

Canadian Farmers: Stewards for Healthy Soils

Farmers across Canada are increasingly aware of the importance of soil health.

Soil is a key partner in their farming success. It can also be a major solution to pressing environmental concerns such as climate change.

It all comes down to six basic principles. These are known as the
6Cs of Soil Health.

This Fact Sheet is one of a series that describe these basic principles for building healthy soils & provide video interviews with Canadian farmers who are putting these principles into practice.

The 6th C: Compost and Other Soil Improvers

Compost and other organic amendments play crucial roles in building healthy soils by improving soil structure, fertility, and biological activity.

Here's how they work:

- **Adding Organic Matter:** Compost and organic amendments are rich sources of organic matter, which serves as food for soil organisms and contributes to soil structure. When added to the soil, organic matter undergoes decomposition by soil microbes, releasing both nutrients and carbon. Some of the carbon is returned to the atmosphere as CO₂, but a significant amount is retained in the soil as humus, increasing soil carbon stocks,
- **Enhancing Soil Structure:** Organic matter in compost and other amendments helps to improve soil structure by promoting the formation and stability of soil aggregates. Soil aggregates create pore spaces in the soil, allowing for better water infiltration, air exchange, and root penetration. Improved soil structure reduces compaction, erosion, and runoff, leading to healthier soil conditions for both plants and microbes.
- **Supplying Nutrients:** Compost and organic amendments contain a wide range of essential plant nutrients, including nitrogen, phosphorus, potassium, and micronutrients. These nutrients are released gradually as organic matter decomposes, providing a steady supply of nutrients for plant uptake.



Soil Health Matters in Agriculture

featuring
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Northridge Farms
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At Northridge Farms, compost and compost teas are the basis for the natural fertility and vibrant health of the soils that grows their distinctive Honey Crisp apples.



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- **Balancing Soil pH:** Some composts and organic amendments can help to balance soil pH by buffering acidic or alkaline soils. Maintaining the proper soil pH is essential for nutrient availability and microbial activity in the soil.
- **Promoting Biological Activity:** Compost and organic amendments support a diverse and active soil microbiome, including bacteria, fungi, protozoa, nematodes, and earthworms. These soil organisms play critical roles in nutrient cycling, organic matter decomposition, disease suppression, and soil aggregation. By providing a rich habitat and food source for soil organisms, compost and organic amendments enhance soil biological activity, leading to healthier soil ecosystems.
- **Improving Water Retention and Drainage:** Organic matter in compost and other amendments helps to improve soil water retention and drainage properties. Soil organic matter acts like a sponge, holding onto moisture and releasing it slowly to plants' roots. This helps to prevent waterlogging in heavy soils and reduces water stress in sandy soils, contributing to more stable soil moisture conditions for plant growth.

Overall, compost and organic amendments are valuable tools for building and maintaining healthy soils by enriching soil organic matter, enhancing soil structure, supplying nutrients, balancing soil pH, promoting biological activity, and improving water management. Incorporating these materials into soil management practices can contribute to sustainable agriculture, environmental protection, and long-term soil health.



Compost is an all-round tonic for soils. The Horsnells produce their own compost and apply it at first planting of each tree, then as an annual amendment to the trees as they mature. In addition, the trees receive periodic applications of compost tea. The tea applications act like a probiotic, helping to boost microbial numbers and diversity in the soil so that the tree roots have a wide variety of microbial partners to choose from. This helps to create disease-suppressive soils and reduces the need for pesticides.

Canadian Farmers: Bringing Soil Health to Life



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