that are already present much more available to the plants. Besides raising the pH, lime also provides calcium and trace nutrients. The constant addition of manure over time will cause your soil to become more acidic, lime is used to counterbalance this. There are two types of lime, calcitic and dolomitic. Calcitic lime is mostly composed of calcium whereas dolomitic lime is calcium and at least 6% magnesium. Dolomitic lime is a good idea for sandy soils because the soil is very poor at holding nutrients and therefore has a greater chance of being magnesium deficient than other soil types.

Lime can be purchased in two forms, pelletized and powdered. The pelletized is much easier to work with and has more of a tendency to end up where you intend it to go as it comes out of the spreader. Powdered lime is usually cheaper but messier. Pelletized lime is applied with a broadcast spreader and powdered lime is applied with a drop spreader.



Vermiculite:

Vermiculite is the name given to ‘hydrated laminar magnesium aluminum ironsilicate’. It is mined predominantly in Australia, Brazil, China, Africa, and the USA. Its primary function is to increase the water retention capabilities of the soil, therefore it is an excellent amendment for sandy soils. It also absorbs excess nutrients. Vermiculite makes a great medium also for seed germination and rooting cuttings.

Perlite:

Perlite is a naturally occurring volcanic glass which is mined all over the world. Its function is to improve aeration and drainage and is therefore an excellent amendment for heavily compacted clay soils. It is sterile and has a nearly neutral pH so it does not alter the soil pH. It is a common additive to potting soils due to its perfect air-moisture balance.

