## Soil, Foundation Of Your Garden

The foundation of any garden, be it organic, container, square foot – whatever, is it's soil but how many of us actually understand how these soils develop into the different types we have in our garden – mine is almost solid clay. It is my frequent mutter that you could take a spade of soil and dump it straight onto the Potter's Wheel!

Soil is created from the primeval actions of the earth in its growth and development. Formed of rock mixed with vegetable and animal material over eons of time it becomes the friable and crumbly humus we like to have in our gardens. As the rocks moved and collided they were gradually ground down to form the fine particles that we associate with our soil, and so it still goes on. Many of the particles dissolve in water and are mixed with the decaying biological material to form a slurry that eventually dries out and is deposited as soil.

During the formation of the earth much of the slurry that was created went through a great deal more before it became the soil we treasure today. Often the dissolved rock would be compressed and subject to huge temperature changes which reformed it at a molecular level. The effect of heat, cold and weather caused more crumbling and eventually those rocks would break down as well. This mechanical action would form relatively large particles of mixed animal, vegetable and mineral matter akin to the sandy soils which are so easy to work and which have such good drainage properties.

Clay Soils, with which I am only too familiar, are formed in a slightly different way. The rock from which it was formed is attacked by acids in the atmosphere, mainly generated from Carbon Dioxide. This produces a chemical change, rather than the mechanical one which produces gritty, sandy soils. Vast amounts of water are required to create this kind of chemical change and the resulting mud based soils. This also has a dramatic effect on the way the soil behaves when it is waterlogged. Gritty, soils allow the water to flow through but clay flocculates, or flows together, and forms lumpy masses so however much other material you work into it, it will always be clumpy.

Soil Acidity is also critical to the well being of your garden. Many plants are tolerant of high or low acidity, though there are some which are not. For example if you want your Blue Hydrangeas to stay blue then you need an acidic soil with a low pH value. The acidity of the soil affects the solubility of nutrients and their availability to the plants, highly acidic soils can have high concentrations of iron and aluminum which will be toxic for a number of plants. Acidity is caused by rainwater leaching away alkaline minerals, the decay of organic material and the formation of weak organic acids within the soil. This acidity can be counteracted by using lime bearing soil additives in just the same way that you would add composts and soil conditioners to sandy soils.

The quality of your garden depends on the quality of your soil and how you care for it, so it is wise to be aware of the type and condition of the soil when planning and planting your garden.

## About the Author

Lizzie Westerley has spent many pleasurable years developing her garden and her gardening skills. You can find more of her insights and information on how to make your garden equally magnificent at The Garden Magazine

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