

Regenerative Organic Hub Glossary

Allelopathic Effects:

The influence from one plant to another, either harmful or beneficial, through the release of chemical compounds called allelochemicals. Positive allelopathy can involve the release of compounds that promote the growth of other plants or protect them from pests or diseases. Negative allelopathy involves the release of toxins that inhibit the growth of other plants.

Biodiversity:

The variability of life on earth at all levels. It includes differences between species, with other species, and within the ecosystem.

Biomass:

Organic material derived from plants and animals. It's the mass of living things, including plants and animals, and can also include materials like wood, crops, and waste.

Bulk Density:

A volume based measure of soil compaction calculated by dividing the dry weight of a known volume of soil by the volume of the undried soil. $BD = M/V$ (M = mass, V = volume)

Carbon Cycle:

The series of processes by which carbon compounds are exchanged in the environment, involving the incorporation of carbon dioxide into living tissue by photosynthesis and its return to the atmosphere through respiration, the decay of dead organisms, and the burning of fossil fuels.

Carbon Sequestration:

The process of capturing and storing atmospheric carbon dioxide to reduce its concentration.

Compaction:

The compression of soil particles that results in reduced pore space between the physical particles of the soil. Soil compaction decreases the available space within the soil for air, water and microbes, thereby increasing the bulk density of the soil and having negative impacts on overall soil quality.

Condensation:

The process through which gas turns into a liquid.

Cover Crop:

A crop that is grown for the benefit and enrichment of the soil. They help manage soil erosion, soil fertility, soil quality, water, weeds, pests, diseases, biodiversity and wildlife in an agroecosystem.

Ecosystem:

A biological community of interacting organisms and their physical environment.

Effective Precipitation:

The amount of precipitation that infiltrates into the soil before running off or ponding. That is, the amount that effectively becomes available to the plant/crop.

Epigenetics:

The study of changes in gene activity that do not involve changes to the DNA sequence itself, but still affect how genes are turned on or off.

Evaporation:

The process through which liquid changes to a gas.

Exudate:

In the context of soil health, root exudates refer to the liquid secretions intentionally put out by plants through their roots. These fluids contain compounds such as sugars that are created by the plant and are highly valued by soil microbes. It is widely believed that soil microbes “trade” minerals and other limiting nutrients with the plant in exchange for the exudates. The composition and abundance of these exudates influences the microbes that inhabit the rhizosphere and play an important role in both nutrient cycling and disease and pest control.

Foliar:

Of, relating to, or applied to leaves.

Green Manure:

The process of growing plants, usually cover crops, specifically for plowing them into the soil while they're still green. This practice improves soil health by adding organic matter, increasing fertility, and enhancing soil structure.

Interception:

Any precipitation that does not reach the soil but is instead caught up by leaves, branches or the forest floor.

Intercropping:

A multi-cropping practice that involves growing two or more types of plants in the same area, usually with the goal of increasing yields or health of plants or soil.

Metabolites:

A substance created during metabolism/digestion.

Microbes/Microorganisms:

Tiny living organisms that are too small to be seen with the naked eye, including bacteria, viruses, fungi, protozoa and algae and they can be found anywhere. They play vital roles in ecosystems, including decomposing organic material, cycling nutrients, and supporting human health.

Nodulation:

A symbiotic process leading to the formation of nodules when Leguminosae roots are infected by rhizobia bacteria from soil. The bacteria in nodules convert atmospheric nitrogen to ammonium or nitrogen dioxide, which can be utilized for plant growth and development.

Nutrient cycle:

The process through which nutrients are transferred between living organisms and nonliving materials.

Organelles:

A specialized part of a cell that has a specific function.

Percolation:

The movement and filtering of fluids through a porous material such as soil. Percolation rates can be different depending on physical properties of soil, such as sand or clay.

Permaculture:

The development of agricultural ecosystems intended to be sustainable and self-sufficient. Its principles are derived using whole-systems thinking.

Poly-cropping:

Growing two or more crops in the same area at the same time.

Rhizosphere:

The soil zone around roots in which microbial biomass is impacted by the presence of plant roots.

Runoff:

The water that flows over the land after rainfall, irrigation or snowmelt. This water can pick up pollutants such as chemical, sediment, and animal waste carrying them to nearby water bodies.

Soil Crusting:

When fine soil particles seal to surface pores creating a hardened, dense layer on the soil surface. This can lead to a decreased infiltration rate, reduction of soil moisture, increased runoff, and reduced groundwater recharge.

Sustainability:

The practice of meeting the needs of the present without compromising the ability of future generations to meet their own needs, by balancing environmental protection, social equity, and economic development.

Transpiration:

The process of water moving through and leaving a plant.

Vasculature/Vascular system:

Systems within a plant which transport nutrients and fluids throughout the plant body.

Water Infiltration:

The process by which water on the surface moves downward into the soil.

Water Retention:

The capacity of soil to absorb, store, and retain water for use by crops and plants.

Xylem:

Tissues in a plant that move water and other nutrients upwards from the root.