

# **SOIL TYPES: UNDERSTANDING PH & TESTING SOILS**



Different plants thrive in different soils, due to this you will need to know the pH of the soil before designing and planting your garden. The pH of your soil is a number that indicates how acidic or alkaline it is. The pH is considered neutral at 7.0. An alkaline soil is one with a pH above 7.0, while an acid soil has a pH below 7.0.

## Quick Facts

- This information works with all soils, but it doesn't work with potting media, fertilisers, or manures.
- You can test your soil pH at any time



# WHAT IS PH IN SOIL?

The chemistry comes into play here, but fortunately, it's simple science to comprehend. The pH scale is used to measure the acidity and alkalinity of the soil. The term "pH" stands for "potential of Hydrogen." The majority of garden soils fall within the range of 3.5 to 8.5 on the full scale, which ranges from 1 to 14.

It can be tempting to plant your garden and focus on the pretty things without first getting down to the science of analysing your soil. However, if you want your garden to thrive, you need to know what kind of soil you have and how to prepare it properly. Garden soil that is perfect doesn't just happen; typically, it takes some effort.

Instead of trying to change the pH of your garden soil to match plants you like, it's usually best to choose plants that work with it. It is possible to alter the crops that can be grown by dressing the soil.

Remember that changing the pH of your soil is an ongoing process, not a one-time event, if you do decide to do so. If you let the soil return to its natural pH, plants won't continue to thrive.

## WHEN TO TEST SOIL PH

Before designing or planting a new garden, making vegetable plots, or planting fruit, it is especially important to check the pH of the soil. This is especially important if the growth is disappointing or the foliage is yellowing.

Testing can be done at any time, but if it is done within three months of adding lime, fertiliser, or organic matter, the results may be misleading. Lime is added to make the soil more alkaline, and acidifying materials are added to make the soil less alkaline.

# HOW TO TEST SOIL PH

Using a DIY soil test kit, you can test the pH of your soil on your own easily.

To obtain a sample that is representative of the area in question, always follow the sampling instructions provided by the test kit.

Remember to test the soil in different areas of your garden as results will vary.

## Using kitchen supplies

When an acidic solution is added to a basic substance, it typically reacts. For a quick, do-it-yourself pH reading of your soil, you can use basic baking soda and acidic vinegar. If you have healthy gardens that might benefit from a little bit more targeted care, this do-it-yourself test will reveal whether the soil is relatively acidic or alkaline.

**Note:** When compared to home-based methods, lab-based soil testing yields results that are more comprehensive and precise. A comprehensive analysis of the soil's composition, including the pH level, percentage of organic matter, and major and minor nutrients, is provided by soil testing laboratories.

1. Dig for a soil sample. Dig four to six inches below the surface of the soil with a hand trowel to collect a soil sample. In order to obtain an average soil sample that is representative of the area, dig in your garden bed at several locations.
2. Clean the soil. The soil should be cleared of sticks, stones, and other debris. Break up any large clumps with care.
3. Add water and soil together. In a clean glass container, add approximately one cup of soil and enough distilled water to turn the soil into mud.
4. Add the vinegar. Mix in half a cup of vinegar and stir. Your soil is alkaline if it fizzes, foams, or bubbles.
5. Repeat the process if no bubbling occurs. Take a sample of soil, clean it of any debris, put it in a clean container, and make mud out of it with distilled water.
6. Add the baking soda. Stir in half a cup of baking soda. Your soil is acidic if it fizzes, foams, or bubbles.





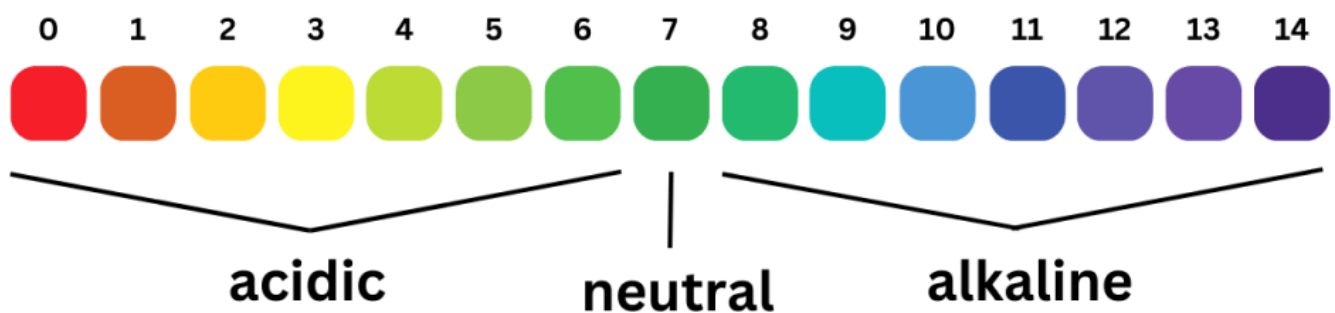
## Using soil strips

Baking soda and vinegar can be used to test your soil to determine its pH level. However, a soil pH testing kit provides more precise results for an exact measurement.

1. Dig for a sample. Dig four to six inches below the surface of the soil with a hand trowel to collect a soil sample.
2. Collect the soil. In a clean glass, add one to three teaspoons of soil. Get rid of any sticks, stones, or other garbage.
3. Pour in distilled water. Distilled water should be poured into the glass to the same level as the soil sample.
4. Agitate the soil. Swirl or vigorously stir the mixture. The solution should rest for thirty minutes.
5. Drain the sample. The soil sample should be poured into another clean glass through a coffee filter. Check to see that the liquid is passing through while the solids are being captured.
6. Use the pH test strip. The test strip is dipped in the liquid. Pay close attention to the directions regarding the amount of time you should leave the strip in the liquid. To determine the pH, compare the colour of the strip to the chart on the packaging provided by the manufacturer.
7. Repeat the process. To get an average pH, take samples from various parts of your garden and repeat the process several times.

# WHAT THE RESULTS OF THE PH SOIL TEST MEAN

## The pH Scale



If your test results range from 3.0 to 5.0, your soil is extremely acidic. Soil lacks trace elements as a result of the easy removal of plant nutrients by water. Lime can be added to raise the pH above 5.0.

If your pH ranges from 5.1 to 6.0, your soil is acidic. This is great for growing potatoes, camellias, azaleas, rhododendrons, and heathers, but if you want to grow other plants well, you will need to add lime.

A pH range of 6.1 to 7.0 indicates that your soil is suitable for growing a wide variety of plants due to its moderate acidity and abundance of nutrients. Therefore, you need not make any changes to it.

If your soil has a pH between 7.1 and 8.0, it is alkaline, likely lacking certain minerals like manganese, iron, and phosphorus, and will need acidifying agents to raise its pH.

# HOW TO CORRECT PH IN SOIL



Dressing soil in the same way that you would a salad does the job of adjusting its pH. It is simple to alter the soil's pH levels if the right ingredients are added.

Soil that is too acidic is unable to provide plants with the nutrients they require. The pH of garden soil is raised by adding lime, which makes it less acidic. The amount of lime required to reduce acidity is determined by the pH level of the soil in the test.

Ground limestone is widely available at garden centers, easy to spread, and typically the preferred method for acidifying soil. The kind of hydrated lime that builders use should be avoided. It can irritate the skin and eyes if not handled with care, despite its quick action and ease of application.

To figure out how much to spread per square foot to bring the pH level to the ideal level of 6.5, you will need to know the type of soil you have (clay, loam, or sand).

In the event that the soil is acidic, apply garden lime or mushroom compost to the surface and incorporate it into the soil in the manner that is recommended by the test results to raise the pH and make the soil more alkaline.

Add acidifying materials like pine bark, compost, or sulphur to alkaline soil to gradually lower its alkalinity and improve its texture.

Adding calcium to soil is another way to raise its pH. Even though this process uses common household items like cracked egg shells, it has a lot of power and is necessary for plant growth. So, if you want to improve the health of your soil, adding calcium is a great place to start.



# WHAT TO GROW IN YOUR SOIL TYPE

## Acidic

Rhododendrons and azaleas, two of the most beautiful flowering plants, thrive in soil that is too alkaline because nutrients become locked up. In acid soils, perennials like alliums, campanula, and lilies also thrive.

Some experts consider camellias, hydrangeas, magnolias, and sarcococcas to be acid-loving plants. However, in general, these plants only require soil that does not contain lime, and they are rarely bothered by the soil's acidity.

If your soil isn't right for these plants, try planting them in ericaceous compost-filled containers or beds.

## Alkaline

Calcium is often abundant in alkaline soil.

Although it has good drainage, it can be thin, so it needs a lot of organic matter, like homemade compost or well-rotted manure, to make it richer and keep moisture in.

Alkaline soils are ideal for lavender, geraniums, honeysuckle, clematis, and lilac. When it comes to trees, select varieties that will thrive, such as acer and taxus baccata (yew).

## Frequently Asked Question

### *Does nitrogen raise or lower pH?*

"The use of ammonium-N-containing nitrogen (N) fertilisers is one of the primary contributors to the gradual acidification of our soils (lower pH values)," says [Chris Bonnett, a gardening expert for The Express](#).

