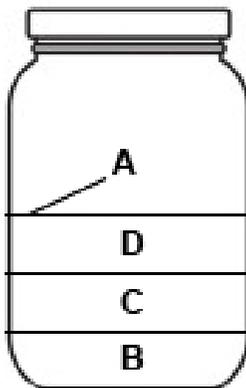


Soil Analysis Field Report

Part 1 - Soil Texture

The mineral component of soil is made up of different size particles called sand, silt, and clay. In this test, you will mix soil and water in a jar and then let the soil sink to the bottom so that these different size particles form different layers. By measuring the layers, you will be able to calculate the percentage of sand, silt, and clay in your soil. Follow these steps and record your measurements below.

1. Using a trowel or large spoon, fill your jar about one-third full of soil from 2-3 inches below the surface.
2. Shake the jar gently to level the soil, then measure the soil's depth (A).
3. Fill the jar nearly full of water and then shake it hard to mix the soil and water.
4. Place the jar on a table and wait for the soil to settle.
5. The largest and heaviest particles, called sand, will settle in less than a minute. Measure the depth of sand in the jar (B).
6. The medium-sized particles, called silt, can take hours to settle. Wait a day and then measure the depth of the silt layer (C).
7. The smallest particles, called clay, take even longer to settle, but you can assume that the depth of the clay layer (D) will be equal to the total depth of the soil minus the depth of the sand and silt layers; that is, $A - (B + C) = D$.



Sample location: _____

A. Soil Depth: _____

D. Clay Layer: _____

C. Silt Layer: _____

B. Sand Layer: _____

8. Now calculate the percentage of sand, silt, and clay using these equations.

$(B \div A) \times 100 =$ _____ percent sand $(C \div A) \times 100 =$ _____ percent silt

$100 - (\text{percent sand} + \text{percent silt}) =$ _____ percent clay

The most productive soil, called *loam*, is approximately 40% sand, 40% silt, and 20% clay. How does your soil compare to loam?

Soil Analysis Field Report

Part 2 - Soil Fertility

For thousands of years, farmers had to rely on their senses to determine if a soil was *fertile* — that is, whether it would be good for growing healthy crops. Today, most farmers use a soil testing laboratory to determine if their soil is fertile, but you can still learn a lot about soil by using your senses.

Conduct this soil fertility analysis when the soil is moist, about two days after a soaking rainfall or after you've watered the garden. Mark an X in the appropriate box for each soil test, then total the X's at the bottom of the chart. Remember to describe other colors you see in the soil in the space provided.

| Soil Tests | Fertile | Average | Infertile |
|--|---------------------------------|------------------------|--|
| Air and Water | | | |
| Can you push a wire coat hanger into the soil? | Goes in easily | Can be pushed in | Coat hanger bends |
| How does a handful of moist soil feel? | Moist but not muddy | Somewhat dry or muddy | Very dry or very wet |
| How does the moist soil hold together? | Holds shape but crumbles easily | Breaks apart in clumps | Doesn't hold shape or hard to break up |
| Nutrients | | | |
| What color is the topsoil? | Black, dark brown | Light brown | Grey, yellow |
| What other colors do you see in the soil? | | | |
| How does the soil smell? | Fresh, earthy | No smell or dusty | Sharp, swampy, strange |
| Can you see organic matter in the soil? | Lots | Some | Not much |
| Can you see worms and other organisms? | Lots | A few | Almost none |
| Total (count X's for each column) | | | |

Use the scale below to rate the fertility of your garden soil based on the results of your tests. Mark an X on the appropriate number.

Very Fertile

Not Fertile

| | | | | | | | | | | |
|----|---|---|---|---|---|---|---|---|---|---|
| 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|----|---|---|---|---|---|---|---|---|---|---|