International Standard

ISO 17126

Soil quality — Determination of the effects of pollutants on soil flora — Screening test for emergence of lettuce seedlings (*Lactuca sativa* L.)

Qualité du sol — Détermination des effets des polluants sur la flore du sol — Essai de détection de l'émergence des plantules de laitue (Lactuca sativa L.)

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

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Contents

Page

Foreword ..... **iv**
Introduction ..... **v**
1 Scope **1**
2 Normative references **1**
3 Terms and definitions **1**
4 Principle **2**
5 Materials **2**
6 Apparatus **2**
7 Procedure **3**
7.1 Testing of test material 3
7.1.1 Samples of soil and other test materials 3
7.1.2 Testing of chemical substances 3
7.2 Temperature and light regime 4
7.3 Water content 4
7.4 Reference chemical substance 4
7.5 Preparation of test dishes and start of test 4
7.5.1 Preliminary test 4
7.5.2 Final test 4
7.6 Test duration 5
7.7 Measurements 5
7.8 Recordings 5
8 Expression of results **5**
9 Validity of the test **6**
10 Test report **6**
Bibliography **7**

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 190, *Soil quality*, Subcommittee SC 4, *Biological characterization*.

This second edition cancels and replaces the first edition (ISO 17126:2005), which has been technically revised.

The main changes are as follows:

— the category of test material has been rearranged (soil and other test materials, water-soluble chemical substances, and chemical substances insoluble in water) in 7.1;

— the procedure for adding moisturizing water and seeding has been specifically modified in 7.3 and 7.5;

— the consideration of phytotoxicity signs in control vessels has been added in Clause 9.

Any feedback or questions on this document should be directed to the user’s national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Introduction

For the assessment of the suitability of soil to sustain living organisms, there is a need for simple, rapid, inexpensive biological test methods as a complement to chemical analysis. The method described in this document has been developed for the testing of contaminated soil as well as other contaminated samples. It is cost-effective and can be conducted within a short period of time. Furthermore, the biological material is easily available, the method does not require advanced equipment for measurements or for growing plants, and it can be conducted by any skilled laboratory technician without special training.

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Soil quality — Determination of the effects of pollutants on soil flora — Screening test for emergence of lettuce seedlings (*Lactuca sativa* L.)

1 Scope

This document specifies test procedures for the determination of effects of contaminated soils or other contaminated samples on the emergence of lettuce seeds.

This document is applicable to contaminated soils, soil materials, compost, sludge and chemical testing. It is also applicable to the measurement of effects of substances deliberately added to the soil and to the comparison of soils of known and unknown quality.

This document is not applicable for volatile contaminants.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 18400-206, *Soil quality — Sampling — Part 206: Collection, handling and storage of soil under aerobic conditions for the assessment of microbiological processes, biomass and diversity in the laboratory*

ISO 10390, *Soil, treated biowaste and sludge – Determination of pH*

ISO 11265, *Soil quality — Determination of the specific electrical conductivity*

ISO 11267:2023, *Soil quality — Inhibition of reproduction of Collembola (Folsomia candida) by soil contaminants*

ISO 11274, *Soil quality — Determination of the water-retention characteristic — Laboratory methods*

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

3 Terms and definitions

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

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
seedling emergence
appearance of the seedling (i.e. visible seedling) above the surface of the cover material

3.2
EC*x*
concentration of test material (or test substance) estimated to reduce the *seedling emergence* (3.1) by *x* % as compared to the control

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