



## **Garden soil testing**

### **Why soil test?**

A soil test can help a plant grower determine whether an area of ground has enough available nutrients for good plant growth. A soil test can also help growers determine the potential for sodium (salinity), pH, organic matter level and texture effects on plant growth.

### **Water Infiltration Method**

1. Take an empty coffee can with the bottom removed and push it into the soil until just 3 inches remain above the surface.
2. Fill the can with water, marking the water height and how long it takes for the water to be absorbed into the soil.
3. Repeat this several times until the rate of absorption slows and your times become consistent. Anything slower than 1/2 to 1 inch per hour is an indication of compacted soil.

### **Why It's Important**

Good infiltration gets water to plants where they need it (at their roots), prevents runoff and erosion, and lets air move more efficiently into soil pores.

### **Ph test (without kit)**

You can find out if your soil is acidic or alkaline without purchasing a pricey test kit. This simple DIY test will give you immediate results and is easy to assemble and use. The whole process will take just 15 minutes or less.

Materials:

To create your homemade soil acidity-alkalinity test, you'll need just a few common household items. Gather together the following:

- A soil sample
- White vinegar
- Baking soda
- Water
- Two sample containers (such as disposable cups)

### **Administering the Test**

To test your soil, follow these simple steps:

1. Scoop some soil into a container. Then, add 1/2 cup of vinegar. If the soil bubbles or fizzes, it's alkaline. The chemical reaction that you're seeing occurs when an acid (vinegar) comes into contact with something alkaline (soil).
2. If no reaction occurs, scoop a fresh soil sample into a second container. Add half a cup of water, and mix. Then, add 1/2 cup of baking soda. If the soil bubbles or fizzes, the soil is highly acidic. The reaction you're seeing is the result of acidic soil coming into contact with an alkaline substance (baking soda).
3. If your soil doesn't react to either test, it has a neutral pH and doesn't require any tweaking. Just keep adding organic materials such as compost and leaf mold to maintain that balance.
4. Amend your soil with wood ash or lime if it tested acidic. Amend your soil with sulfur or pine needles if it tested alkaline.

Remember that good pH is only one aspect of healthy soil. To improve the health of your soil, add the correct free soil amendments to your garden.

#### Tips and Hints

1. Soil amendment takes time, so make small changes and wait for them to take hold before making further amendments.
2. You may have different types of soil in different parts of your yard, so consider testing each of your garden beds and dig down several inches.
3. Choose plants that will thrive in your soil. Hydrangeas and blueberries, for example, love acidic soil. Sometimes, it's just easier to work with the soil that you have than to fight it.
4. Continue to test and tweak your soil over time. Maintaining healthy soil is an ongoing task.

You don't have to spend money to improve your soil. There are free materials that you can add to your soil to improve pH, water retention, soil structure, and nutrient content. You can get free coffee grounds for your garden, use leaves in your garden, and even get free mulch.

#### Ph Test (with kit)

The Ph (acidity level) of your soil has a lot to do with how well your plants grow. Ph is tested on a scale of zero to 14, with zero being very acidic and 14 being very alkaline. Most plants grow best in soil with a fairly neutral Ph, between six and seven. When the Ph level is lower than five or higher than eight, plants just won't grow as well as they should.

Every home and garden center carries Ph test kits. These kits are fairly accurate, but you must make sure you follow the testing instructions precisely. Once you know whether your soil Ph is a problem or not, you can begin working to correct the problem.

#### Worm Test

Determining the amount of earthworms present in your soil is an effective way to check the overall health of the soil.

1. Be sure the soil has warmed to at least 55 degrees, and that it is at least somewhat moist, but not soaking wet.

2. Dig a hole one foot across and one foot deep. Place the soil on a tarp or piece of cardboard.
3. Sift through the soil with your hands as you place it back into the hole, counting the earthworms as you go.

If you find at least ten worms, your soil is in pretty good shape. Less than that indicates that there may not be enough organic matter in your soil to support a healthy worm population, or that your soil is too acidic or alkaline.

### **The Squeeze Test**

One of the most basic characteristics of soil is its composition. In general, soils are classified as clay soils, sandy soils, or loamy soils. Clay is nutrient-rich, but slow draining. Sand is quick draining but has trouble retaining nutrients and moisture. Loam is generally considered to be ideal soil because it retains moisture and nutrients but doesn't stay soggy.

To determine your soil type, take a handful of moist (but not wet) soil from your garden, and give it a firm squeeze. Then, open your hand. One of three things will happen:

1. It will hold its shape, and when you give it a light poke, it crumbles. Lucky you—this means you have luxurious loam!
2. It will hold its shape, and, when poked, sits stubbornly in your hand. This means you have clay soil.
3. It will fall apart as soon as you open your hand. This means you have sandy soil.

Now that you know what type of soil you have, you can work on improving it.