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Soil quality - Determination of abundance and activity of soil microflora using respiration curves (ISO 17155:2012)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 17155:2020 sisaldab Euroopa standardi EN ISO 17155:2020 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 17155:2020 consists of the English text of the European standard EN ISO 17155:2020.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 06.05.2020.	Date of Availability of the European standard is 06.05.2020.
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EUROPEAN STANDARD

EN ISO 17155

NORME EUROPÉENNE

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English Version

Soil quality - Determination of abundance and activity of soil microflora using respiration curves (ISO 17155:2012)

Qualité du sol - Détermination de l'abondance et de l'activité de la microflore du sol à l'aide de courbes de respiration (ISO 17155:2012)

Bodenbeschaffenheit - Bestimmung der Abundanz und Aktivität der Bodenmikroflora mit Hilfe von Atmungskurven (ISO 17155:2012)

This European Standard was approved by CEN on 13 April 2020.

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European foreword

The text of ISO 17155:2012 has been prepared by Technical Committee ISO/TC 190 "Soil quality" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 17155:2020 by Technical Committee CEN/TC 444 "Environmental characterization of solid matrices" the secretariat of which is held by NEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by November 2020, and conflicting national standards shall be withdrawn at the latest by November 2020.

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Endorsement notice

The text of ISO 17155:2012 has been approved by CEN as EN ISO 17155:2020 without any modification.

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1 Scope

This International Standard specifies a test method for determining the activity of active aerobic, heterotrophic microbial biomass in soils. This method is applicable to the monitoring of soil quality and to the evaluation of the ecotoxic potential of soils and soil materials. It is also applicable for soils sampled along contamination gradients in the field and to soils that are contaminated experimentally in the field or in the laboratory.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 10381-6, *Soil quality — Sampling — Part 6: Guidance on the collection, handling and storage of soil under aerobic conditions for the assessment of microbiological processes, biomass and diversity in the laboratory*

ISO 10390, *Soil quality — Determination of pH*

ISO 10694, *Soil quality — Determination of organic and total carbon after dry combustion (elementary analysis)*

ISO 11277, *Soil quality — Determination of particle size distribution in mineral soil material — Method by sieving and sedimentation*

ISO 11465, *Soil quality — Determination of dry matter and water content on a mass basis — Gravimetric method*

ISO 14238, *Soil quality — Biological methods — Determination of nitrogen mineralization and nitrification in soils and the influence of chemicals on these processes*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

basal respiration rate

R_B

constant mass of CO₂ released or mass of O₂ consumed per unit mass of soil per unit time without substrate addition

NOTE See Figure 1 for a typical basal respiration curve.

3.2

substrate-induced respiration rate

R_S

constant mass of CO₂ released or mass of O₂ consumed per unit mass of soil per unit time shortly after addition of a carbon substrate

NOTE 1 See Figure 1 for a typical substrate-induced respiration curve.

NOTE 2 If glucose is used as a carbon substrate, microbial biomass can be determined from the substrate-induced respiration rate (see ISO 14240-1^[1]).