**Terminology: Soil Organisms**

Organism- is any living system, such as an animal, plant, fungus, protist, archaeon, or bacterium. All known types of organisms are capable of some degree of response to stimuli, reproduction, growth and development and homeostasis.

Microorganism- An organism that can be seen only with the aid of a microscope and that typically consists of only a single cell. Microorganisms include bacteria, protozoans, and certain algae and fungi.

Macro organism- Any organism that can be seen with the naked eye

Decomposition- [Conversion](http://www.businessdictionary.com/definition/conversion.html) or decay of [degradable](http://www.businessdictionary.com/definition/degradable.html) (or chemically unstable) [material](http://www.businessdictionary.com/definition/material.html) to simpler (or more stable) components or forms by the natural [action](http://www.businessdictionary.com/definition/action.html) of air, water, light, or microorganisms.

Soil Fertility- refers to the ability of a **soil** to sustain agricultural plant growth, i.e. to provide plant habitat and result in sustained and consistent yields of high quality.

Porosity- is the quality of being porous, or full of tiny holes.

Microflora- bacteria and microscopic algae and fungi, especially those living in a particular site or habitat

Macroflora- is a term used for all the plants occurring in a particular area that are large enough to be seen with the naked eye

Microfauna- refers to microscopic organisms that exhibit animal-like qualities. **Microfauna** are represented in the animal kingdom (e.g., nematodes, small arthropods) and the protist kingdom (i.e., protozoans

Mesofauna- are invertebrates between 0.1mm and 2mm in size, which live in the **soil** or in a leaf litter layer on the **soil** surface. ... **Soil mesofauna** feed on a wide range of materials including other **soil** animals, microorganisms, animal material, live or decaying plant material, fungi, algae, lichen, spores, and pollen

Macrofauna- as being larger than 2mm in size. This group includes larger animals such as badgers, rabbits and gophers, which all spend a part of their life in the **soil**, as well as moles, snails, slugs, earthworms, ants, termites, millipedes, woodlice, which all spend most of their life in the **soil**

Bacteria- a member of a large group of unicellular microorganisms that have cell walls but lack organelles and an organized nucleus, including some that can cause disease.

Fungi- any of a diverse group of eukaryotic single-celled or multinucleate organisms that live by decomposing and absorbing the organic material in which they grow, comprising the mushrooms, molds, mildews, smuts, rusts, and yeasts, and classified in the kingdom Fungi

Actinomycetes- a bacterium of an order of typically nonmotile filamentous form. They include the economically important streptomycetes, and were formerly regarded as fungi.

Algae- simple nonflowering plant of a large group that includes the seaweeds and many single-celled forms. Algae contain chlorophyll but lack true stems, roots, leaves, and vascular tissue.

Virus- an infective agent that typically consists of a nucleic acid molecule in a protein coat, is too small to be seen by light microscopy, and is able to multiply only within the living cells of a host.

Protozoa- Any of a large group of one-celled organisms (called protists) that live in water or as parasites. Many **protozoans** move about by means of appendages known as cilia or flagella. **Protozoans** include the amoebas, flagellates, foraminiferans, and ciliates.

Nematode- round worm example: Ascaris

Arthropod- jointed examples: insect, spider crustacean

Insect- small arthropod with six legs example: beetles, bee, fly

Annelid- segmented worms example: earthworm

**Seed germination**

For non-dormant seeds, germination starts when a seed is provided with water as long as the temperature is appropriate. The uptake of water by dry seed is called imbibition (imbibition means to drink: seeds imbibe water, you do not imbibe seeds). As seeds imbibe water, they expand and enzymes and food supplies become hydrated. Hydrated enzymes become active and the seed increase its metabolic activities to produce energy for the growth process. In addition, the water causes turgor pressure to increase in the cells and they are able to enlarge.

As you will see in the movies of germinating seeds, the first part of the seedling to emerge from the seed coat is the root (also called the radical). The emergence of the root is typically used as the first indication that a seed is viable. Eventually the shoot will also expand and emerge from the seed.

If germination occurs in darkness, root growth slows after the shoot emerges and shoot elongation accelerates. This behavior increases the chance that the seedling will emerge from soil into the light where it will be able to obtain energy from sunlight by photosynthesis. Once a seedling emerges into the light, the plant undergoes dramatic changes such as turning green and producing leaves. This light-dependent developmental transformation is called photomorphogenesis