



Appendix C: Typical Soil Types

USDA Definitions of Soil Textures

Soils are comprised of particles with a wide variety of shapes and sizes. Depending on their size and individual mineral particles, soils are divided into three major categories:

- Sand
- Silt
- Clay

The U.S. Department of Agriculture has developed a system of classification of the various particles sizes to define “soil texture”. The relative proportions of sand, silt and clay found in a particular soil sample determine soil texture. Overall, there are 12 recognized soil textural classifications based on the particle size. The percentages of particle sizes that can pass through various sieve sizes will determine soil texture. A wide variety of particle sizes accounts for the 12 recognized soil texture classifications.

Soil texture can provide some insight into soil-plant interactions particularly water holding or retention properties. Other physical properties such as mineral content can also determine a plant's ability to absorb and hold onto existing soil nutrients or additives as a result of supplemental fertilization.

The three major categories of soil texture represent different particle shapes. For example, sand tends to be quite angular and fairly large in comparison to a clay soil particle. The shape and electrical charge of a sand soil particle results in a porous soil that tends to be fast draining and can pass nutrients below root zones where they can't be absorbed. These types of soils commonly do not compact as well as smaller more tightly shaped soil particles common to loams or clay soils.

The Table 1 below depicts the recognized soil size separates used to classify a particular soil while Table 2 provides a commonly recognized soil texture classification chart.

TABLE 1

U.S. Department of Agriculture
Size Limits of Soil Separates

Name of Separate	Diameter (Range) (Sieve size in mm)	WeatherTRAK soil type equivalents
Very Coarse Sand	2.0-1.0	Sandy
Coarse Sand	1.0-0.5	Sandy
Medium Sand	0.5-0.25	Sandy
Fine Sand	0.25-0.10	Sandy Loam
Very Fine Sand	0.10-0.05	Loam
Silt	0.05-0.002	Clay Loam
Clay	Below 0.0002	Clay

TABLE 2

U.S. Department of Agriculture
Soil Texture Chart

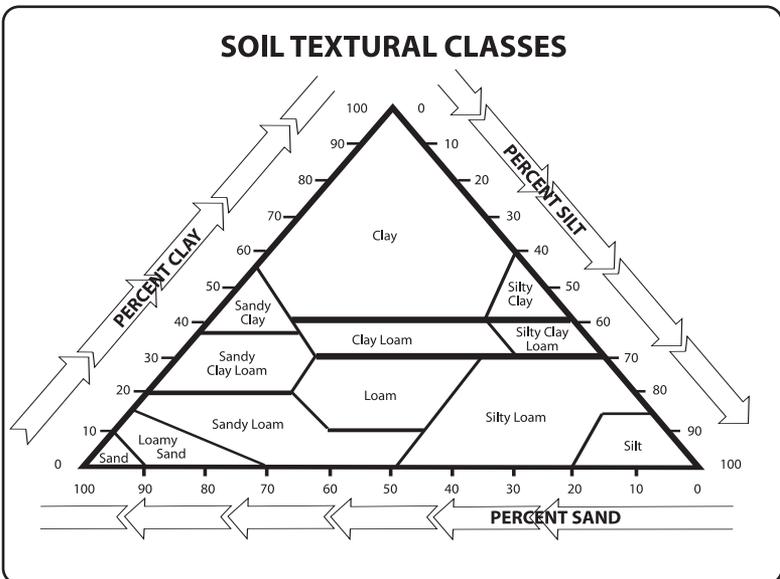


Chart showing the percentages of clay (below 0.002 mm), silt (0.002 to 0.05 mm) and sand (0.05 to 2.0 mm) in the basic soil textural classes.