West Virginia University
DAVIS COLLEGE OF AGRICULTURE, NATURAL RESOURCES AND DESIGN

Estimating your soil sample texture

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How to determine your soil sample texture

Soil Texture

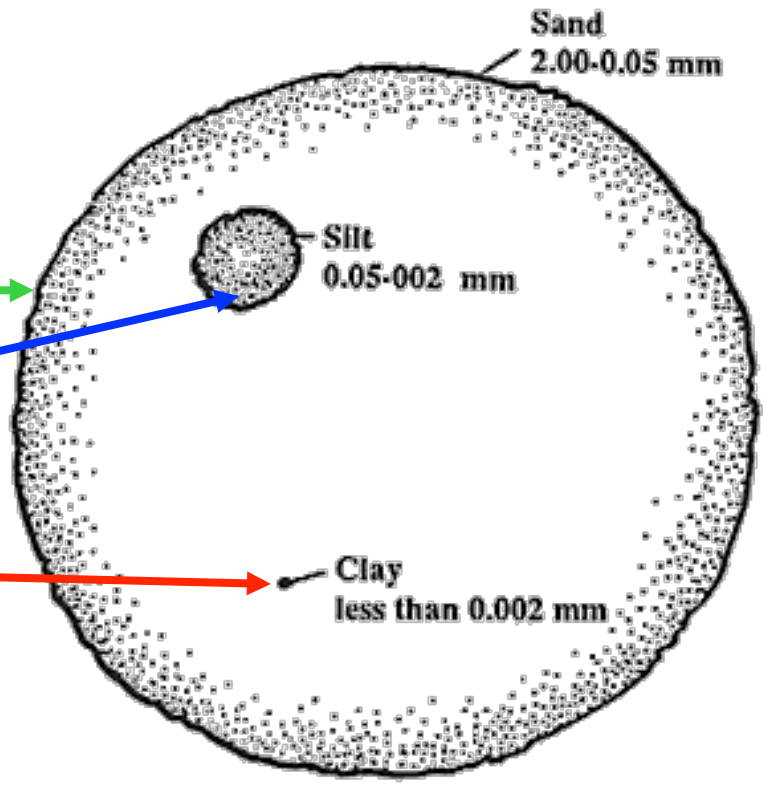
- Soil texture is based on the relative amount of three soil mineral fractions: sand, silt, and clay in a soil sample.

- Can we separate the three soil mineral fractions BY FEEL? **YES**

- Sand **GRITTY Feel**
- Silt **Talc – Floury Feel**
- Clay **Tends to be Sticky when Wet**

The Three Mineral Soil Fractions are separated by size

- Sand (2.0 - 0.05mm)
- Silt (50 – 2 um)
- Clay (< 2 um)



Field Determination of Soil Texture using the *Ribbon or Texture-by-Feel Method*

Ribbon or Texture-by-Feel Method

1. Collect a soil sample and remove the observable the coarse fragments, organic material (roots, etc.), and other materials.

2. If sample is dry, moisten the sample. Do not over wet or completely saturate the sample.

3. Knead sample between your thumb and finger. Crush all the soil aggregates and remove any other coarse fragments or non-soil aggregates.

4. Follow the flow diagram provided in the web page.

Soil Texture by Feel

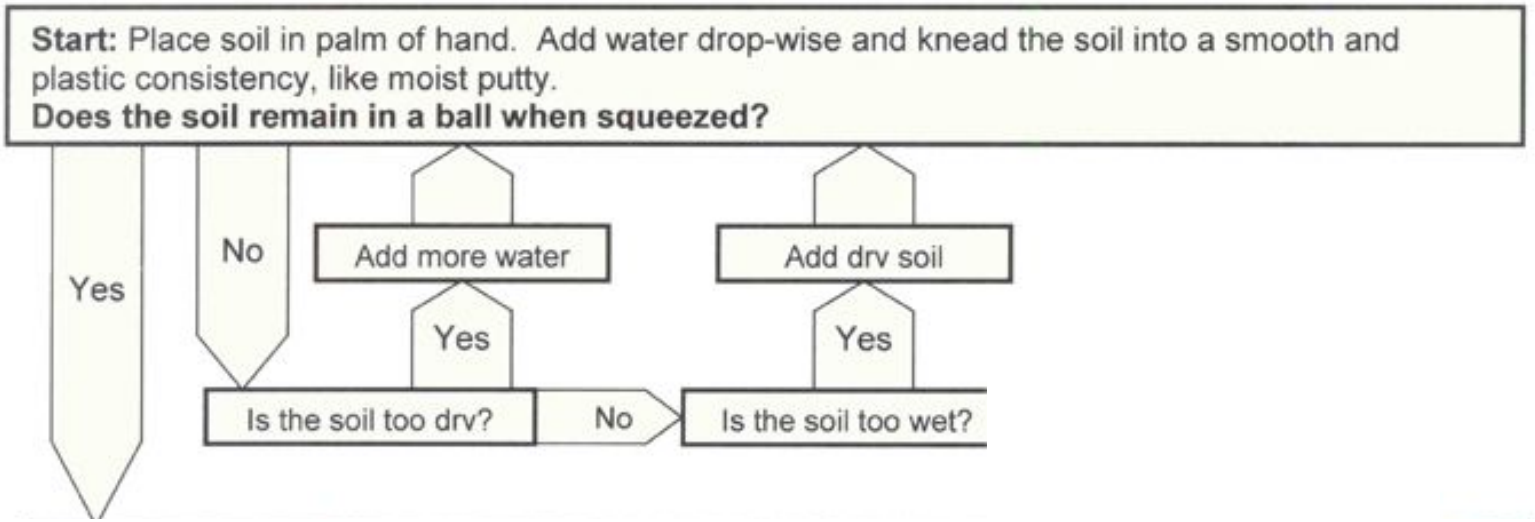
Start: Place soil in palm of hand. Add water drop-wise and knead the soil into a smooth and plastic consistency, like moist putty.
Does the soil remain in a ball when squeezed?

- Yes → Place ball of soil between thumb and forefinger, gently pushing the soil between with the thumb, squeezing it upward into a ribbon. Form a ribbon of uniform thickness and width. Allow ribbon to emerge and extend over the forefinger, breaking from its own weight.
  Does the soil form a ribbon?
  - Yes → **What kind of ribbon does it form?**
  - No → **Loamy Sand**
- No → Is the soil too dry?
  - Yes → Add more water
  - No → Is the soil too wet?
    - Yes → Add dry soil
    - No → **Sand**

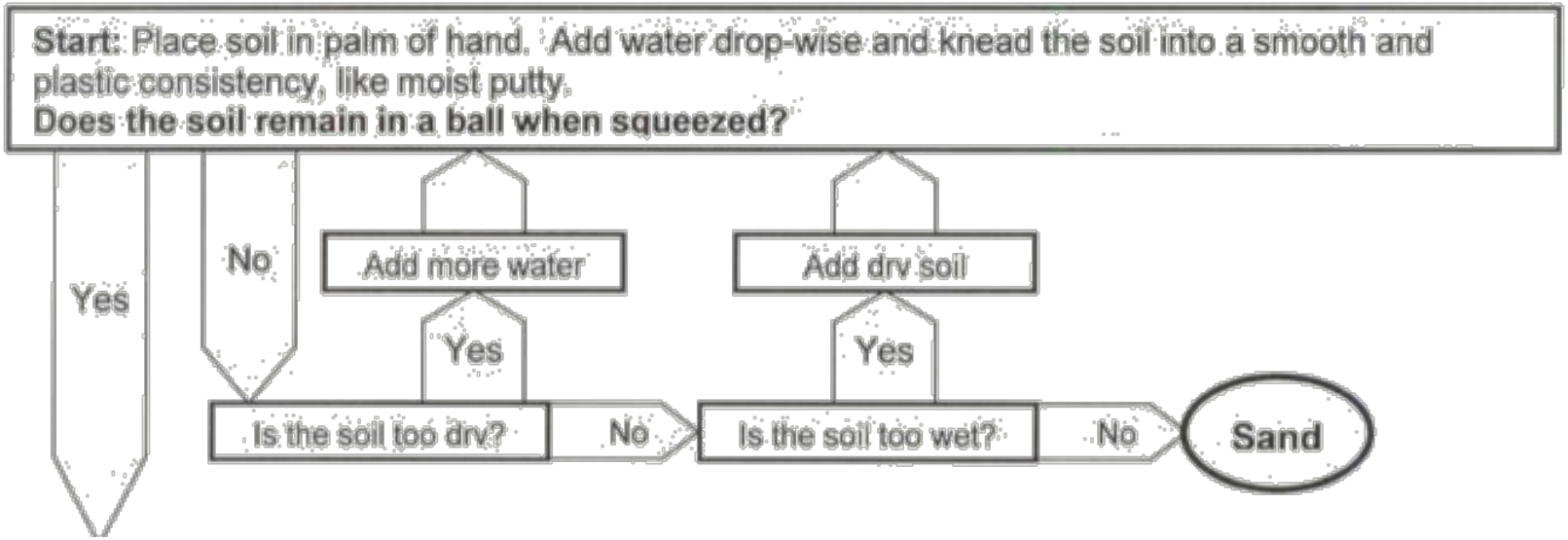
What kind of ribbon does it form?

Moisten a pinch of soil in palm and rub with forefinger	Forms a weak ribbon less than 1" before breaking — LOAM	Forms a ribbon 1-2" before breaking — CLAY LOAM	Forms a ribbon 2" or longer before breaking — CLAY
Does it feel very gritty? Yes	**Sandy Loam**	**Sandy Clay Loam**	**Sandy Clay**
Does it feel equally gritty and smooth? Yes	**Loam**	**Clay Loam**	**Clay**
Does it feel very smooth? Yes	**Silt Loam**	**Silty Clay Loam**	**Silty Clay**

Ribbon or Texture-by-Feel Method



Moist enough to mold like putty when you try to form a ball in your hand.



Soil does not form a cast: Textural class is SAND

Place ball of soil between thumb and forefinger, gently pushing the soil between with the thumb, squeezing it upward into a ribbon. Form a ribbon of uniform thickness and width. Allow ribbon to emerge and extend over the forefinger, breaking from its own weight.

Does the soil form a ribbon?

Yes

No

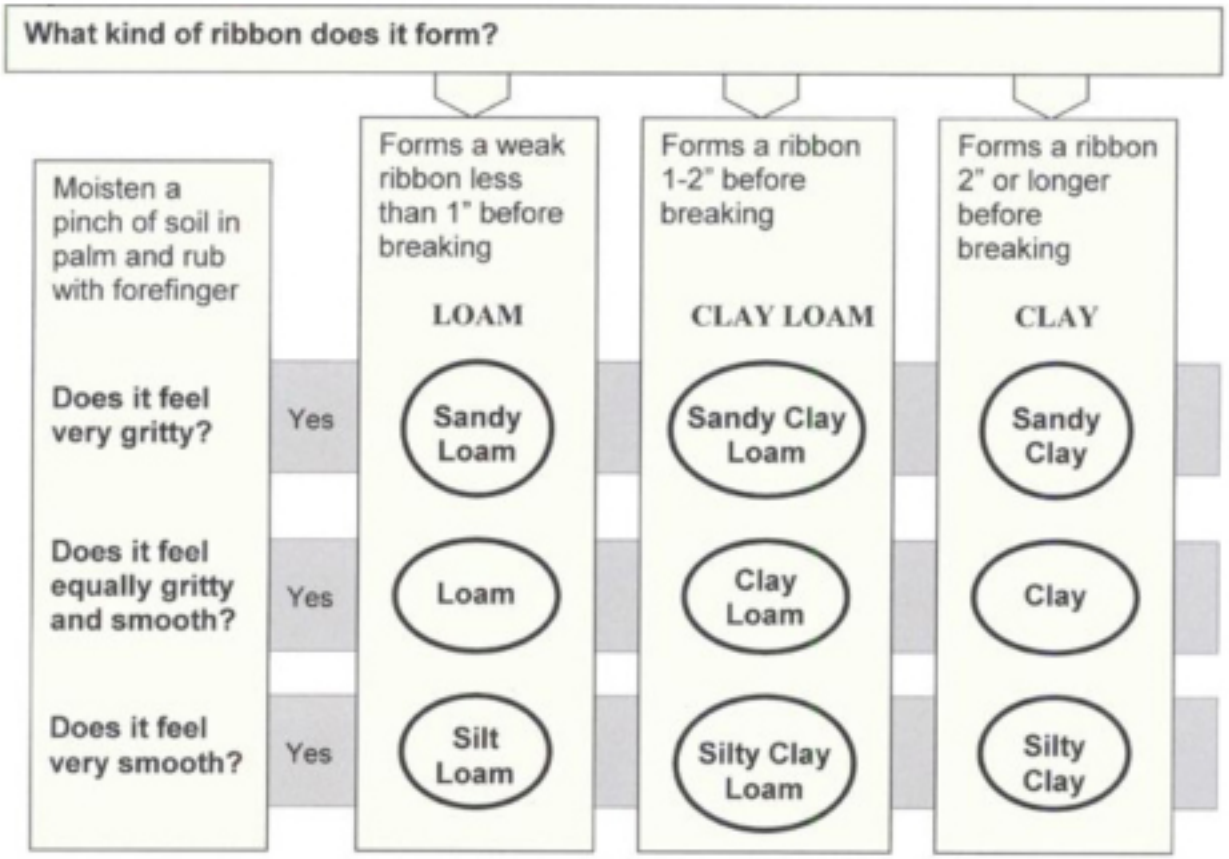
Loamy Sand

Forms a cast of moist soil material.

Textural class is LOAMY SAND

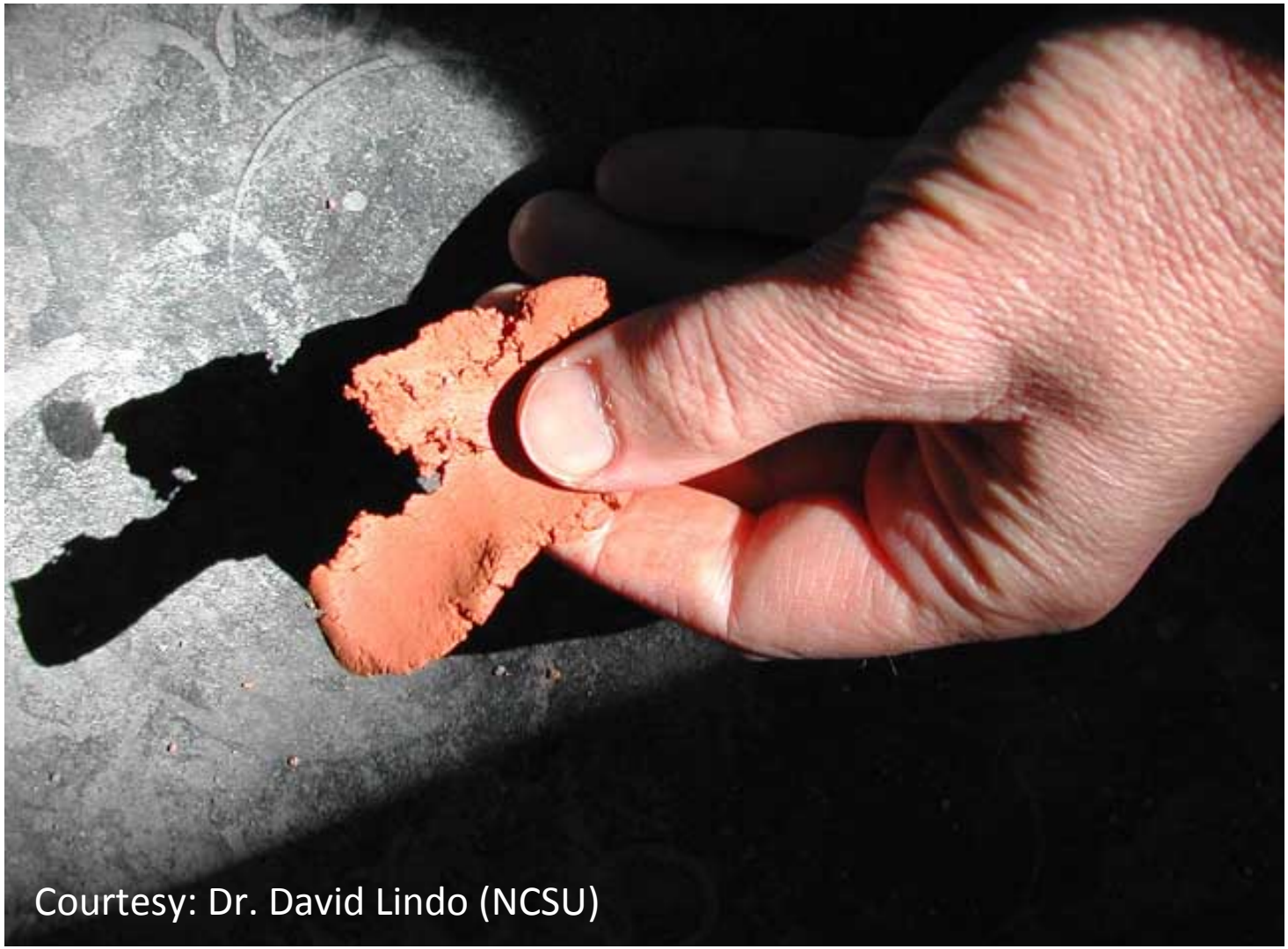
Courtesy: Dr. David Lindo (NCSU)

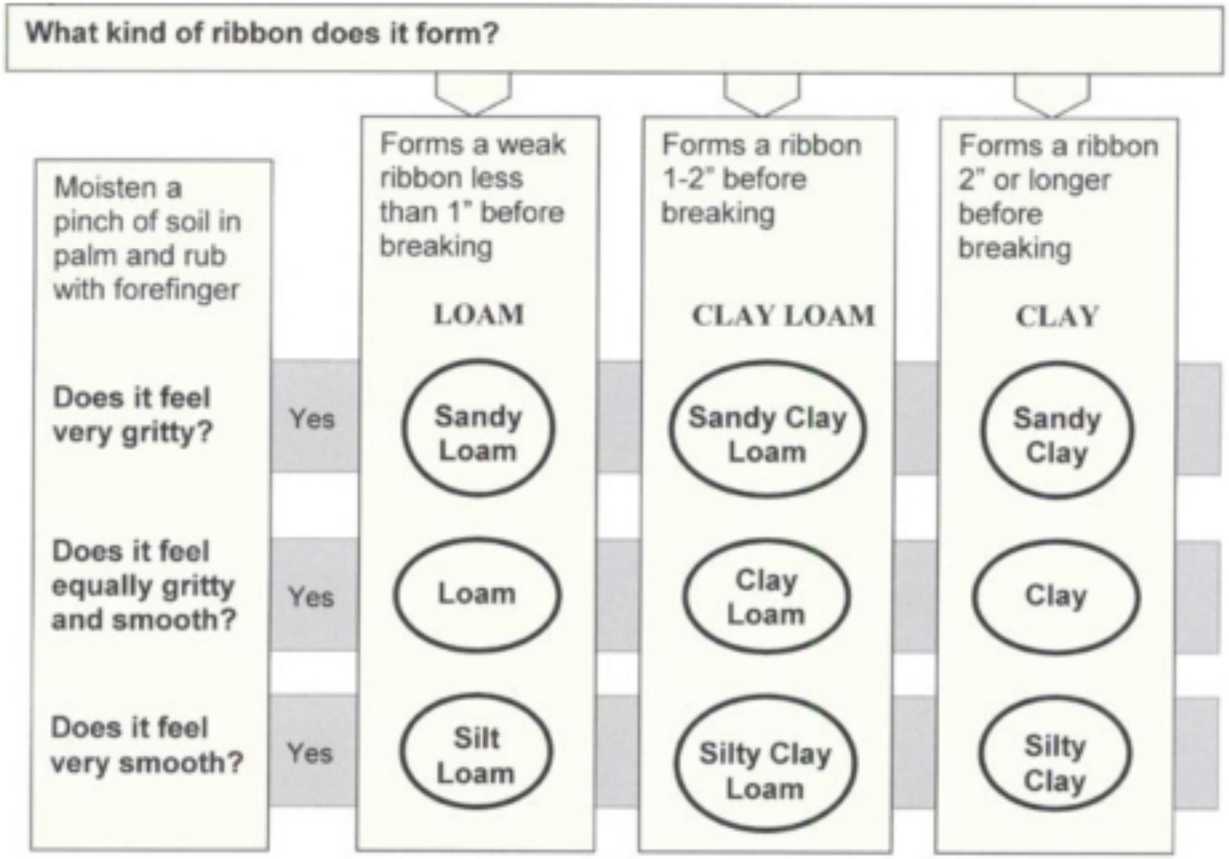
Making a ribbon



The length of the ribbon will depend on clay content and mineralogy.

Making a ribbon





Ribbon longer than 2 in.

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THANK YOU!

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