Rapsiseemned. Glükosinolaatide sisalduse määramine. Osa 1: Kõrgefektiivset vedelikkromatograafiat kasutav meetod

Rapeseed - Determination of glucosinolates content - Part 1: Method using high-performance liquid chromatography



EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN ISO 9167-	This Estonian standard EVS-EN ISO 9167-
1:2000 sisaldab Euroopa standardi EN ISO	1:2000 consists of the English text of the
9167-1:1995 ingliskeelset teksti.	European standard EN ISO 9167-1:1995.
Standard on kinnitatud Eesti Standardikeskuse	This standard is ratified with the order of
11.01.2000 käskkirjaga ja jõustub sellekohase	Estonian Centre for Standardisation dated
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2.	national standardisation organisation.
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Standard on kättesaadav testi	The standard is available from Estonian
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EUROPEAN STANDARD

EN ISO 9167-1

NORME EUROPÉENNE

EUROPÄISCHE NORM

ICS 67.200.20

August 1995

Descriptors: agricultural products, plant products, oilseeds, rapeseeds, chemical analysis, determination of content, glucosinolate, high performance liquid chromatography Nis de **English version Rapeseed - Determination of glucosinolates** content - Part 1: Method using high-performance (liquid chromatography (ISO 9167-1:1992) Ment is Graines de colza - Dosage des glusinolates Rapssamen - Bestimmung des Glucosinolatgehaltes review det Partie 1: Méthode par chromatographie liquide Teil 1: HPLC-Verfahren (ISO 9167-1:1992) à haute performance (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 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. The European Standards exist in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions. CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom. CEN European Committee for Standardization Comité Européen de Normalisation Europäisches Komitee für Normung Central Secretariat: rue de Stassart, 36 B-1050 Brussels

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• 1995

Page 2 EN ISO 9167-1:1995

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

215 The text of the International Standard 30 9167-1:1992 has been approved by CEN as a European Standard without any modification

0 officar. On Ocherated by The 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

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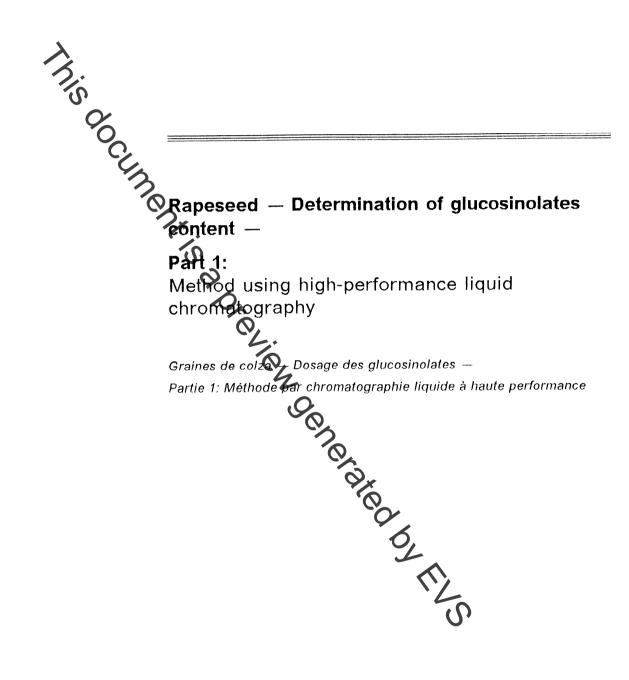
This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications 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	<u>EN</u>	<u>Year</u>
ISO 664	୕ୣୄଢ଼ୄ	Oilseeds - Reduction of laboratory sample to test sample	EN ISO 664	1995
ISO 665	1977	Dilseeds - Determination of musture and volatile matter content	EN ISO 665	1995
ISO 3696	1987	Water for analytical use - Specification and test methods	EN ISO 3696	1995
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INTERNATIONAL STANDARD



First edition 1992-07-01



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Reference number ISO 9167-1:1992(E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standard podies (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 liais with ISO, also take part in the work. ISO collaborates closely with the ternational Electrotechnical Commission (IEC) on all matters of electrolephnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Eublication as an International Standard requires approval by at least 5% 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 \$2, Oleaginous seeds and fruits.

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

- Part 1: Method using high-performance liquid chromatogi nerated by FL.
- Part 2: Method using X-ray fluorescence spectrometry

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

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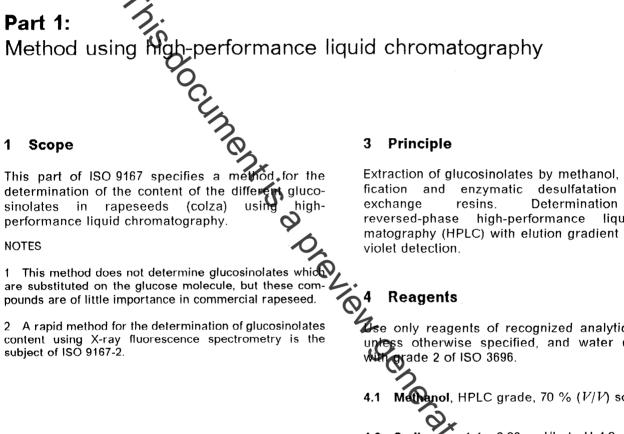
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Rapeseed — Determination of glucosinolates content —



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.

Extraction of glucosinolates by methanol, then purion ionusing liquid chromatography (HPLC) with elution gradient and ultra-

Zee only reagents of recognized analytical grade, unless otherwise specified, and water complying

- Methanol, HPLC grade, 70 % (V/V) solution.
- cetate, 0,02 mol/l at pH 4,0. 4.2 Sodium
- Sodium acetate 0,2 mol/l solution. 4.3
- Imidazole formate 6 mol/l solution. 4.4

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 $(< 20 \ \mu m/g)$, reduce the internal standard concentration (1 mmol/l to 3 mmol/l) in 4.5.1 and 4.5.2.1.