Texture analysis

Destruction of humus, if: >2%Corg

Destruction of Carbonates, if >2% calcium carbonate

- Weigh out **2-3g** air-dried soil (<2mm) into centrifuge tubes. (Note weight of empty tubes)

- Destruction of humus with H_2O_2 (under fume hood only!)
  - Add **5mL** of water (aqua dest.), then **5mL** of **H_2O_2** (30%)

    Attention! Sample can produce foam! If so, dilute with water.
  - Whenever reaction is diminished, boil the solution in the water bath at 90°C. From time to time shake tubes carefully, maybe rinse edge with water (aqua dest.).
  - In case of no foam in the tube anymore, add **H_2O_2** every 30min.

    After 3-5h the reaction is completed.

    Attention! If there is too much foam, take tube out of the water basin and dilute with water.

- Destruction of carbonates (under fume hood only!)
  - **If** there is calcium carbonate, add drops of diluted **HCl**, until there is no reaction visible anymore.

  Test with pH-Paper if calcium carbonate was removed completely (pH <7)

- Allow the samples to cool down to room temperature

- Centrifuge the samples **15min at 4000U/min**. Use a water jet pump to suck off the water.

  Attention! Don't suck off any soil particles.

  Let sample dry overnight in the drying oven at 70°.

- Weigh back the sample. Note correct weight!

- Add **10mL** of **Na-hexa-meta-phosphat $(NaPO_3)_6$** solution.

  Preparation of solution: Solute 5g $(NaPO_3)_6$ in 100 ml of water.

- Shake overnight in the overhead shaker

- Sieve the sample by wet sieving with Na-hexa-meta-phosphat solution. Collect Clay and Silt fractions in 50mL PE-bottles. Weigh the sand after drying it in glas bottles.

Texture measurement at the Master Sizer

- Take off the protective caps (behind the lid), close lid, turn on machine and laser. Let it warm up for 1/2 h.
- Load congif.ini from Roland (in the User directory). Make new sample file or load your old one. New measurements (single records) will be saved in this file.
- Before each measurement: rinse the dispersing unit 3x with 100mL water (aqua dest.) at app. 3000 U/min
- Take care that there are no air bubbles anymore, by changing the velocity a couple of times
- Start the sequence with “Go”: Enter name off sample, let calibrate, make background measure...
- When inspect sample appears: give drops of sample in the dispersing unit until the measuring bar is green. Attention: Shake bottle well! Pipette quickly! (if not, there is already sedimentation)
- Start the measurement with Space bar