

Simple Methods to Get to Know Your Soil!



Whether working in a garden or on a farm, understanding the condition of your soil is key to growing healthy plants. Observing what happens above ground can provide a sense of soil health, but much more can be learned by digging deeper! Try these simple ways to determine the physical, biological, and chemical characteristics of your soil.

DID YOU KNOW...

There are more than 2,000 types of soil in Oregon!

Jory is Oregon's State Soil. It's red in color and highly productive.

1 teaspoon of healthy soil can contain a million organisms!

1 Physical Characteristics

Determining soil texture can help you choose plants that are most appropriate for your planting environment and more likely to thrive!

Soil texture is the proportion of sand, silt, and clay particles that are present. Texture affects a soil's ability to drain water, allow air flow, and hold nutrients. Soil with high sand content will feel gritty, while a clay soil will be smoother. Other physical traits to look at are soil color, infiltration – the ability for water to move through the soil – and bulk density, a measurement of how compacted the soil is.

Soil Texture Test: The Ribbon Method



1. Collect about 1 oz of soil from 3 - 4 inches below the surface.
2. Pour the sample on a tray or plate and break up any aggregates. Aggregates are clumps of sand, silt, and clay stuck together.
3. Mix a little bit of water into the soil so it feels like putty. If you add too much water, add more soil until you can easily roll the sample into a moist ball.
4. If the sample can never form a ball, you have sandy soil and the test ends here.

5. With the ball in your hand, gently squeeze and push it between your thumb and index finger to create a ribbon.

6. Push the soil until the ribbon breaks under its own weight. The ability to form a ribbon and the length of the ribbon indicate the soil type.

READING YOUR RESULTS The length of the ribbon indicates your soil texture.

No ribbon forms	loamy sand
Less than 1 inch	loam
1 to 2 inches	clay loam
Over 2 inches	clay

2 Biological Characteristics

They may be small, but living organisms play a big role in soil health. Visible and microscopic animals break down matter into its simplest parts, making nutrients accessible to plants. Just like forests, soils are complex ecosystems containing millions of organisms that interact with each other and their environment.

Soil Biology Test: EARTHWORM COUNT



The best time to observe earthworms is in the spring and fall when they are most active.

1. Measure a 1-foot square on the ground where you will take your sample.
2. Doing your best to use as few cuts as possible, dig a 12-inch-deep hole.
3. Place the dug-up soil on a light colored surface and begin sifting through to look for worms.
4. Place the worms you find on a moist surface out of direct sunlight to keep them comfortable.
5. Count as many as you can find. Then gently return them to the hole and cover with soil.
6. The more worms you find, the healthier your soil is!

Soil Biology Test: SOIL YOUR UNDIES



A fun way to observe the biological activity in your soil is to Soil Your Undies!

1. Bury cotton undies about 3" deep in the soil. Mark where you buried them so you can find them later!
2. Wait at least 60 days, then dig up the underwear and take a look.

READING RESULTS

The more tattered the underwear, the healthier your soil microbes are! Microbes decompose the cotton fabric. If the soil microbes are very active, the elastic band might be the only part left. If the underwear looks good-as-new, you'll want to think about adding compost to boost microbial activity.

3 Chemical Characteristics

Plants need minerals and nutrients from the soil to grow. Measuring chemical components like organic matter, phosphorus, potassium, calcium, magnesium, and sodium can be done by dropping off a soil sample at a local laboratory. Chemical analysis also indicates factors like pH – a measurement of how acidic or alkaline your soil is – and this can be estimated at home with an inexpensive sensor.

Because the environment and management practices can impact soil conditions over time, it's best to obtain a chemical analysis of your soil every 3 to 5 years.

