

# ORGANIC MATTER AND SOILS

## KEY POINTS

Organic matter is a vital component of all soils

Organic matter improves soil structure and water-holding capacity

Humus explained

How to make and use compost

A few problems to avoid

Organic matter is a vital part of all healthy soils. Its main beneficial effects are:

1. Improved soil structure, so that:
  - the soil holds more water for plants
  - water readily moves into the soil
  - waterlogging is less likely.
2. A major source of nutrients for plants.
3. Reduced leaching of plant nutrients from the soil.
4. To buffer the soil against rapid change in pH.
5. Biological control of disease-causing microbes through the decomposition of newly added organic materials. Adding organic matter is a powerful way to control plant root diseases without chemicals.
6. Hormonal effects on plants, especially to improve root development.

## How organic matter improves soil structure and water-holding capacity

When you apply compost, cow manure, poultry litter or a green manure crop to a soil, there is a massive explosion in the population of microbes in it. These microbes (bacteria, fungi, etc.) produce sticky secretions and humus which bridge the gaps between mineral particles or groups of mineral particles and so bind them together into crumbs or aggregates.

Typically, no more than 30% of organic materials added to a soil remains after a year. The rest has been used as food by countless hordes of micro-organisms and has ended up as carbon dioxide, water and nutrient elements that have been released into the soil.