SLOVENSKI STANDARD
SIST EN ISO 9167-1:1998

01-november-1998

Seme oljne repice - Določevanje glukozinolatov - 1. del: Metoda s tekočinsko kromatografijo visoke ločljivosti (ISO 9167-1:1992)

Rapeseed - Determination of glucosinolates content - Part 1: Method using high-performance liquid chromatography (ISO 9167-1:1992)

Rapssamen - Bestimmung des Glucosinolatgehaltes - Teil 1: HPLC-Verfahren (ISO 9167 -1:1992)

Graines de colza - Dosage des glucosinolates - Partie 1: Méthode par chromatographie liquide a haute performance (ISO 9167-1:1992)

Ta slovenski standard je istoveten z: **EN ISO 9167-1:1995**

ICS:

67.200.20 Oljnice Oilseeds

SIST EN ISO 9167-1:1998 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 9167-1

August 1995

ICS 67.200.20

Descriptors: agricultural products, plant products, oilseeds, rapeseeds, chemical analysis, determination of content, glucosinolate, high performance liquid chromatography

English version

Rapeseed - Determination of glucosinolates content - Part 1: Method using high-performance liquid chromatography (ISO 9167-1:1992)

Graines de colza - Dosage des glusinolates - Partie 1: Méthode par chromatographie liquide à haute performance (ISO 9167-1:1992)

Rapssamen - Bestimmung des Glucosinolatgehaltes - Teil 1: HPLC-Verfahren (ISO 9167-1:1992)

This European Standard was approved by CEN on 1995-05-24. 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 Central Secretariat or to any CEN member.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart,36 B-1050 Brussels

Foreword

The text of the International Standard from ISO/TC 34 "Agricultural food proucts" of the International Organization for Standardization (ISO) has been taken over as a European Standard by the Technical Committee CEN/TC 307 "Oilseeds, vegatable and animal fats and oils and their by-products - Methods of sampling and analysis".

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 February 1996, and conflicting national standards shall be withdrawn at the latest by February 1996.

According to CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of the International Standard ISO 9167-1:1992 has been approved by CEN as a European Standard without any modification.

NOTE: Normative references to International publications are listed in annex ZA (normative).

Annex ZA (normative)
Normative references to international publications with their relevant European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

Publication	Year	Title	EN	Year
ISO 664	1990	Oilseeds - Reduction of laboratory sample to test sample	EN ISO 664	1995
ISO 665	1977	Oilseeds - Determination of moisture and volatile matter content	EN ISO 665	1995
ISO 3696	1987	Water for analytical use - Specification and test methods	EN ISO 3696	1995

INTERNATIONAL STANDARD

ISO 9167-1

First edition
1992-07-01

Rapeseed — Determination of glucosinolates content —

Part 1: Method using high-performance liquid chromatography

Graines de colza — Dosage des glucosinolates —
Partie 1: Méthode par chromatographie liquide à haute performance

Reference number
ISO 9167-1:1992(E)

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.

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.

International Standard ISO 9167-1 was prepared by Technical Committee ISO/TC 34, *Agricultural food products*, Sub-Committee SC 2, *Oleaginous seeds and fruits*.

ISO 9167 consists of the following parts, under the general title *Rapeseed — Determination of glucosinolates content*:

— *Part 1: Method using high-performance liquid chromatography*

— *Part 2: Method using X-ray fluorescence spectrometry*

Annex A of this part of ISO 9167 is for information only.

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Printed in Switzerland

Rapeseed — Determination of glucosinolates content —

Part 1:
Method using high-performance liquid chromatography

1 Scope

This part of ISO 9167 specifies a method for the determination of the content of the different glucosinolates in rapeseeds (colza) using high-performance liquid chromatography.

NOTES

1 This method does not determine glucosinolates which are substituted on the glucose molecule, but these compounds are of little importance in commercial rapeseed.

2 A rapid method for the determination of glucosinolates content using X-ray fluorescence spectrometry is the subject of ISO 9167-2.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 9167. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 9167 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 664:1990, *Oilseeds — Reduction of laboratory sample to test sample.*

ISO 665:1977, *Oilseeds — Determination of moisture and volatile matter content.*

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

3 Principle

Extraction of glucosinolates by methanol, then purification and enzymatic desulfatation on ion-exchange resins. Determination using reversed-phase high-performance liquid chromatography (HPLC) with elution gradient and ultraviolet detection.

4 Reagents

Use only reagents of recognized analytical grade, unless otherwise specified, and water complying with grade 2 of ISO 3696.

4.1 Methanol, HPLC grade, 70 % (V/V) solution.

4.2 Sodium acetate, 0,02 mol/l at pH 4,0.

4.3 Sodium acetate, 0,2 mol/l solution.

4.4 Imidazole formate, 6 mol/l solution.

Dissolve 204 g of imidazole in 113 ml of formic acid in a 500 ml one-mark volumetric flask. Make up to the mark with water.

4.5 Internal standard, use either **sinigrin monohydrate** (potassium allylglucosinolate monohydrate, $M_r = 415{,}49$) (see 4.5.1) or, for rapeseed (cultivated or self-propagated) in which sinigrin is present naturally, **glucotropaeolin** (benzylglucosinolate, potassium salt, $M_r = 447{,}52$) (see 4.5.2).

For rapeseed with a low glucosinolate content (< 20 µm/g), reduce the internal standard concentration (1 mmol/l to 3 mmol/l) in 4.5.1 and 4.5.2.1 .