

Growing on gravel soil

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A high proportion of small, water-worn stones or pebbles in the earth is a sign that you have a gravelly soil. Gravelly soils are variable in quality, depending on other components.

What constitutes a gravel soil?

Gravelly soil contain a high proportion of small stones.

Technically, a small stone is called gravel if it's greater than 2mm in diameter. It's a grain of sand if it's less.

Gravelly soils aren't a recognised type in most gardening books. This is because gravels can be light soils, composed mainly of sand, or can contain much clay. So they are strongly influenced by other components. However, in localised areas the presence of gravel can modify the effect of the sand or clay portion.

What is gravelly sandy soil like?

When sand is a major part of gravelly soil, it will have the characteristics of a sandy soil.

The good news is that it won't get soggy in winter, and will warm up quickly in spring. Earlier sowing and planting is also possible, and fewer plants die in the wet winter cold. However, plant nutrients will quickly be washed out of the soil.

Sandy soils without gravel can hold much water, as long as the sand is fine, but where coarse gravel particles dominate, water-holding is reduced.

On the other hand, fine sands tend to settle under heavy rain or watering, leading to a capped, smooth, surface which reduces drainage and encourages moss and algae. Worse, if the soil caps over freshly sown seeds, the seedlings sometimes can't force their way to the surface. Gravel

can reduce the chances of this happening.

What is a gravelly clay soil like?

When clay is the main component, your soil will have the heavy, water-holding properties of a clay soil. The gravel portion, if large enough, helps by preventing the clay from forming the soggy masses found in a pure clay soil. Gravel will improve drainage, and when it dries out, the gravel prevents it setting like concrete.

Although gravel may be the most obvious kind of particle visible, where there is gravel, there is almost always a major, but harder to see, sand element. The downside is that gravels will not hold water or nutrients.

Clay particles, on the other hand, will hold a lot of water. Clay also holds nutrients bound to the vast surface area of the minute clay particles. However, if gravels dominate, the soil will be drought-prone and lack fertility.

What's the best way to find out if I have a gravel soil?

After heavy rain, the surface of your soil will be covered with small stones, stranded as the soil slumps under the rain's impact. When you are digging and cultivating you'll be able to see the small stones.

To tell if your soil is a light or heavy gravelly soil, rub a spoonful of moist soil between your finger and thumb. Discard the gravelly bits. If the remainder is gritty, the

soil is sandy; if it feels sticky and can be easily shaped it is mainly clay. If it is between these extremes, try and roll it into a cylinder. If it won't form a cylinder, both sand and silt are present. If it forms a soft cylinder and feels silky or soapy, silt is present. If it can be moulded into a cylinder but is not sticky, clay and silt are both present.

Silt consists of particles smaller than sand, but bigger than clay. It's useful as it retains water and nutrients better than sand, but does not go as sticky and difficult to work in wet weather as clay. If it is easy to mould into a cylinder and can be bent into a ring, and is shiny when you rub it with your finger, the soil is clay.

How should I dig a gravelly soil?

Gravel soils are usually fairly easy to dig. If they are light and gravelly, it is best to dig them in late winter or early spring. Light, gravelly soils can be dug deeply with relative ease. Deep digging will help roots reach water deep down in the soil. It's worth double digging before planting perennial plants, shrubs, asparagus or fruit, for example. Gravel soils can also be easily worked with a cultivator and not dug at all. This reduces the labour, but your plants might run short of water more quickly. Mulching will help overcome this.

Gravelly soils with clay need not be dug if you use raised beds – for vegetable growing, for example.

When they have to be dug, digging with a fork is often easier than using a spade.

How can I boost fertility of a gravel soil?

Nitrogen and potassium are often in short supply in light, gravelly soils.

Maintain these nutrients by using about 100g per m² of a general fertiliser, such as growmore, every spring.

During the growing season, plants that are not doing well should have an extra feed of liquid fertiliser when they are watered, or a top-dressing of a nitrogen fertiliser such as nitrate of potash or sulphate of ammonia. Use about 70g per m².

Both light and heavy gravelly soils need as much organic matter as you can lay your hands on.

On light soils this will help retain moisture. Use about one barrow load every 2.3m². On gravels containing clay, it will help improve the soil's structure, as well as boost water-holding capacity.

Good sources of organic matter are garden compost, mushroom compost and manure.

Should I have a soil test?

Light soils can often be acid. A cheap soil testing kit from the garden centre will give an idea of the soil pH. Acid soils have a pH of less than 6.0, alkaline ones are higher than 7.0, while soils with a pH of 6.0-7.0 are about right, or neutral. If lime is needed, the pH will be less than 6.0. The kit's instructions should tell you how much to use.

Be cautious when adding lime – it's easy to overdose, and excess lime will lead to an alkaline soil and nutrient deficiencies. As cheap kits are a bit rough-and-ready, only add about half the recommended amount of lime in the first instance, retesting the following year and adding the remainder if required.

Alternatively, you could take advantage of the *Which?* Gardening soil testing service that provides highly accurate results, interpreted for your situation. Contact us for more details.

Are gravel soils good for fruit?

Thin, sandy gravels won't produce good fruit crops. They are too dry

and hungry for nutrients. You can overcome this problem to some extent by watering and mulching – with manure for soft fruit, and straw for tree fruits.

When the soil is not too thin or lacking in nutrients, gravel soils can be good for fruit. The stones improve drainage and allow deep root penetration to the moist soil.

Will vegetables do well on gravelly soils?

All vegetables should do well on gravelly soils. Of course, you have to make sure there are sufficient nutrients and water present. Growing short-rooted kinds of parsnips and carrots will avoid too many fanged and distorted roots where the plants hit stones. Potatoes can be tricky to harvest, as it's easy to mistake the pebbles for tubers.

Which other plants are suitable for gravelly soils?

It all depends on the nature of the rest of the soil. Have a look at what grows in nearby gardens and take it from there.

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