SOIL TYPES: A BEGINNERS GUIDE

BEGINNERS GUIDE TO GARDENING



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QUICK FACTS

- Loams are combinations of clay, sand, and silt that don't go too far in any one direction.
- Peat soils have a lot of moisture and organic matter.
- Chalky soils can be light or heavy, and they have lots of alkaline.
- Clay soils have a lot of nutrients, are heavy, cold and wet in the winter, and dry and baked in the summer.
- Sandy soils are typically acidic, light, dry, warm, and lacking in nutrients.
- Silt soils are light and fertile, but they retain moisture.



SOIL TERMINOLOGY EXPLAINED

It is essential to comprehend why soil plays such an important role in your garden. Soil is frequently misunderstood as dirt or garden compost. But soil is neither of these things. The soil itself is an organic living thing. Compost is organic matter that is breaking down, while dirt is an inert material. Take a closer look at the following key terms for soil.

Dirt

Fragments of inert rock, sand, grit, and debris devoid of any living organisms.

Soil

Particles, minerals, living and dead organisms, as well as bedrock, which is ground-up stone, make up soil. It creates a rich, living tapestry that is ideal for wildlife and plants to flourish in. It is the foundation of all successful garden design and gardening.

Loam

Soil's "near-perfect" healthy mix of clay, silt, and sand is called loam. Consider it the ideal balance that is rarely achieved! 40% clay, 40% sand, and 40% silt. It is an abbreviation for soil.

Compost

Organic matter that has naturally broken down during a recycling cycle is compost. It indicates that it contains a light, airy texture, is rich in nutrients, and retains moisture. Compost can be made at home to help improve the health of your soil.



THE DIFFERENT SOIL TYPES

There is a great deal of variation in the characteristics of soils, but the gardening characteristics of a soil are determined by the size of its particles:

Clay	Less than 0.002mm
Silt	0.002-0.05mm
Sand	0.05-2mm
Stones	Bigger than 2mm in size
Chalky Soils	Also contain calcium carbonate or lime

Because they have a large surface area for a given volume of clay, the tiny clay particles dominate the other particles in the soil, giving it its characteristics:

<u>Clay Soils</u>

Clay makes up more than 25% of clay soils. These, also known as heavy soils, may be fertile because they contain nutrients bound to the soil's clay minerals. However, due to the capillary attraction of the tiny spaces between the numerous clay particles, they also hold a high proportion of water. Compared to sandy soils, they drain slowly and take longer to warm up in the spring. Clay soils are easy to compact when they are wet and bake hard in the summer, frequently cracking clearly. These soils frequently present a challenge to the gardener, but when properly managed through cultivation and plant selection, they can be extremely rewarding to work with.

Sandy Soils

Sand and a little clay make up the majority of sandy soils. These soils, also known as light soils, are simple to cultivate and work and drain quickly after rain or watering. They warm up more quickly than clay soils do in the spring. However, they quickly dry out and lack plant nutrients, which are quickly washed away by rain. Sandy soils frequently have high acidity.



Silt Soils

Silt soils, which are mostly made of particles of an intermediate size, are fertile, fairly well-drained, and hold more moisture than sandy soils, but they are easy to compact.

Loams

Avoiding the extremes of clay or sandy soils, loams are composed of a mixture of clay, sand, and silt. They are fertile, welldrained, and simple to work. Depending on their predominant composition and cultivation characteristics, they can be sandy-loam or clay-loam.

Peat Soils

Organic matter makes up the majority of peat soils, which tend to be very fertile and retain a lot of moisture. They rarely occur in gardens.

Chalky or lime-rich soils

Chalky or lime-rich soils are mostly composed of calcium carbonate and are very alkaline. They can be light or heavy. It can be difficult to identify the type of soil you have when different soils have been mixed together during landscaping or construction, and even a short distance away, it can change significantly.

IDENTIFYING YOUR SOIL TYPES

Touching and rolling the soil in your hands is the best way to determine its type.

- Sandy Soil You can feel the sand grains within the sandy soil, which has a grit to it; it falls through your fingers. It cannot be rolled into the shape of a sausage. It might stick together better if it is not a sandy loam or coarse sand.
- <u>Clay Soil</u> Sticky when wet and has a smearing quality. By rubbing it with a finger, it can be smoothed to a shiny finish and easily rolled into a long, thin sausage. It won't shine quite as much and won't be as easy to make a sausage if it isn't a heavy clay.
- Pure Silt Soils- Particularly in gardens, pure silt soils are uncommon. They are slippery, slightly soapy, and do not easily clump together.

If the soil in a vinegar jar froths, it is lime-rich and contains free calcium carbonate (chalk) or limestone. The <u>pH</u> (acidity or alkalinity) of the soil is another important factor to consider.

The kinds of plants you can grow and how you manage your soil will also be affected by the PH of the soil. The easiest way of testing your soil is with a home <u>soil testing kit</u>.

This diagram demonstrates the soil texture triangle that uses the proportions of these three particles to describe the soil texture of soil in the garden.



WORKING WITH YOUR SOIL



<u>Clay Soils</u>

If the cloddiness of clay soils can be broken up with organic matter, they are fertile and full of nutrients. This separates the clay into smaller pieces, making it easier for plant roots to access the water and nutrients contained within the clay. The process of breaking up the clay into crumbs also makes the soil warmer, easier to work with, and less likely to become compacted.

<u>Sandy Soils</u>

Being particularly free-draining, these light soils lose water quickly and typically lack nutrients. By adding a lot of organic matter to bind the loose sand into crumbs that are more fertile, you can increase your soil's capacity to hold water and nutrients. For plants that are grown in sandy soils, fertilisers may also be required.

Silt Soils

These soils are composed of fine particles that can be easily compacted using garden machinery and trowelling. If they are not protected by plants, they are susceptible to wind erosion and washing away. However, they tend to be quite fertile because they hold more water and contain more nutrients than sandy soils. By adding organic matter, you can bind the silt into crumbs that are more stable.

<u>Loams</u>

Because they contain the "perfect" balance of all soil particle types, these soils are the gardener's best friend. However, despite their excellent quality, it is essential to add organic matter on a regular basis, particularly if you dig or cultivate these soils annually.

Chalky Soils

Since chalky soils are alkaline, they cannot support ericaceous plants, which thrive in acidic environments. There may be visible lumps of chalky white stone in soils that are very chalky. Plants that can thrive in alkaline conditions are preferable in such soils, which cannot be acidified. Although there are variations, many chalky soils are shallow, free-draining, and low in fertility. However, where there is clay, nutrient levels and water holding capacity may be higher.

Problems

Problems are more likely to arise in particular soil types. Clay soils may not be suitable for plants that require free drainage because they can have drainage issues. Sandy, light soils require a lot of watering.

The Good & Bad Of Certain Soil Types

- The soil with the most nutrients is clay soil. Sadly, it is also the heaviest, densest, and most susceptible to freezing and waterlogging in the winter.
- Silty soil is also rich in nutrients, can hold a lot of water, and drains slightly better than clay.
- Although some plants can thrive in light and airy conditions, sandy soil can lack nutrients and hold water poorly.
- Chalky soil is good for plants that like an alkaline <u>pH</u> because it is alkaline and can drain easily.
- Despite its high nutrient and organic matter content, peat can be acidic. The most fortunate gardeners have a perfect loam that is perfectly balanced in terms of <u>pH</u>, nutrients, moisture, and organic matter.

Frequently Asked Questions

How do I know what kind of soil to use? "There are six main types of soil. These are chalky, clay, sandy, silt, loam and peat. To test your soil type, you need to take a look at it and feel it. You can do this by taking a little bit of the soil and adding a small amount of water, then rolling it in your hands. Sandy soil will fall apart in your fingers, clay soil will become sticky and pure silt soils will become slippery and slightly soapy," says <u>Chris Bonnett, a</u> <u>gardening expert for The Express</u>.