



Healthy Soil for your Home Garden

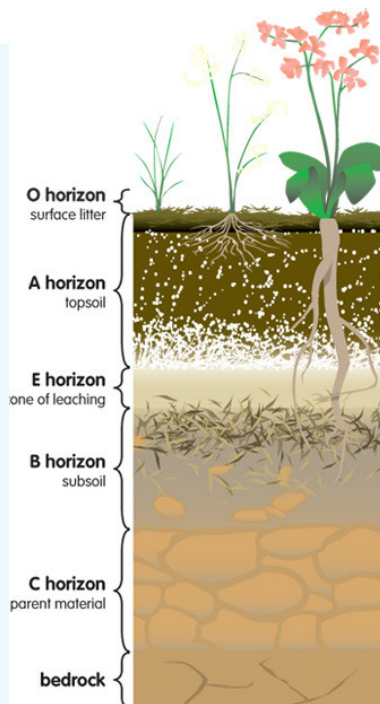
What is Soil?

Soil is a mixture of minerals, gases, liquids, organic material, and living organisms.

It's home to bacteria, insects, worms, and fungi, and they all work together to make the soil healthier.

Soil is ALIVE; it's a living ecosystem that sustains all life on earth.

The diagram shows the various layers of healthy soil.



Cultivating Healthy Soils for your Garden

There are a variety of ways you can help the soil in your garden stay healthy.

Crop Rotation

Different plants use different amounts and types of nutrients. Practice rotating your crops each year so that you can replenish

Plant Nitrogen-Fixing Plants

Certain plants, like legumes (beans, peas), can help restore nitrogen to the soil. They work with a bacteria called Rhizobium to pull nitrogen from the air and convert it into a form that plants can use. Some cover crops, like clover, fix nitrogen in the soil.

Low/No-Till Methods

Use low/no-till methods to avoid disturbing the soil ecosystem - this helps the living organisms in soil do their job!

Cover Crops

Cover crops are planted to cover the soil, rather than for harvesting. These include oat, barley, rye, and clover. Cover crops help prevent soil erosion and return nutrients to the soil by decomposing where they were planted.

Soil Amendments

If your soil is degraded or you've never planted in a spot before, you can add natural amendments to your soil to replenish nutrients. These include aged manure (aged at least 1 year) and compost.

Compost

Compost is made by decomposing organic materials. Composting at home is easy! All you need is someplace outside where you can start a pile; you can compost clippings from your yard, fruit & veggie kitchen scraps, and egg shells. DO NOT compost meat, dairy, extra oil or fat, eggs, or pet waste.

What Does Soil Do?

Soil has 5 essential functions:

- Regulate water: soil helps control where rain, irrigation water, and snowmelt go
- Sustain plant & animal life: soil provides nutrients to plants
- Filter potential pollutants: minerals & microbes in soil filter & break down pollution
- Cycle nutrients: carbon, nitrogen, phosphorus, and other nutrients are transformed, stored, and cycled in the soil
- Provide physical stability & support: soil provides support for plant roots, which help anchor the soil in place



How is Soil Made?

Soil is made up by the erosion, or physical weathering, of rock, which contributes minerals to the soil. This is the **parent material**.

As soil is created, plants begin to grow. Their roots help anchor the soil in place, preventing topsoil erosion (topsoil contains the most organic matter, and the most readily available nutrients for plants). When plants and animals die, they are decomposed by bacteria, worms, and fungi to become soil organic matter.

The length of time it takes for soil to form depends on the climate: soil forms faster in hot, wet climates than dry ones. Either way, it takes at least 100 years for 1 inch of soil to form.

Sources

- <https://www.qld.gov.au/environment/land/management/soil/soil-explained/forms>
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