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Determination of soil organic matter

土壤有机质的测定

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1.Structure and Drafting Rules of Standardization Documents". Drafting. Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents. This document was proposed by the Ministry of Agriculture and Rural Affairs of the People's Republic of China. This document is under the jurisdiction of the National Technical Committee on Soil Quality Standardization (SAC/TC404). This document was drafted by: Nanjing Institute of Soil Science, Chinese Academy of Sciences; and the Center for Supervision and Protection of Cultivated Land Quality and Farmland Engineering, Ministry of Agriculture and Rural Affairs. Nanjing Forestry University, Nanjing Agricultural University, Jiangsu Provincial Institute of Geological Engineering Survey, Institute of Environmental Protection Research and Monitoring of the Ministry of Agriculture and Rural Affairs, Chinese Academy of Agricultural Sciences Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences; Institute of Agricultural Quality Standards and Testing Technology, Chinese Academy of Agricultural Sciences; Agricultural Research Institute, Chinese Academy of Agricultural Sciences Institute of Environment and Sustainable Development, Sichuan Provincial Farmland Quality and Fertilizer Station, Nanjing University of Information Science and Technology, Huazhong Agricultural University, Guangxi Soil and

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1 Scope

GB/T 47361-2026 is the Chinese national standard covering soil organic matter - the property that governs fertility, structure and water holding, and now also the quantity every soil carbon programme is measured against. First edition, in force since 1 October 2026, with the total carbon, nitrogen and sulfur method GB/T 47297-2026. It was issued on 31 March 2026 and takes effect on 1 October 2026, as a first edition. The document is under the responsibility of the Ministry of Agriculture and Rural Affairs. This page is published from the official record of the 2026 edition; the clause text of a standard this recent is not yet in circulation, and the figures, limits and tables it contains are those of the document itself, delivered in full with the English translation.

This document describes a method for determining soil organic matter using the potassium dichromate oxidation with external heating method. This document applies to the determination of organic matter in all types of soil.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included. For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies. This document.

GB/T 6682 Specifications and test methods for water used in analytical laboratories

HJ613 Determination of Soil Dry Matter and Moisture by Gravimetric Method

3 Terms and Definitions

This document does not contain any terms or definitions that need to be defined.

4. Method Principles Under heating conditions, soil organic carbon was oxidized using an excess of potassium dichromate-sulfuric acid solution, followed by the use of ferrous sulfate solution. The remaining potassium dichromate was titrated. The amount of organic carbon was determined by calculating the amount of potassium dichromate consumed and applying an oxidation correction factor. Finally, the remaining potassium dichromate was titrated. Multiply this value by

1.724 to obtain the soil organic matter content.

5. Soil sample pretreatment In the air-drying room, the soil sample is placed in a sample container, and any mixed animal or plant remains are removed. It is then spread into a thin layer of 2-3 cm and placed... Allow to air dry naturally in a cool, shady place. During the drying process, turn the soil occasionally to further remove any plant or animal debris and other impurities. Take precautions to prevent cross-contamination between samples. For clay soils, when the soil sample is semi-dry, wear disposable nitrile or polyethylene gloves to handle it. Break up large clods of soil to prevent them from hardening after drying. Place the sample on an acrylic glass plate (or a hardwood board or colorless polyethylene sheet), gently tap it with a wooden mallet, and then use a wooden stick or acrylic glass to break it. The rod is crushed again, and all visible plant roots are removed. Small, broken plant fibrous roots can be removed using electrostatic adsorption. The test sample is then... After manual grinding, the material is passed through a 2mm nylon sieve to remove gravel larger than 2mm. Clay clumps larger than 2mm should be repeatedly ground and sieved until... Until all samples pass. Samples should not be discarded during the grinding process. Approximately 25g of soil sample was taken from a 2mm sieve using a quartering method or multi-point sampling. Fine particles were then removed using electrostatic adsorption. The broken plant roots are ground into a fine powder using an agate mortar or porcelain mortar, so that they all pass through a 0.25mm sieve for soil organic matter testing.

6. Reagents and Materials Unless otherwise specified, all reagents used in this document are of analytical grade.