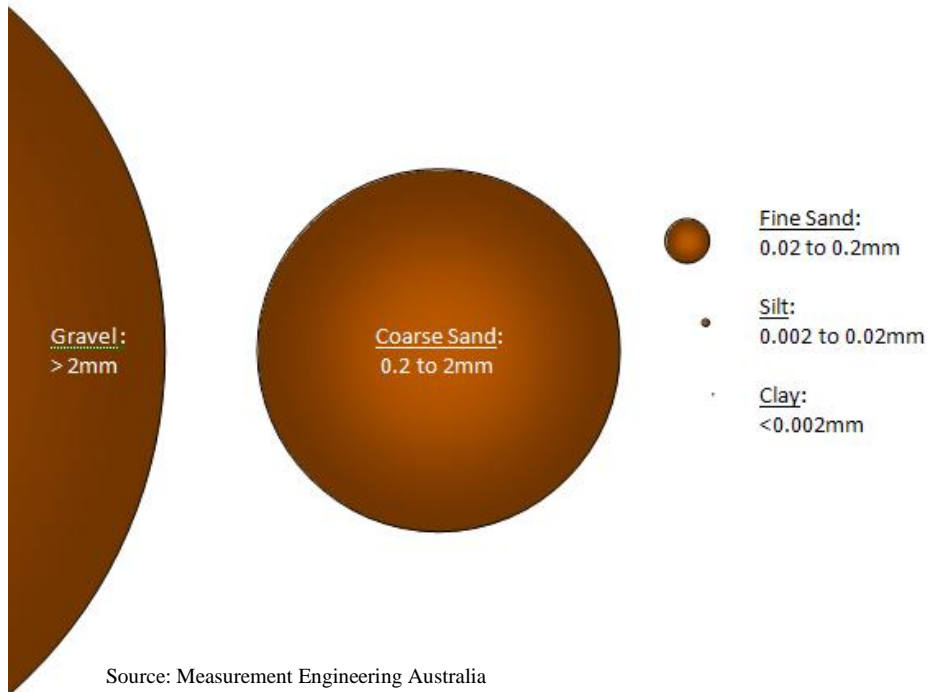




2015 SOIL HEALTH WORKSHOP

Soil Texture –

Determined by the size and type of particles that make up the soil. During the testing procedure, sand particles are retained on a sieve while silt and clay pass through. Silt and clay are separated via particle settlement.



Source: Measurement Engineering Australia

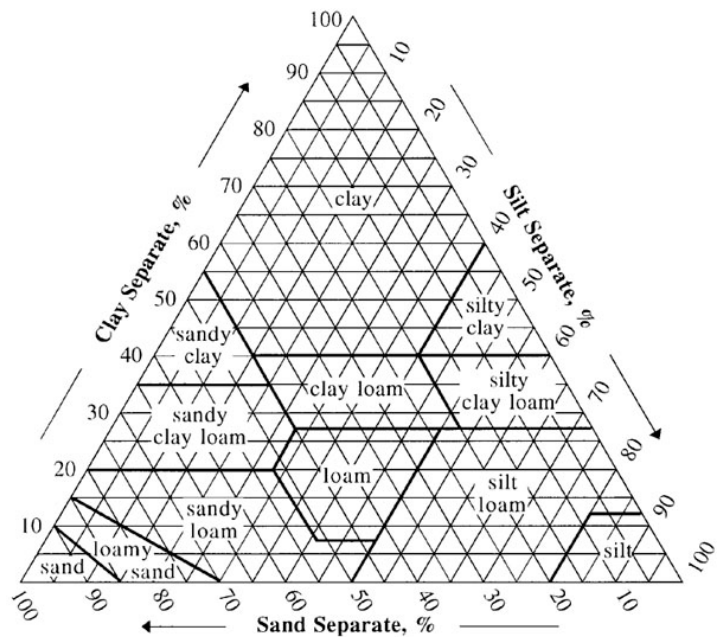
Stoke's Law –

Can be used to determine the rate of sedimentation. Thanks to Stoke's Law, we know silt particles settle to the bottom of our texture beaker within two hours while clay particles remain suspended in the solution.

$$(F_d) = 6\pi\eta r v$$

Textural Triangle –

Used to classify soil types based on the sand, silt, and clay distribution.

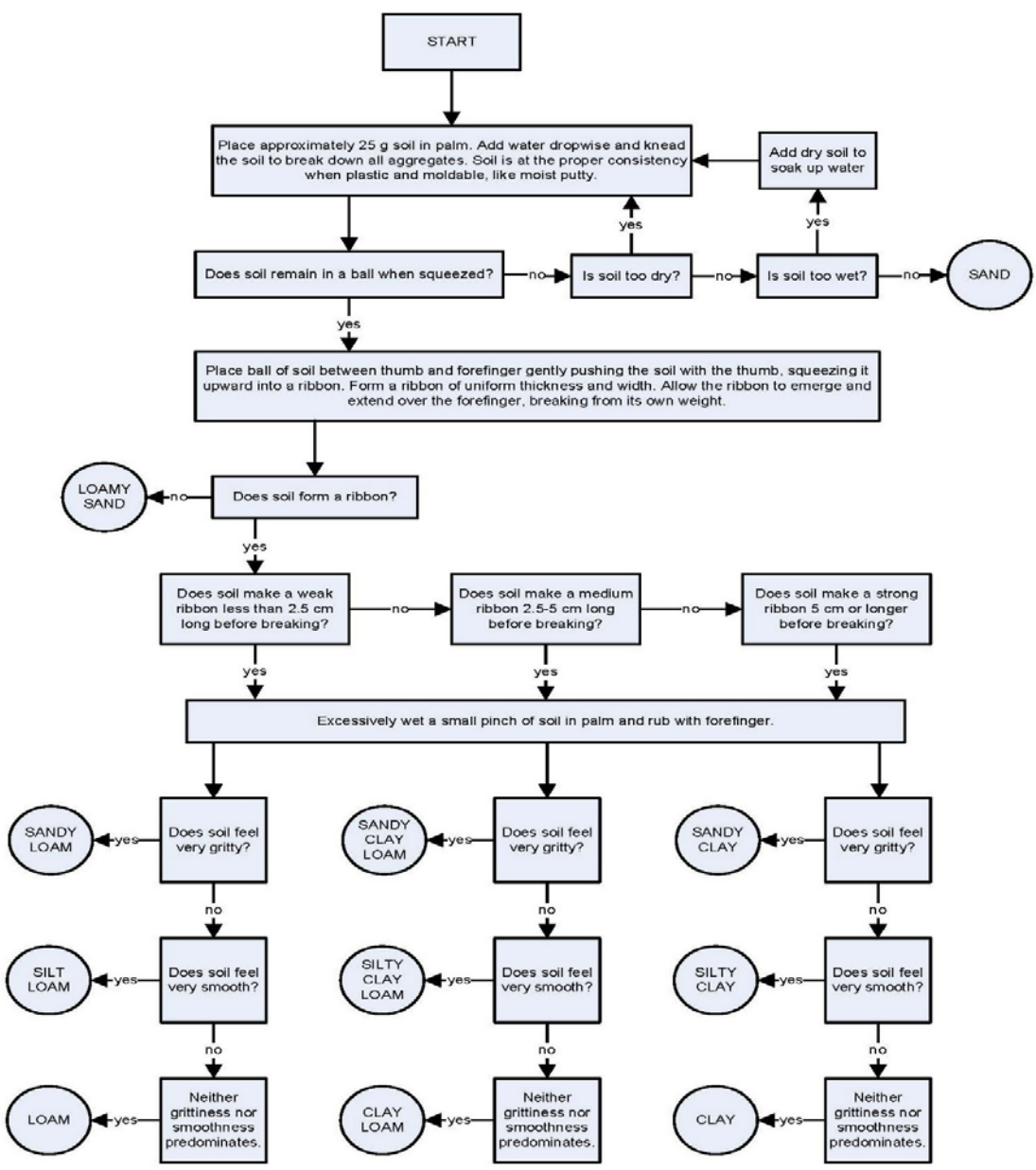


Source: USDA - NRCS



2015 SOIL HEALTH WORKSHOP

HAND TEXTURE



Source: USDA - NRCS



TEXTURE... Why measure texture?

Soil particles are the main building blocks of soil, and affect all processes. Without knowing the texture of a soil, it is hard to interpret the values measured for other soil properties. For example, a sandy soil with an organic matter content of 2.5% and aggregate stability of 40% would be considered pretty healthy, while a clayey soil with those same numbers would not. Texture itself is not an indicator of soil health, because it generally can't be changed by human management (at least not on a large scale!)

Sample ID	Total Dry Soil Weight (g)	Tin 1 (SAND) Can ID	Tin 1 (SAND) Weight (g)	Tin 1 + Dry SAND Weight (g)	Tin 2 (SILT) Can ID	Tin 2 (SILT) Weight (g)	Tin 2 + Dry SILT Weight (g)

- Sand %** = (oven dried sand mass / original sample mass) x 100%
- Silt %** = (oven dried silt mass / original sample mass) x 100%
- Clay %** = 100% - (Sand % + Silt %)

Sand and Silt Tins Ready for Drying Oven



Source: Cornell Soil Health Laboratory Team

Rapid Texture Station



Source: Cornell Soil Health Laboratory Team