Building Soil Organic Matter (SOM)

Soil Health: crop diversity; living roots throughout the year; cover the soil; less disturbance; & livestock integration where applicable.

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Ref. Soil Organic Matter in Sustainable Agriculture

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The difficulty of building SOM, is that about two-thirds of the readily decomposable organic matter returned to the soil is oxidized to CO$_2$.

Mineralization: the conversion of an element from an organic form to an inorganic state as a result of microbial decomposition.

The rate of SOM decomposition depends on: temperature, moisture, aeration, C:N ratio, pH, organic carbon source (quantity & quality).

Immobilization: the conversion of an element from the inorganic to the organic form in microbial tissues or in plant tissues.

Evaluate soil health based on: Management system applied, % SOM, texture, structure, slake test, and other (e.g. earthworms, SFW, reactive carbon, etc.).

NOTE: Various species of fungi and bacteria can solubilize mineral elements from the mineral soil.