



BSI Standards Publication

Soil quality — Sampling of soil invertebrates

Part 3: Sampling and soil extraction of enchytraeids (ISO 23611-3:2007)

NO COPYING WITHOUT BSI PERMISSION EXCEPT AS PERMITTED BY COPYRIGHT LAW

raising standards worldwide™

Full document details: BS EN ISO 23611-3:2011

National foreword

This British Standard is the UK implementation of EN ISO 23611-3:2011. It is identical to ISO 23611-3:2007.

The UK participation in its preparation was entrusted to Technical Committee EH/4, Soil quality.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

© BSI 2011

ISBN 978 0 580 73164 8

ICS 13.080.05; 13.080.30

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 July 2011.

Amendments issued since publication

Date	Text affected
------	---------------

English Version

Soil quality - Sampling of soil invertebrates - Part 3: Sampling
and soil extraction of enchytraeids (ISO 23611-3:2007)

Qualité du sol - Prélèvement des invertébrés du sol - Partie
3: Prélèvement et extraction des enchytréides (ISO 23611-
3:2007)

Bodenbeschaffenheit - Probenahme von Wirbellosen im
Boden - Teil 3: Probenahme und Bodenextraktion von
Enchytraeen (ISO 23611-3:2007)

This European Standard was approved by CEN on 17 June 2011.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

Foreword

The text of ISO 23611-3:2007 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 23611-3:2011 by Technical Committee CEN/TC 345 “Characterization of soils” 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 January 2012, and conflicting national standards shall be withdrawn at the latest by January 2012.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of ISO 23611-3:2007 has been approved by CEN as a EN ISO 23611-3:2011 without any modification.

Contents

Page

Foreword.....	iv
Introduction	v
1 Scope	1
2 Terms and definitions.....	1
3 Principle	1
4 Reagents	2
5 Apparatus	2
6 Procedure	3
6.1 Soil sampling.....	3
6.2 Extraction of the enchytraeids	3
6.3 Microscopic identification	4
6.4 Preservation of Enchytraeidae	4
6.5 Validity of the extraction process	4
6.6 Determination of biomass.....	5
7 Data assessment.....	5
8 Test report	5
Annex A (informative) Species identification in enchytraeids.....	7
Annex B (informative) Quick extraction of enchytraeids	8
Bibliography	10

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 23611-3 was prepared by Technical Committee ISO/TC 190, *Soil quality*, Subcommittee SC 4, *Biological methods*.

ISO 23611 consists of the following parts, under the general title *Soil quality — Sampling of soil invertebrates*:

- *Part 1: Hand-sorting and formalin extraction of earthworms*
- *Part 2: Sampling and extraction of micro-arthropods (Collembola and Acarina)*
- *Part 3: Sampling and soil extraction of enchytraeids*
- *Part 4: Sampling, extraction and identification of soil-inhabiting nematodes*

Introduction

This part of ISO 23611 has been drawn up since there is a growing need for the standardization of terrestrial zoological field methods. Such methods, mainly covering the sampling, extraction and handling of soil invertebrates, are needed for the following purposes:

- biological classification of soils including soil quality assessment (e.g. References [21], [25], [27]);
- terrestrial bioindication and long-term monitoring (e.g. References [13], [26]);
- evaluation of the effects of chemicals on soil animals (References [15], [22]).

Data for these purposes are gained by standardized methods since they can form the basis for far-reaching decisions (e.g. whether a given site should be remediated or not). In fact, the lack of such standardized methods is one of the most important reasons why biological classification concepts in terrestrial (i.e. soil) habitats have so far been relatively rarely used in comparison to aquatic sites.

Originally, the methods described here were developed for taxonomical and ecological studies, investigating the role of enchytraeids in various soil ecosystems. These animals without doubt belong to the most important soil invertebrates in temperate regions (mainly in acidic soils^[5]). Their influence on soil functions like litter decomposition and nutrient cycling is well-known^{[14], [19]}. Due to their number which is often very high (and to their population biomass), they are also important in many terrestrial food-webs^[4]. Some species have unintentionally been distributed by man in many soils of the world.

Since it is neither possible nor useful to standardize methods for all soil organisms, the most important ones have been selected. [Microbiological parameters are already covered by existing ISO guidelines (e.g. ISO 10381-6^[29], ISO 14240-1^[37] and ISO 14240-2^[38])].

