

**Foodstuffs - Methods of analysis for the
detection of genetically modified
organisms and derived products -
General requirements and definitions**

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genetically modified organisms and derived products
- General requirements and definitions

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 24276:2006 sisaldab Euroopa standardi EN ISO 24276:2006 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 30.03.2006 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN ISO 24276:2006 consists of the English text of the European standard EN ISO 24276:2006.</p> <p>This document is endorsed on 30.03.2006 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: This International Standard specifies how to use the standards for sampling strategies (EN/TS 21568), nucleic acid extraction (ISO 21571), qualitative nucleic acid analysis (ISO 21569), quantitative nucleic acid analysis (ISO 21570) and protein-based methods (ISO 21572), and explains their relationship in the analysis of genetically modified organisms in foodstuffs.</p>	<p>Scope: This International Standard specifies how to use the standards for sampling strategies (EN/TS 21568), nucleic acid extraction (ISO 21571), qualitative nucleic acid analysis (ISO 21569), quantitative nucleic acid analysis (ISO 21570) and protein-based methods (ISO 21572), and explains their relationship in the analysis of genetically modified organisms in foodstuffs.</p>
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Võtmesõnad:

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English Version

Foodstuffs - Methods of analysis for the detection of genetically modified organisms and derived products - General requirements and definitions (ISO 24276:2006)

Produits alimentaires - Méthodes d'analyse pour la détection des organismes génétiquement modifiés et des produits dérivés - Exigences générales et définitions (ISO 24276:2006)

Lebensmittel - Verfahren zum Nachweis von gentechnisch modifizierten Organismen und ihren Produkten - Allgemeine Anforderungen und Definitionen (ISO 24276:2006)

This European Standard was approved by CEN on 23 January 2006.

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Foreword

This document (EN ISO 24276:2006) has been prepared by Technical Committee CEN/TC 275 "Food analysis - Horizontal methods", the secretariat of which is held by DIN, in collaboration with Technical Committee ISO/TC 34 "Agricultural food products".

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 August 2006, and conflicting national standards shall be withdrawn at the latest by August 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.

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*Produits alimentaires — Méthodes d'analyse pour la détection des
organismes génétiquement modifiés et des produits dérivés —
Exigences générales et définitions*



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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.

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 24276 was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 275, *Food analysis — Horizontal methods*, in collaboration with Technical Committee ISO/TC 34, *Food products*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

Introduction

The purpose of such an analysis is to identify and quantify genetic elements or proteins common to genetically modified organisms (GMOs) and their derived products in a given matrix.

The main focus of this International Standard is polymerase chain reaction (PCR) based methodologies. However, because of the rapid rate of technological change in this area, other technologies may be considered in the future.

The search for ingredients of genetically modified origin is performed by means of the following successive (or simultaneous) steps. After sample collection, nucleic acids or proteins are extracted from the test portion. Extracted analytes can be further purified, simultaneously or after the extraction process. Afterwards, they are quantified (if necessary), diluted (if necessary) and subjected to analytical procedures, such as PCR or Enzyme-Linked Immunosorbent Assay (ELISA). These steps are detailed in this International Standard and in the following documents:

EN/TS 21568, *Foodstuffs — Methods of analysis for the detection of genetically modified organisms and derived products — Sampling strategies*

ISO 21569, *Foodstuffs — Methods of analysis for the detection of genetically modified organisms and derived products — Qualitative nucleic acid based methods*

ISO 21570, *Foodstuffs — Methods of analysis for the detection of genetically modified organisms and derived products — Quantitative nucleic acid based methods*

ISO 21571, *Foodstuffs — Methods of analysis for the detection of genetically modified organisms and derived products — Nucleic acid extraction*

ISO 21572, *Foodstuffs — Methods for the detection of genetically modified organisms and derived products — Protein based methods*

Specific information pertaining to protein detection methods is found in ISO 21572.

Foodstuffs — Methods of analysis for the detection of genetically modified organisms and derived products — General requirements and definitions

1 Scope

This International Standard specifies how to use the standards for sampling strategies (EN/TS 21568), nucleic acid extraction (ISO 21571), qualitative nucleic acid analysis (ISO 21569), quantitative nucleic acid analysis (ISO 21570) and protein-based methods (ISO 21572), and explains their relationship in the analysis of genetically modified organisms in foodstuffs.

It contains general definitions, requirements and guidelines for laboratory set-up, method validation requirements, description of methods and test reports.

It has been established for food matrices, but could also be applied to other matrices (e.g. seeds, feed and plant samples from the environment).

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 5725-1, *Accuracy (trueness and precision) of measurement methods and results — Part 1: General principles and definitions*

3 Terms and definitions

For the purpose of this document, the terms and definitions given in ISO 5725-1 concerning validation, those in Reference [1] and the following apply.

3.1 General definitions

3.1.1

target taxon

taxon to which the genetically modified organism belongs

NOTE In this context, taxon usually means species but it could be of lower or higher taxonomic rank.

3.1.2

laboratory sample

sample as prepared for sending to the laboratory and intended for inspection or testing

[ISO 7002:1986]