**BENEFITS OF ORGANIC MATTER\***

* **Nutrient Supply** Organic matter is a reservoir of nutrients that can be released to the soil, such as nitrogen, phosphorous, and micronutrients.
* **Water Holding Capacity** Organic matter behaves somewhat like a sponge, can absorb and hold up to 90 percent of its weight in water, which can be absorbed by plant roots and connected fugal hyphae. In contrast, clay holds great quantities of water, but much unavailable to plants.
* **Soil Structure Aggregation** Organic matter causes soil to clump and form soil aggregates, improving soil structure. With better soil structure, permeability (infiltration of water through the soil) improves, in turn improving the soil's ability to take up and hold water.
* **Erosion Prevention** Increasing soil organic matter from 1 to 3 percent can reduce erosion 20 to 33 percent because of increased water infiltration and stable soil aggregate formation caused by organic matter.
* **Provides “home” that microbiota live in, and water extractable organic carbon is the “food” they eat** Soil life consists of many types of organisms including fungi/rhizosphere complexes, bacteria, arthropods and more. Soil life helps convert nutrients from mineral soil and organic matter into forms plants can use. It facilitates exchange between roots and soil of nitrogen compounds, liquid carbon from photosynthates, macro- and micro-nutrient liberation from rocks and subsequent root uptake, plant defense symbiosis and other vital functions. Soil life diversity reduces plant pests, diseases, and micronutrient diversity.

\*soil organic matter is the fraction of the soil that consists of plant and animal tissues in various stages of breakdown, and is primarily composed of carbon, nitrogen and phosphorous in various forms

Source: Nobel.org, David Montgomery, *Growing a Revolution* (2017).