Organic matter

Soil organic matter is the residue of plant and animal material in various stages of decomposition. It helps hold both water and nutrients in the plant root zone and, upon decomposition, becomes plant food. Organic matter of the surface soil (from the surface down to the first significant change in color) is estimated visually by examining the darkness of color of an air-dry sample. Usually the darker the color of the surface soil, the higher the organic matter content. It is generally agreed that, where the soil organic matter is between 0 and 2 percent, it is low; between 2 and 5 percent, it is medium; and where it is over 5 percent, it is high.

Thickness of rooting zone

The total thickness of surface and subsoil layers readily penetrated by crop roots is considered to be the thickness of the rooting zone. Dense hardpan, clay pan, rock, a seasonally high water table, or other unfavorable conditions may limit the rooting zone. Rooting zone thickness is described as follows:

Thin	0 - 19.9 inches
Thick	20 - 39.9 inches
Very thick	40 inches or more

Permeability

Permeability refers to the rate of water or air movement through the most restrictive layer in the soil, including bedrock, if present. This may be considered as internal drainage. Permeability can be estimated from texture, compaction, and arrangement of soil particles (structure). The drawing illustrates the common ways particles may be arranged to form soil structure. This secondary grouping of particles may affect the soil's internal drainage by either providing a pathway for water to drain (such as around the outside of granules) or by retarding water movement (such as with platy structure or where structure is absent and the soil is massive).

Rapid. Soils are generally not finer than loams to sandy loams throughout the profile, with little if any defined structure other than being single grained (very little restriction to movement of water and air).

Moderate. These soils are generally light silty clay loam (i.e., on the coarser-textured side of the silty clay loam category), light clay loam, or light sandy clay loam with prismatic to granular or blocky structure, and have no severely restrictive layers. Weakly cemented sandy material is also included.

Slow. Soils generally would be on the fine side of the loamy group, such as heavy silty clay loam to heavy sandy clay loam. Such soils would be structureless (massive) or have platy structure, weakly expressed blocky structure, or weakly expressed prismatic structure. Strongly cemented sandy material is included here, as is impermeable or slowly permeable bedrock.