



Physical soil properties – Excercise P03

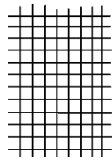
SOIL STRUCTURE - AGGREGATE STABILITY: SLAKE TEST¹

Reference posters n.4 – 6- 7a -10a – 10b

RELEVANCE

Soil stability is a key property that is related to soil chemical, physical and biological dynamics. The slake test is a simple method to evaluate soil structure in the field. It is based on the observation that clumps of soils with poor structure fall apart when placed into water. If soil structure is stable, water can move into the soil pores and displace the air without causing the aggregate to break. It is advisable to compare different soils for a more reliable evaluation.

MATERIALS*



Wire Mesh



Trowel



Beaker



Stopwatch

*Water is needed

PROCEDURE

1) Place the wired mesh into the beaker filled with water



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2) Collect a clump of soil with the trowel




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3) Place the soil aggregate sample onto the mesh so that the whole sample is submerged



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PROCEDURE	4) Use the stopwatch to time how quickly the sample breaks down	 <p>© S. Piroli</p>
ADVANTAGES OF THE METHOD	Soils with different texture and/or different management can be compared. Quick to estimate.	
LIMITATIONS OF THE METHOD	For a more accurate assessment, soil should be air dried before the test	
QUESTIONS TO BE ADDRESSED	How long does it take for you soil to fall apart in the water? After 5 minutes, what percent of the soil clod remains? Did you compare different soil types? What conclusion can you draw? What can be the cause of faster dissolution?	

EVALUATION EXAMPLES		
POOR	MODERATE	GOOD
The clump of soil disintegrate and fall apart in less than 2 minutes.	The clump of soil disintegrate and fall apart in 2-10 minutes / a small portion of the clump remains intact	The clump of soil disintegrate and fall apart in > 10 minutes / a large portion of the clump remains intact

¹ https://www.nrcs.usda.gov/wps/PA_NRCSCConsumption/download?cid=nrcseprd1762487&ext=pdf
<https://quviracoalition.org/product/soil-health-workbook/>