

FROM FARMING TO GARDENING: Bringing Soil Health to Life

Whether you are a farmer with 500 acres or are gardening in the city,

Soil is your greatest resource for success. Its health and vitality are essential for healthier food, cleaner water, richer biodiversity and a calmer climate.

Whether on the farm or in a garden, caring for your soil comes down to six basic principles. These are known as the
6Cs of Soil Health.

The 2nd C: Cultivate Carefully

Each time the soil is tilled (or dug up), the soil's structure is damaged, breaking up aggregates and disrupting the many intricate networks created by beneficial organisms such as soil fungi. Tillage also introduces more oxygen into the soil, which boosts the activities of decomposer organisms, such as bacteria. This more rapid decomposition is what provides the fertility flush, but it also releases more soil carbon as CO₂, reducing levels of soil organic matter (SOM). As SOM levels drop and routine disturbance continues, microbial diversity also drops, leading to poor soil structure, reduced soil functions, less resilience, and the need for more and more inputs to achieve the same results.

Reduced disturbance allows soil microbial communities to achieve higher levels of diversity and efficiency. Over time, this results in higher soil-health scores for soils that have been managed with less disturbance. Greater soil health means increased soil functions, including fertility, pest and disease suppression, and resilience in the face of climate extremes.

As a gardener, it is important to remember to:

Try to dig as little as possible. It disturbs the structure of our soils.

As gardeners, we have been doing a lot of digging. For example, we have been turning the soil over every spring and have not hesitated to dig and then break up any clumps of soil in order to create a nice even planting bed.

We need to develop better, more careful gardening habits. Let's always remember that soils are living ecosystems, teeming with tiny critters, mostly invisible, who support plant growth and health.

When soil becomes compacted:

- rainfall runs off the surface of your soil, instead of seeping into it, or just forms puddles that later evaporate in the sun
- your helpful underground critters shrivel up and disappear
- you will have to keep adding more and more water, fertilizer and pesticides, just to replace the benefits your workforce would have provided free of charge.

Of course, in most gardens there will need to be some disturbance, such as digging a small hole to plant a seedling. But try to keep any such disturbance to a minimum.

Here are some tips for how to practice **no-dig gardening**.

- **Whatever you do, don't turn the soil over! Disturb the soil as little as possible when you weed, seed, or plant.** In many cases, you can spread seed on the surface then cover with compost or soil to the desired depth. With seedlings, just make a hole big enough for the roots, put the seedling in the hole, then backfill with compost and/or soil.
- **Don't pull your garden weeds**, just cut them off at soil level, then repeat as they grow back; they will eventually run out of energy and die, leaving their roots to enrich the soil.
- **Better yet, use mulches to prevent weed growth:** organic mulches (e.g., compost, straw, cardboard, wood chips) will break down gradually and feed the soil organisms; inorganic mulches (e.g., crushed rock) will not break down, but will still protect the soil (see the 4th C).

To learn what some Canadian farmers are doing to improve the health of their soils, check out the many great interviews at the Compost Council of Canada's YouTube channel.

For more information, visit www.compost.org.



Cultivate Carefully ... one of the 6 C's for Healthy Soil

Canadian Farmers: *Bringing Soil Health to Life*

The 6Cs of Soil Health: Tackling Climate Change with Soil

Soil is an important ally in tackling climate change, as well as achieving productivity and profitability. Paying attention to the health of the soil realizes a rich harvest of benefits: climate stability, improved water quality, drought resistance, cost savings, healthier food, and a generally more profitable enterprise. It all comes down to six basic practices: **the 6Cs of Soil Health**.

1. **Control Compaction**
2. **Cultivate Carefully**
3. **Continuous Living Plants**
4. **Cover the Soil Constantly**
5. **Crop and Animal Diversity**
6. **Compost and other Soil Improvers**



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