

**Toiduained. Deoksünivalenooli sisalduse määramine teraviljades, teraviljatoodetes ja teraviljapõhistes imiku- ja väikelastetoitudes vedelikkromatograafilisel meetodil UV detektoriga ja eelneva puhastamisega immunoaffiinsus kolonnis**

Foodstuffs - Determination of deoxynivalenol in cereals, cereal products and cereal based foods for infants and young children - HPLC method with immunoaffinity column cleanup and UV detection

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 15891:2010 sisaldab Euroopa standardi EN 15891:2010 ingliskeelset teksti.

Standard on kinnitatud Eesti Standardikeskuse 31.10.2010 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 29.09.2010.

Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-EN 15891:2010 consists of the English text of the European standard EN 15891:2010.

This standard is ratified with the order of Estonian Centre for Standardisation dated 31.10.2010 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.

Date of Availability of the European standard text 29.09.2010.

The standard is available from Estonian standardisation organisation.

ICS 67.060, 67.230

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ICS 67.060; 67.230

English Version

Foodstuffs - Determination of deoxynivalenol in cereals, cereal products and cereal based foods for infants and young children - HPLC method with immunoaffinity column cleanup and UV detection

Denrées alimentaires - Dosage du déoxynivalénol dans les céréales, les produits céréaliers, et céréales pour déjeuner en alimentation infantile - Méthode par CLHP avec purification sur colonne d'immunoaffinité et détection UV

Lebensmittel - Bestimmung von Deoxynivalenol in Getreide, Getreideerzeugnissen und Säuglings- und Kleinkindernahrung auf Getreidebasis - HPLC-Verfahren mit Reinigung an einer Immunoaffinitätssäule und UV-Detektion

This European Standard was approved by CEN on 28 August 2010.

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## Foreword

This document (EN 15891:2010) has been prepared by Technical Committee CEN/TC 275 "Food analysis - Horizontal methods", 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 **March 2011**, and conflicting national standards shall be withdrawn at the latest by **March 2011**.

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.

Annexes A and B are informative.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

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## 1 Scope

This European Standard specifies a method for the determination of deoxynivalenol (DON) in cereals (grain and flour), cereal based foods and cereal based foods for infants and young children by high performance liquid chromatography (HPLC) with immunoaffinity cleanup and UV detection. This method has been validated in three interlaboratory studies. The first study was for the analysis of samples of wheat, rice flour, oat flour, maize, polenta, and wheat based breakfast cereal ranging from 85,4 µg/kg to 1 768 µg/kg, the second study was for wheat and maize ranging from 165 µg/kg to 4 700 µg/kg and the third study was for cereal based foods for infants and young children ranging from 58 µg/kg to 452 µg/kg.

For further information on the validation, see Clause 9 and Annex B.

**WARNING** — The use of this standard can involve hazardous materials, operations and equipment. This standard does not purport to address all the safety problems associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

## 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.

EN ISO 3696:1995, *Water for analytical laboratory use — Specification and test methods (ISO 3696:1987)*

## 3 Principle

Deoxynivalenol is extracted from the sample using water. The aqueous extract is cleaned up on an immunoaffinity column to remove impurities from the sample. Deoxynivalenol is then quantitatively determined by HPLC and UV detection.

## 4 Reagents

### 4.1 General

Use only reagents of recognized analytical grade and water complying with grade 1 of EN ISO 3696:1995, unless otherwise specified. Solvents shall be of quality for HPLC analysis. Commercially available solutions with equivalent properties to the reagents listed may be used.

**4.2 Disodium hydrogen phosphate**, anhydrous or  $\text{Na}_2\text{HPO}_4 \cdot 12 \text{H}_2\text{O}$ .

**4.3 Potassium chloride**, KCl.

**4.4 Potassium dihydrogen phosphate**,  $\text{KH}_2\text{PO}_4$ .

**4.5 Sodium chloride**, NaCl.

**4.6 Sodium hydroxide**, NaOH.

**4.7 Hydrochloric acid solution**, mass fraction  $w(\text{HCl}) = 37 \%$  in water.