

# Appendix 2

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## Soil texture classification

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For a more complete description of soil texturing, refer to 'Australian Soil and Land Survey handbook', compiled and edited by R.C. McDonald, R.F. Isbell and J.G. Speight, from which most of these notes were prepared.

Soil texture indicates the relative proportions of sand, silt, and clay-sized particles in a soil. These proportions govern the amount of water a soil can store and how much is available for plant growth. Texture determines the speed at which water drains through a soil profile which is important for crop growth or for storing water in earth dams.

Soil texture should not be confused with the consistency properties of soil such as 'heavy' or 'light' which refer to its ease of cultivation.

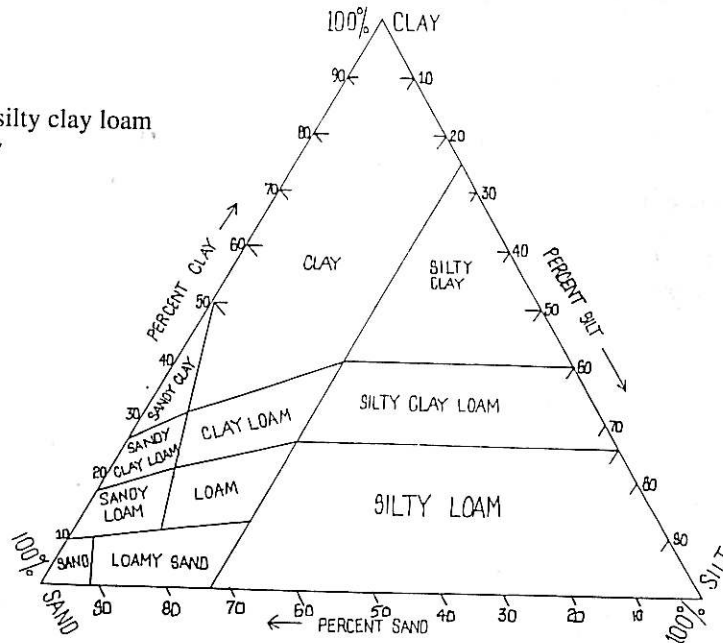
Soil texture can be assessed readily in the field by hand. The method is a short-cut to the more exact technique of mechanical analysis used in the laboratory in which the various proportions of sand, silt and clay in the soil are measured.

If moist soil is hand-textured, it can be placed into textural classes as shown in Figure 1, and compared with others.

Soil rarely consists of only one particle size. The basic classes, in increasing proportions of the fine fractions (silt and clay) are:

Increasing clay content →  
 sand, loamy sand  
 sand loam, loam, silt loam  
 sandy clay loam, clay loam, silty clay loam  
 sandy clay, silty clay and clay

**Figure 1: Texture diagram.**  
 (Based on international fractions with effective diameters 0.002, 0.02 and 2mm for the upper limits of clay, silt and sand fractions respectively.)



## Method

Soil texture is determined on soil which passes a 2mm sieve. Particles greater than 2mm are classed as gravel or stones and modify the textural classes, such as gravelly sandy loam, or stoney loam.

Texture cannot be assessed on a handful of dry soil. A hand texture test is done by placing enough sieved soil to fit comfortably in the palm of the hand. Water is added, a little at a time and the moistened soil kneaded to form a ball. When the ball just fails to stick to the fingers, no more water is added but kneading is continued for about one minute to produce a soil ball uniformly wet throughout.

The behaviour of this moist soil and the flat ribbon produced when it is squeezed between the thumb and forefinger, characterises the soil texture. The squeezed soil forms a flat ribbon between 2 to 3mm thick. The length of this ribbon indicates the soil texture.