Soil Texture

Soil texture probably exerts more influence on soil productivity and management requirements than any other physical characteristics of soil. Texture of the surface layer has an important influence on tilth, ease of tillage, resistance to soil erosion, water-holding capacity, and ability to hold and release nutrients.

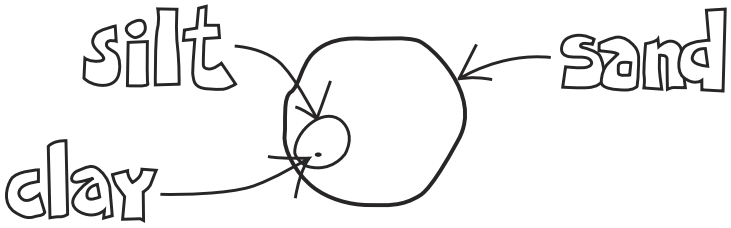
Texture reflects the proportion of sand, silt, and clay size particles that make up the soil mass. Texture is determined in the field by pressing and rubbing moist soil between the fingers. To learn to determine texture, you should work with samples of known texture or compare your determinations with those of experienced people.

The texture of a soil is a permanent characteristic. It is a direct reflection of soil parent material and long weathering processes. Soil management practices do not change soil texture.

Coarse textured soils tend to be droughty, low in fertility, and subject to erosion. Fine textured soils are hard to manage, have reduced air and water movement, tend to shrink and swell, and become slippery when wet.

Soils rarely consist wholly of individual grains of one size. They usually have different combinations of sand, silt, and clay. These combinations can be identified, and, as a result, soils are given different textural names.

Size of Individual Grains	
Sand	2.0-0.05 mm
Silt	0.050-0.002 mm
Clay	0.002 mm or less



Sand is a piece of the parent stone. It has not undergone any chemical changes during the size reduction process. Sand is chiefly comprised of harder minerals, such as quartz or feldspar.

Silt particles are the smallest particles with the same basic composition as the original stone. They are formed by additional breaking of sand grains along with some chemical dissolving resulting in rounded corners. Silt particles are approximately the size of face powder particles.

Clay particles are totally different minerals than their parent material. The clay particles are mineral crystals resulting from the chemical reactions of acids upon other minerals. The flat crystals fit very closely together and have more surface area than equal volumes of sand and silt. Clay particles are the smallest mineral particles in the soil.

Definition of Terms Used:

Sand is the gritty material that is felt when moistened soil is rubbed between the fingers. Individual grains can be readily seen or felt.

Silt is the floury material that is felt when soil is rubbed between the fingers. It is neither gritty nor sticky.

Clay usually forms very hard lumps or clods when dry and is plastic and usually sticky when wet. Moist soil pinched between thumb and finger will form a flexible ribbon.

Loam is a combination of sand, silt, and clay.