

# SOIL STRUCTURE AND ORGANIC MATTER

Soil structure results from the interaction of the mineral particles (sand, silt and clay) with soil organic matter as they aggregate together to form the crumbs, blocks and other aggregates seen in the soil.

The proportion of particles of different sizes (soil texture) that make up the soil have a large impact on the soil structure and properties such as trafficability and workability. Clay soils usually have more small pores than sandy soils and these hold on to more water for longer.

When soil structure becomes damaged the natural porosity is markedly reduced so that, in severe cases, water and air movement and root development are restricted.

Organic matter influences **physical**, **chemical** and **biological** properties including:

- Improves drainage/workability of heavy soil
- Improves available water content of light soil
- Improves stability of soil crumbs
- Assists root exploration
- Improves nutrient holding capacity
- Releases nitrogen to plants
- Encourages earthworms, soil fauna.

Earthworms can be a good biological indicator



Damaged soil (medium) structure, continuous winter wheat and shallow cultivation



Cultivation used to improve soil (medium) structure, continuous winter wheat and plough cultivation



Cultivation and rotation used to improve soil (medium) structure, ley breaks and targeted cultivation

