

## **GLOSSARY**

**Abiotic** - Not living.

**Acid** - Any substance that can release hydrogen ions in a solution.

**Actinomycetes** - Decay microorganisms that have a fungus-like appearance but, like bacteria, do not contain a well defined nucleus.

**Adsorb** - *See* Adsorption.

**Adsorption** - The adherence of one material to the surface of another via electromagnetic forces, e.g., dust to a television screen.

**Adventitious rooting** - Roots emanating from above ground plant parts.

**Aerobic** - Needing oxygen to live.

**Alkaline** - Refers to substances with a pH greater than 7.

**Allelopathic** - Usually refers to the negative influence a plant has on other plants or microorganisms.

**Allelochemicals** - Refers to substances produced by one plant that have a negative effect on another.

**Amorphous** - Without consistency in its structure or form.

**Anaerobic** - Refers to an environment with little or no oxygen or organisms that require little or no oxygen to live.

**Antagonist** - Any organism that works against the action of another.

**Anthropogenic** - Caused by human action.

**Apatite** - A natural phosphate mineral.

**Aragonite** - Calcium carbonate (lime) formed by shellfish.

**Arthropod** - Refers to a group of animals with segmented bodies and exoskeletal structure such as insects, spiders and crustaceans.

**Assay** - Qualitative or quantitative analysis of a substance.

**Assimilation** - Digestion and diffusion of nutrients by an organism for growth and/or sustenance.

**ATM** - Atmosphere, a measurement of pressure of a gas.

**Atmosphere** - Refers to the naturally existing gases of any given environment. Also a measurement of pressure (See ATM).

**Autoclave** - A machine that, with heat and pressure, can react gases with other materials. It is also used to sterilize tools and equipment.

**Autotrophs** - Organisms that can synthesize organic carbon compounds from atmospheric carbon dioxide, using energy from light or chemical reactions.

**Bases** - *See* Base cation.

**Base cation** - A positively charged ion, historically belonging to the earth metal family (potassium, magnesium, calcium, etc.).

**Biomass** - The cumulative mass of all living things in a given environment.

**Biotic** - Pertaining to life or living organisms.

**Botany** - The study of plants.

**Calcite** - Calcium carbonate (lime).

**Carbon : Nitrogen ratio** - A ratio measured by weight of the number of parts carbon to each part nitrogen, e.g., 10:1, 50:1, etc.

**Carbohydrates** - A group of organic compounds that include sugars, starch and cellulose.

**Carnivores** - Organisms that consume animals or insects for sustenance.

**Cation** - An ion of an element or compound with a positive electromagnetic charge.

**Cation exchange capacity** - The total amount of exchangeable cations that a given soil can adsorb.

**Cellulose** - The most abundant organic compound on earth, found mostly in the cell walls of plants.

**Chelation** - The combination of metal (inorganic) and organic ions into a stable compound sometimes referred to as a chelate.

**Chlorosis** - Loss of normal green color in plants.

**Colloids** - Very small soil particles with a negative electromagnetic charge capable of attracting, holding and exchanging cations.

**Consumer** - *See* heterotrophs.

**Cultivar** - Refers to a specific plant variety.

**Detritus** - The detached fragments of any structure, whether biotic or abiotic, that are decomposing or weathering.

**Dolomite** - Calcium, magnesium carbonate (magnesium lime).

**Edaphic** - Refers to factors, such as soil structure, atmosphere, fertility, and biological diversity, that influence the growth of plants.

**Edaphology** - The study of edaphic factors.

**Edaphos** - Greek word meaning soil.

**Entomo** - Prefix pertaining to insects.

**Enzymes** - A group of proteins that hasten biochemical reactions in both living and dead organisms.

**Eutrophy** - Refers to the excessive nutrient enrichment of ponds or lakes, causing the accelerated growth of plants and microorganism and depletion of oxygen.

**Evapotranspiration** - Refers to water loss from the soil from both evaporation and transpiration through plants.

**Exude** - The release of substances from cells or organs of an organisms.

**Faunal** - Pertaining to microscopic or visible animals.

**Fecundity** - Refers to the reproductive capabilities of an organism.

**Floral** - Pertaining to plants or bacteria, fungi, actinomycetes, etc.

**Free oxygen** - Gaseous oxygen not bound to other elements.

**Furrow slice** - Plow depth of approximately 6 - 7 inches.

**Geoponic** - Pertaining to agriculture or the growing of plants on land.

**GMA** - Guaranteed Minimum Analysis

**Gustation** - Or gustatory, refers to an organism's sense of taste.

**Hemicellulose** - A carbohydrate resembling cellulose but more soluble; found in the cell walls of plants.

**Herbivores** - Organisms that consume plants for sustenance.

**Heterotrophs** - Organisms that derive nutrients for growth and sustenance from organic carbon compounds but are incapable of synthesizing carbon compounds from atmospheric carbon dioxide.

**Humification** - The biological process of converting organic matter into humic substances.

**Humology** - The study of humus.

**Hydrolysis** - The reaction of hydrogen (H) or hydroxyl (OH) ions from water with other molecules, usually resulting in simpler molecules that are more easily assimilated by organisms.

**Hyphae** - A microscopic tube that is a basic component of most fungi in their growth phase.

**In situ** - Refers to natural or original position. Example: organisms in situ may respond differently to a stimulus than they would in a laboratory.

**Ion** - Any atom or molecule with either a positive or negative electromagnetic charge.

**Kairomone** - A chemical substance produced by organisms (e.g., plants or insects) that attracts another species or the opposite gender. Example: 1) Fruit produces kairomones that attract certain insects. 2) Many insects produce kairomones called pheromones that attract the opposite sex.

**Ligand** - A compound, molecule, or atom with the capability of bonding with another compound, molecule, or atom.

**Lignin** - A biologically resistant fibrous organic compound deposited in the cell walls of cellulose whose purpose is strength and support of stems, branches, roots, etc.

**Lodging** - When plants become too top heavy to stand upright and instead lie on or fall over onto the ground.

**Macro** - A prefix meaning large.

**Meso** - A prefix meaning middle.

**Metabolism** - The biological and chemical changes that occur in living organisms or the changes that occur to organic compounds during assimilation by another organism.

**Metabolite** - A product of metabolism or a substance involved in metabolism.

**Meteorology** - The study or science of the earth's atmosphere.

**Methodology** - A system, or the study of methods.

**Micelle** - (Micro-cell) A negatively charged (colloidal) soil particle most commonly found in either a mineral form (i.e., clay) or organic form (i.e., humus).

**Micro** - A prefix meaning small, usually microscopic.

**Mineralized** - The biological process of transforming organic compounds into non-organic compounds (minerals) e.g., mineralization of protein into ammonium.

**Mineralogy** - The study or science of minerals.

**Mitigate** - To lessen.

**Mmho or Millimho** - A thousandth of a mho, which is a measure of a material's ability to conduct electricity. Usually used in soil tests to determine salt levels.

**Molecule** - The smallest particle of a compound that can exist independently without changing its original chemical properties.

**Monoculture** - The cultural practice of growing only one variety of crop in a specific area every season without variance.

**Morphology** - The study or science of the form or structure of living organisms.

**Mucilage** - Compounds synthesized by plants and microbes that swell in water, taking on a gelatinous consistency, that function to maintain a moist environment and bind soil particles together to form an aggregation.

**Myco** - A prefix that refers to fungi.

**Nitrification** - A process performed by soil bacteria that transforms ammonium nitrogen into nitrite and, finally, nitrate nitrogen. Nitrate is the form of nitrogen most often used by plants.

**N-P-K** - Symbols in a fertilizer grade that represent nitrogen, available phosphorus, and soluble potash respectively.

**OM** - Abbreviation for organic matter.

**Oxidation** - Usually refers to the addition or combination of oxygen to other elements or compounds.

**Oxidize** - To add oxygen. *See* Oxidation.

**Parent Material** - The original rock from which a soil is derived.

**Pedology** - The study or science of soils.

**Pedosphere** - The top layer of the earth's crust, where soils exist.

**pH** - is a measure of acidity or alkalinity. A value of 7 is neutral; lower values indicate acidity and higher values indicate alkalinity. The farther away from neutral the pH is, the more acidic or alkaline it is.

**Phenology** - The study or science of biological phenomena and their relationship to environmental factors.

**Pheromone** - A chemical produced by an insect or other animal that attracts another member of the same species, usually of the opposite sex.

**Physiology** - The study or science of the biological functions and/or activities of living organisms.

**Phyto** - A prefix referring to plants.

**Phytotoxic** - A substance that is toxic to plants.

**Porosity** - Refers to the spaces between soil particles.

**Producer** - *See* Autotrophs.

**Rhizosphere** - The area of soil in immediate proximity to roots or root hairs of plants.

**Saprophyte** - An organism that can absorb nutrient from dead organic matter.

**Senescence** - The aging process.

**SOM** - Abbreviation for soil organic matter.

**Steward** - A person who manages or cares for property of another. In agriculture, the term can refer to someone who cares for his or her own land but believes that ownership does not entitle one to dispose of the land's resources for his or her own personal gain.

**Substrate** - Material used by microorganisms for food.

**Symbiotic** - A relationship between two organisms, usually obligatory and often of mutual benefit.

**Synergy** - Where the activities or reactions of two or more organisms or substances are greater than the sum of the agents acting separately.

**Taxonomy** - The science of classification.

**Tectonic** - Pertaining to the structure and form of the earth's crust.

**Texture analysis** - An analysis of soil particles determining the percentages of sand, silt and clay.

**Throughfall** - Moisture or precipitation that drips from aboveground plants, such as trees, to the ground. Throughfall is thought to contain some substances leached from leaf surfaces.

**Topography** - Pertaining to the specific surface characteristics of a given landscape.

**Trophic levels** - Levels of consumers within a food chain in relation to producers of organic nutrients, such as plants. For example, producers - primary consumers - secondary consumers - tertiary consumers - decay organisms.

**Valence** - A measurement of how many electrons an atom or molecule can share in a chemical combination. A positive valence indicates electrons offered in a chemical bond, whereas a negative valence is the number of electrons that can be accepted.

**Volatile** - Refers to substances that can easily change, often into a gas.