

Agronomy Career Corner:

Agronomy is the science and technology of producing and using plants in agriculture for food, fuel, fiber and land restoration. Agronomists are involved with many issues, including producing food, creating healthier food, managing the environmental impact of agriculture, distribution of agriculture and extracting energy from plants. Agronomists often specialize in areas such as crop rotation, irrigation and drainage, plant breeding, plant physiology, soil classification, soil fertility, weed control and insect and pest control.

Soil Fertility. How good is your soil?

Your soil needs to be able to provide nutrients to plants and allow plants to take up the nutrients in the soil. Otherwise, your plants will not grow well. Perform the following test to see how good your soil is for planting crops.

The Peanut Butter Jar Soil Test for Sand, Silt and Clay

This should take about 1 hour to set up and a full day to conclude. Find an empty straight-sided jar, such as a peanut butter or mason jar, with a lid, and have a ruler handy. Dig down to root level—about 6 inches—in the area you want to test and remove enough soil to fill the jar to between one-third and one-half full. Next, fill the jar to the shoulder with water, then set the jar aside to let the soil soak up the water. Put the lid on the jar and shake it hard for about three minutes.

1. Set the jar down and look at your watch. In 1 minute, measure (with the ruler) the amount of sediment that has collected at the bottom. This is the sand in your soil.
2. Wait 4 minutes more. Measure the sediment again: The difference between the two numbers will be the amount of silt in your soil.
3. Take a third measurement in 24 hours. The difference between the second and third number will be the amount of clay in your soil.

Calculate the percentages of sand, silt and clay, which should add up to 100 percent. Healthy soil typically consists of 20 percent clay, 40 percent silt and 40 percent sand.

This simple test can help you to decide what to grow: If your soil is high in sand, it will be well-draining. Silt and clay are hard to get wet, but they stay wet; plants that like “wet feet” would be happy here. Choose your plants accordingly and/or amend the soil:

- **If you have sandy soil**, add humus or aged manure, peat moss, 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), compost and peat moss.

The Pantry pH Test for Soil Acidity or Alkalinity

- Place 2 tablespoons of **soil** in a bowl and add ½ cup vinegar. If the mixture fizzes, you have alkaline **soil**.
- Place 2 tablespoons of **soil** in a bowl and moisten it with distilled water. Add ½ cup baking soda. If the mixture fizzes, you have acidic **soil**.

The Earthworm Test to Gauge Organic Matter

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. [Learn more about the wonderful world of earthworms.](#)

If your soil is healthy, you will 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.

Source: *The Old Farmer's Almanac* www.almanac.com

Resources and Great Links:

- <https://www.dmsfulfillment.com/FarmBureau/DMSStore/Product/Products>
 - Food and Farm Facts Books; Food and Farm Facts Trivia Cards and more!
- Discover the relationship between agriculture, food, fiber and energy in the free Addressing Misconceptions tool available at www.agfoundation.org/resources/addressing-misconceptions
- Journey 2050 is a virtual farm simulation that explores world food sustainability. <http://www.journey2050.com/>
- Learn more about the Purple Plow Challenges designed to engage students in creating solutions for real-world, complex issues related to agriculture. <https://www.purpleplow.org/>

Source: American Farm Bureau Foundation for Agriculture agfoundation.org