

**Water quality - Guidance standard for the
sampling of zooplankton from standing
waters**

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of zooplankton from standing waters

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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| <p>Käesolev Eesti standard EVS-EN 15110:2006 sisaldab Euroopa standardi EN 15110:2006 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 29.06.2006 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p> | <p>This Estonian standard EVS-EN 15110:2006 consists of the English text of the European standard EN 15110:2006.</p> <p>This document is endorsed on 29.06.2006 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p> |
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| <p>Käsitlusala:</p> <p>This guidance standard describes general procedures for surveying zooplankton in standing waters for the purposes of water quality assessment and determination of ecological status.</p> | <p>Scope:</p> <p>This guidance standard describes general procedures for surveying zooplankton in standing waters for the purposes of water quality assessment and determination of ecological status.</p> |
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ICS 13.060.45

Võtmesõnad:

ICS 13.060.45

English Version

Water quality - Guidance standard for the sampling of zooplankton from standing waters

Qualité de l'eau - Guide pour l'échantillonnage du
zooplancton dans les eaux stagnantes

Wasserbeschaffenheit - Anleitung zur Probenahme von
Zooplankton aus stehenden Gewässern

This European Standard was approved by CEN on 13 April 2006.

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Foreword

This document (EN 15110:2006) has been prepared by Technical Committee CEN/TC 230 "Water analysis", the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by November 2006, and conflicting national standards shall be withdrawn at the latest by November 2006.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, 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.

Introduction

Zooplankton community structure provides information on a range of physico-chemical and biotic causative variables. These include pH- and acidification-related variables, toxic chemicals, phytoplankton structure and abundance (i.e. lake productivity), and intensity of fish predation. The effects of size-selective predation are well known and the size-structure of zooplankton communities can give valuable information of the fish community.

Metazoan zooplankton (metazooplankton) constitute a large number of species within a range of total lengths of about 0,05 mm to 20 mm, but mostly < 2 mm. The main groups are the rotifers (Rotatoria), the cladocerans (Cladocera) and the copepods (Copepoda). Some shrimps (Natantia; e.g. Mysidae) and larvae of dipterans (Diptera, e.g. *Chaoborus*) may also be considered as part of the zooplankton fauna. Rotifers and crustaceans inhabiting the littoral of standing waters can also be grouped with the more strictly planktonic forms. Fish larvae, hemipterans (Heteroptera, e.g. Corixidae) and coleopterans (Coleoptera) are occasionally recorded in the plankton samples but are not considered as part of the zooplankton fauna. Procedures for sampling of protozooplankton (Protozoa) are not included in this standard.

Surveys of zooplankton have provided valuable information for the environmental monitoring of standing waters, because this group includes species which:

- a) occur in a wide range of standing waters over a large geographical area and at the same time have specific environmental requirements;
- b) are well known with regard to their geographical distribution and environmental requirements;
- c) have a generally high capacity for dispersal enabling them to respond rapidly to remedial actions; while
- d) sampling requires only a modest expenditure of time and equipment.

WARNING — Working in or around water is inherently dangerous. This standard does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user to establish appropriate health and safety practices and to ensure compliance with any national regulatory conditions.

NOTE According to the classification by Fryer [5] the assemblage long known as the Cladocera is split into four orders; Ctenopoda, Anomopoda, Onychopoda and Haplopoda. Cladocera is however used in this standard as a general descriptive term.

1 Scope

This guidance standard describes general procedures for surveying zooplankton in standing waters for the purposes of water quality assessment and determination of ecological status.

Guidance on sampling procedures and the subsequent steps for preservation and storage are given. The sampling procedures provide estimate for species occurrence and their abundance (relative or absolute), including spatial distribution and temporal trends, for a given body of water. Calculation of biomass and production is made possible.

This method is restricted to the sampling of multicellular zooplankton that inhabit the pelagic and littoral regions of lakes, reservoirs and ponds. The sampling procedure may be also employed in slow running waters and canals.

NOTE The field methods described are suitable for the collection of open-water plankton and littoral plankton species. They are inappropriate for the collection of littoral species that primarily live on or in the surface of sediments and on the surface of aquatic plants.

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.

prEN 14996, *Water quality — Guidance on assuring the quality of biological and ecological assessments in the aquatic environment*.

EN 25667-1, *Water quality — Sampling — Part 1: Guidance on the design of sampling programmes (ISO 5667-1:1980)*.

EN ISO 5667-3, *Water quality - Sampling - Part 3: Guidance on the preservation and handling of water samples (ISO 5667-3:2003)*

3 Terms and definitions

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

3.1

anoxic

condition in which the concentration of dissolved oxygen is so low that certain groups of micro-organisms prefer oxidized forms of nitrogen, sulphur, or carbon as an electron acceptor

NOTE As the oxygen concentration approach zero the concentration of hydrogensulfide (H_2S), released by bacterial anaerobic (no oxygen present) activity, is increasing. The anoxic conditions markedly affect the cycling of other nutrients, ecosystem productivity, and the distribution of biota.

3.2

body of surface water

discrete and significant element of surface water such as a lake, reservoir, stream, river or canal, part of a stream, river or canal, a transitional water or a stretch of coastal water [EC Directive 2000/60/EC]

3.3

dimictic lake

lake with spring and autumn turnovers (temperate lake)