



DIY Home Soil Testing

Here are some fun DIY ways to test at home with ingredients from the kitchen.

DIY Vinegar and Baking Soda Test: This is not accurate but will give you an idea if your garden is acidic or alkaline. Place a small amount of your soil sample into 2 containers. Pour vinegar over one sample (bubbles indicate alkaline soil), mix the other sample with an equal amount of water and add baking soda (bubbles indicate acidic soil).

Purple Cabbage DIY pH test: This is a bit more accurate, and a bit more effort, and way more fun if you have children. Place $\frac{1}{4}$ of a small purple cabbage, chopped, into a pot of distilled water and simmer 10 -15 minutes - the water should become deep purple. Cool and strain out the cabbage (keep the purple water). Take equal amounts of your soil sample and distilled water (1 – 2 tsp of each) and mix well. Add a small amount of your purple cabbage water and stir gently. The color should change depending on your soil pH.

- **Pink/Red:** Acidic soil (pH below 7)
- **Purple:** Neutral soil (pH around 7)
- **Green/Yellow:** Alkaline soil (pH above 7)

Going a step further, here are some variations of color with approximate pH readings

- **Red/Pink:** Strongly acidic (pH 4-5)
- **Light Purple:** Slightly acidic (pH 6)
- **Purple:** Neutral (pH 7)
- **Greenish:** Slightly alkaline (pH 8)
- **Yellow/Green:** Strongly alkaline (pH 9+)

The use of distilled water for both the cabbage extraction and the soil suspension is important to avoid any interference from minerals or chemicals in tap water or rainwater.

Soil Texture: The Jar Test

Nice garden soil should be 20 percent clay, 40 percent silt, and 40 percent sand. Find an empty straight-sided jar with a lid. Take a sample of soil from several inches below soil level. Get enough to $\frac{1}{3}$ fill your jar. Fill the jar to the jar's shoulder with water and allow the soil to absorb the water. Put the lid on the jar and shake it hard for about 3 minutes.

1. Put the jar down and wait 1 minute. Measure the sediment in the bottom of the jar (this is the sand).
2. Wait 4 more minutes and measure again. Subtract the first number and this is the amount of silt in your soil.
3. Measure a last time in 24 hours and subtract the measurement from the second step. This will be the clay.
4. Do a little math and calculate the percentage of each component of your soil - it should add up to 100%.

If your soil is high in sand, it will be well-draining, but nutrients drain away quickly. Silt and clay are hard to get wet, but they stay wet but have more nutrients. If you have sandy soil, add humus or aged manure, or sawdust with some extra nitrogen. Heavy, clay-rich soil can also be added to improve the soil. If you have silty soil, add coarse sand (not beach sand), or gravel and compost, or well-rotted horse manure mixed with fresh straw. If you have clay soil, add coarse sand (not beach sand) and compost.

Soil Health: The Earthworm Test

The best time to check for earthworms is in the spring when the soil's temperature has reached 50°F, and its surface is moist. Use a shovel to dig up about 1 cubic foot of soil. Put the soil on a piece of cardboard, break it apart, and look for earthworms. If your soil is healthy, you should find at least 10 earthworms! If your soil has fewer than 10 worms, add more organic matter—compost, aged manure, leaf mold. Organic matter improves structure, slowly releases nutrients, and increases beneficial microbial activity.