









Chemical soil properties – Exercise C02

# ORGANIC MATTER: REACTION WITH HYDROGEN PEROXIDE

*Reference posters n.10a, 10b*

<p>RELEVANCE</p>	<p>Organic matter is the basis of soil structure, food for macro- and micro-organisms, as well as an emerging property that contributes transversally to soil quality and soil health. The qualitative assessment of organic matter through colour observation can be complemented by the hydrogen peroxide test , which reacts with manganese oxides and can confirm the presence of organic matter in the soil.</p>	
<p>MATERIALS</p>	 <p>H<sub>2</sub>O<sub>2</sub></p> <p>Hydrogen peroxide</p>	 <p>Spatula</p>  <p>Palette</p>
<p>PROCEDURE</p>	<p>1) Collect a soil sample using the spatula, clean it from roots and vegetation debris and place it in the “H<sub>2</sub>O<sub>2</sub>”-labelled spot on the drawing palette</p>	 <p>© S. Pioli</p>
	<p>2) Add some drops of 30% hydrogen peroxide and observe the reaction. The stronger is the reaction (bubbles or foam) the higher is the organic matter content</p>	 <p>© S. Pioli</p>
<p>ADVANTAGES OF THE METHOD</p>	<p>This is a semi-quantitative method easy to apply that can be repeated over time and space. Different soils can be compared as well as different portion of the soil profile</p>	

LIMITATION OF THE METHOD	Not all soils react with hydrogen peroxide irrespectively of the organic matter content
QUESTIONS TO BE ADDRESSED	Did my soil react with hydrogen peroxide? How strong was the reaction observed? If no reaction occurred, would it be related to a low organic matter content? Is this reaction in line with the visual assessment of organic matter (Exercise P02)?

EVALUATION EXAMPLES		
POOR	MODERATE	GOOD
No bubbling	Light bubbling	Intense effervescence and/or foam
 <p>© S. Pioli</p>	 <p>© S. Pioli</p>	 <p>© S. Pioli</p>

1 [https://www.ccrp.org/wp-content/uploads/2019/08/SoilToolKitManual\\_SV6.3\\_August2019.pdf](https://www.ccrp.org/wp-content/uploads/2019/08/SoilToolKitManual_SV6.3_August2019.pdf)