
**Rapeseed — Determination
of glucosinolate content —
Spectrometric method for total
glucosinolates by glucose release**

*Colza — Détermination de la teneur en glucosinolates — Méthode
spectrométrique pour les glucosinolates totaux par libération de
glucose*



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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

Foreword.....	iv
Introduction.....	v
1 Scope.....	1
2 Normative references.....	1
3 Terms and definitions.....	1
4 Principle.....	1
5 Reagents.....	1
6 Apparatus.....	3
7 Sampling.....	4
8 Preparation of the test sample.....	5
8.1 Reduction of test sample to laboratory sample.....	5
8.2 Moisture and volatile matter content.....	5
8.3 Grinding.....	5
9 Procedure.....	5
9.1 Test portion.....	5
9.2 Extraction of glucosinolates.....	5
9.2.1 General.....	5
9.2.2 Principle.....	5
9.2.3 Operating mode.....	5
9.3 Hydrolysis and collection of glucose from glucosinolates by myrosinase and column chromatography.....	6
9.4 Glucose determination.....	6
9.4.1 General.....	6
9.4.2 Glucose oxidase/peroxidase glucose assay (5.4).....	6
9.4.3 Glucose hexokinase/glucose-6-phosphate dehydrogenase assay (5.8).....	7
10 Calculation of glucosinolate content.....	8
11 Expression of results.....	9
12 Precision.....	9
12.1 Interlaboratory test.....	9
12.2 Repeatability.....	9
12.3 Reproducibility.....	9
12.4 Critical difference.....	9
12.4.1 General.....	9
12.4.2 Comparison of two groups of measurements in one laboratory.....	9
12.4.3 Comparison of two groups of measurements in two laboratories.....	10
13 Test report.....	10
Annex A (informative) Extraction and purification of myrosinase from <i>Sinapis alba</i> L., also called white or yellow mustard.....	11
Annex B (informative) Determination of recovery of glucosinolates.....	15
Annex C (informative) Results of the interlaboratory test.....	18
Bibliography.....	20

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 34, *Food products*, Subcommittee SC 2, *Oleaginous seeds and fruits and oilseed meals*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Glucosinolates are important antinutritional and flavour components of brassica oilseeds. They are particularly important in brassica seeds that have been modified to reduce the level of glucosinolates such as low glucosinolate types of rapeseed (canola). Determination of the level of glucosinolates in these seeds often reflects the commercial value and, certainly, discrimination between seeds with high levels of glucosinolates and those with low levels of glucosinolates is important both for commercial testing and scientific studies. This document provides a method for the estimation of total glucosinolates without requiring chromatographic apparatus. It complements ISO 9167, which is the reference method. This document is a Technical Specification as the precision data issued from the collaborative trial is not sufficient.

Rapeseed — Determination of glucosinolate content — Spectrometric method for total glucosinolates by glucose release

1 Scope

This document specifies a method for the determination of the content of the total glucosinolates in rapeseeds (colza) using visible spectrometry to determine the glucose released from glucosinolates by hydrolysis.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 664, *Oilseeds — Reduction of laboratory sample to test sample*

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

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

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

total glucosinolates

quantity of glucose released on hydrolysis by myrosinase and determined enzymatically

Note 1 to entry: The total glucosinolates is expressed as micromoles per gram of the seeds.

4 Principle

Total glucosinolates in a ground, full-fat brassica seed sample can be determined directly by estimation of glucose released on hydrolysis as the glucose unit is common to all glucosinolates. Hydrolysis of glucosinolates by myrosinase quantitatively releases glucose from the glucosinolates. The glucose is analysed using either glucose oxidase/peroxidase enzyme assay or glucose hexokinase/glucose-6-phosphate dehydrogenase enzyme assays.

5 Reagents

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