Aggregate and humus stability test

- Take soil from the top soil layer (0 - 30 cm)
- Crush the soil into coarse particles and pour into a test tube (approx. 1/3 fill height)
- Fill with distilled water until approx. 1 cm below the edge of the tube
- TIP the test tube upside down for about 5 minutes (do NOT shake!!!)
- Put the test tube down and allow to settle
- At the earliest after 9 hours of resting, assess the turbidity and colour and write it down

Turbidity assessment
(without considering the texture properties)

Turbidity	Assessment	Causes	Capping, lack of air, erosion
1	Stable aggregates	Ca-bridges, biologically stabilised soil structure	+++
2	Predominantly stable aggregates	Ca-bridges, biologically stabilised soil structure	++
3	Moderately stable aggregates	Short-term over-fertilisation, acidification, reduced biological activity	+-
4	Unstable aggregates	Monovalent ions (e.g.: K), acidification, reduced biological activity	--
5	No cohesion of the aggregates	Monovalent ions (e.g.: K), strong acidification, reduced biological activity	---

Aggregate and humus stability test

Colour assessment

(without considering the texture properties)

Colour	Assessment	Causes	Microorganisms
1	Only stable fractions of the organic substance	Optimal environmental conditions for biological activity	High bacterial diversity
2	Predominantly stable fractions of organic substance	Predominantly optimal environmental conditions for biological activity	Moderate bacterial diversity
3	Significant visible fractions of soluble organic substance	Temporary sub-optimal environmental conditions for biological activity (e.g.: organic fertiliser)	Activity severely impaired in the short term
4	High fractions of soluble organic substance, decomposition and conversion is disrupted	Sub-optimal conditions (moist/dry, acidic/alkaline, cold/warm, excess/deficit)	Increasing fungi / limited bacteria
5	Very high fractions of soluble organic compounds, decomposition and conversion severely disrupted	Extreme conditions (wet/dry, acidic/alkaline, cold/warm, excess/deficit)	Fungi / specialised bacteria

NOTE: values obtained by using your own measurements and then comparing with the Table enclosed for the test can only be used as reference values! This means that this field method can be used as an indication for development trends, but does not replace laboratory analyses!

Source:
"Boden-Nährstoffe-Analytik" complied by Univ. Lek. DI Hans Unterfrauner 2017
www.bodenoekologie.com

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