

Foodstuffs - Determination of aflatoxin B1, and the total content of aflatoxins B1, B2, G1 and G2 in cereals, nuts and derived products - High-performance liquid chromatographic method (ISO 16050:2003)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 16050:2011 sisaldab Euroopa standardi EN ISO 16050:2011 ingliskeelset teksti.</p> <p>Standard on kinnitatud Eesti Standardikeskuse 29.07.2011 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 13.07.2011.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN ISO 16050:2011 consists of the English text of the European standard EN ISO 16050:2011.</p> <p>This standard is ratified with the order of Estonian Centre for Standardisation dated 29.07.2011 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.</p> <p>Date of Availability of the European standard text 13.07.2011.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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ICS 67.060, 67.080.10

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English Version

Foodstuffs - Determination of aflatoxin B1, and the total content
of aflatoxins B1, B2, G1 and G2 in cereals, nuts and derived
products - High-performance liquid chromatographic method
(ISO 16050:2003)

Produits alimentaires - Dosage de l'aflatoxine B1 et
détermination de la teneur totale en aflatoxines B1, B2, G1
et G2 dans les céréales, les fruits à coque et les produits
dérivés - Méthode par chromatographie liquide à haute
performance (ISO 16050:2003)

Lebensmittel - Bestimmung von Aflatoxin B1 und der
Summe von Aflatoxin B1, B2, G1 und G2 in Getreiden,
Nüssen und verwandten Produkten -
Hochleistungsflüssigchromatographisches Verfahren (ISO
16050:2003)

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

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

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Foreword

The text of ISO 16050:2003 has been prepared by Technical Committee ISO/TC 34 "Food products" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 16050:2011 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 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.

This document supersedes EN 12955:1999.

Originally, EN 12955:1999 "Foodstuffs - Determination of aflatoxin B₁, and the sum of aflatoxins B₁, B₂, G₁ and G₂ in cereals, shell-fruits and derived products - High performance liquid chromatographic method with post column derivatization and immunoaffinity column clean up" was the basis for ISO 16050. In order to avoid having two equal standards on CEN- and ISO-level on the same topic, it was decided to take over ISO 16050 as EN ISO 16050 and to withdraw EN 12955 as soon as EN ISO 16050 is published.

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 16050:2003 has been approved by CEN as a EN ISO 16050:2011 without any modification.

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WARNING — The use of this standard involves hazardous materials and operations. 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 practice and to determine the applicability of regulatory limitations prior to use.

1 Scope

This International Standard specifies a reverse-phase high-performance liquid chromatographic method, with immunoaffinity column clean-up and post-column derivatization, for the determination of aflatoxins in cereals, nuts and derived products. The limit of quantification for aflatoxin B₁, and for the sum of aflatoxins B₁, B₂, G₁ and G₂, is 8 µg/kg.

The method has been validated for maize containing 24,5 µg/kg, for peanut butter containing 8,4 µg/kg, and for raw peanuts containing 16 µg/kg of total aflatoxins. It has also been shown that this method can be used for oilseed products, dried fruits and derived products.

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 3696:1987, *Water for analytical laboratory use — Specification and test methods*

3 Principle

The test sample is extracted with a mixture of methanol and water. The sample extract is filtered, diluted with water, and applied to an affinity column containing antibodies specific for aflatoxins B₁, B₂, G₁ and G₂. The aflatoxins are isolated, purified and concentrated on the column then removed from the antibodies with methanol. The aflatoxins are quantified by reverse-phase high-performance liquid chromatography (HPLC) with fluorescence detection and post-column derivatization.

4 Reagents

Use only reagents recognized analytical grade, unless otherwise stated.

4.1 Water, according to grade 1 of ISO 3696:1987.

4.2 Sodium chloride.