

# SOIL HEALTH FACT SHEET

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Soil provides nutrients for plant growth, absorb and hold rain water to use during dryer periods, filter and buffer potential pollutants from farm fields, act as the foundation for agricultural activities and habitat for soil microbes creating symbiotic ecosystem to keep the ecosystem running smoothly.

Soil as an ecosystem; regulate water, sustain plant and animal life, filter and buffer potential pollutants by microbes and minerals, cycling nutrients, medium for plant growth

## Soil Aggregates

Soil Aggregates/ clumps; made up of soil particles that bind strongly together. Organic matter plays a major role in binding soil particles to create stable aggregates improving soil structure. Structure refers to size and shape of aggregates and space between clumps create pores for retention and exchange of air and water.

## Why Aggregate stability is Important

- Rain water infiltration
- Plant Root growth
- Resistance to water and wind erosion
- Indicate high organic matter content
- Biological activity
- Soil nutrient cycling
- Sustainable crop production and higher yields
- Minimize soil erosion

## Soil Carbon Sequestration

Sequestration of atmospheric carbon dioxide as organic carbon (in soil organic matter) attracts attention as a method of mitigating green house gas emission and one of the solutions for climate change.

**Bottom line:** Fallowing as a crop rotation reduces soil carbon sequestration and soil aggregate stability and thereby soil health. Cover crops and crop rotation with minimum tillage improves soil health

## “Soil Health”

*Ability of soil to function as a living Ecosystem that sustains plants, animals and humans. Only living things have health. Soil is an active growing medium which nurtures billions of bacteria, fungi and other microbes creating symbiotic ecosystem (USDA)*

*“Soil Carbon Sequestration”, is the process involved in carbon capture and the long term storage of atmospheric carbon dioxide or other forms of carbon in plants, soils and the ocean to defer global warming*



Photo Credit: SU.EDU.KRD/RESEARCH –Soil Aggregates built after Manure Application

## Aggregate Stability (2nd Picture has stable Aggregates)

Photo Credit: Cornell University

