SLOVENSKI STANDARD
SIST EN 12014-1:1999/A1:2000

01-maj-2000

Živila - Določevanje nitratov in/ali nitritov - 1. del: Splošna določila

Foodstuffs - Determination of nitrate and/or nitrite content - Part 1: General considerations

Lebensmittel - Bestimmung des Nitrat- und/oder Nitritgehaltes - Teil 1: Allgemeines

Produits alimentaires - Détermination de la teneur en nitrates et/ou en nitrites - Partie 1: Considérations générales

Ta slovenski standard je istoveten z: **EN 12014-1:1997/A1:1999**

ICS:

67.050	Splošne preskusne in analizne metode za živilske proizvode	General methods of tests and analysis for food products

SIST EN 12014-1:1999/A1:2000 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 12014-1:1997/A1

August 1999

ICS 67.050

English version

Foodstuffs - Determination of nitrate and/or nitrite content - Part 1: General considerations

Produits alimentaires - Détermination de la teneur en nitrates et/ou en nitrites - Partie 1: Considérations générales

Lebensmittel - Bestimmung des Nitrat- und/oder Nitritgehaltes - Teil 1: Allgemeines

This amendment A1 modifies the European Standard EN 12014-1:1997; it was approved by CEN on 21 July 1999.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for inclusion of this amendment into the relevant 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.

This amendment exists 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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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

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

Ref. No. EN 12014-1:1997/A1:1999 E

Foreword

This Amendment EN 12014-1:1997/A1:1999 to EN 12014-1:1997 has been prepared by Technical Committee CEN/TC 275 "Food analysis - Horizontal methods", the secretariat of which is held by DIN.

This Amendment to the European Standard EN 12014-1:1997 shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by February 2000, and conflicting national standards shall be withdrawn at the latest by February 2000.

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

2 Normative references

para 3
Correct reference to ENV 12014-3

para 4
Correct reference to ENV 12014-4

para 6
Correct reference to ~~pr~~EN 12014-7

3.2
Delete the whole text under 3.2 and substitute as follows:

3.2 ENV 12014-3 "Foodstuffs - Determination of nitrate and/or nitrite content - Part 3: Spectrometric determination of nitrate and nitrite content of meat products after enzymatic reduction of nitrate to nitrite"

Nitrite in an aqueous extract of the analytical sample is treated with sulfanilamide and N-(1-naphthyl)-ethylenediamine dihydrochloride. A red compound is produced which is measured spectrometrically at a wavelength of 540 nm.

Nitrate in an aqueous extract of the analytical sample is converted into nitrite by nitrate reductase. Treatment of this nitrite together with the nitrite which is already in the analytical sample with sulfanilamide and N-(1-naphthyl)ethylenediamine dihydrochloride. Photometric measurement of the colour intensity of this red compound at a wavelength of 540 nm. The nitrate content is calculated from the difference between the spectrometric measurements.

This method is applicable to the analysis of meat products and has been validated for total nitrate and nitrite contents of 25 mg/kg as nitrite ion.

NOTE: Experiences have shown that the method is also applicable for total nitrite and nitrate content of 10 mg/kg up to 50 mg/kg as nitrite ion.

This method has been successfully tested in an interlaboratory test on sausage.

3.3
Delete the whole text under 3.3 and substitute as follows:

3.3 ENV 12014-4 "Foodstuffs - Determination of nitrate and/or nitrite content - Part 4: IC method for the determination of nitrate and nitrite content of meat products"

Nitrate and nitrite are extracted from the test sample with hot water. The aqueous solution is treated with acetonitrile to remove any interfering substance. The nitrate and nitrite contents of the solution are then determined by ion-exchange chromatography (IC) and ultraviolet (UV) detection at a wavelength of 205 nm.

This method is applicable to the determination of nitrate and nitrite contents of meat products having a nitrate content of 50 mg/kg to 300 mg/kg as nitrate ions and a nitrite content of approximately 40 mg/kg as nitrite ion.

NOTE: Validation data obtained from interlaboratory studies show that this method may also be applied to the determination of nitrate in vegetables and baby food. Furthermore, the method may be applied for the determination of nitrite in meat products having a nitrite content of greater than 40 mg/kg.

This method has been successfully tested in an interlaboratory test on corned beef.

3.6

Delete the whole text under 3.6 and substitute as follows:

3.6 EN 12014-7 "Foodstuffs - Determination of nitrate and/or nitrite content - Part 7: Continuous flow method for the determination of nitrate content of vegetables and vegetable products after cadmium reduction"

Test portions are extracted with water and filtered. The filtrate is transferred to the dializer of a continuous flow (CF) system. An aliquot portion of the nitrate ions diffuses in the dialyzing unit with a hydrophilic membrane into a slightly alkaline buffer solution in which the nitrate is reduced to nitrite by metallic cadmium. The nitrite ions react with sulfanilamide and N-1-naphthylethylenediamine to produce a reddish-purple azo dye.

The absorbance of this dye is determined spectrometrically at a wavelength between 520 nm and 540 nm, preferably at its maximum.

This method is applicable to the determination of nitrate content of vegetables and vegetable products having a nitrate content of 900 mg/kg to 5200 mg/kg (calculated as nitrate ion).

NOTE: Experiences have shown that the method may also applied for vegetables and vegetable products having a nitrate content of greater than 50 mg/kg (calculated as nitrate ion).

The method has been successfully tested in an interlaboratory test on beetroot, lettuce, endive and spinach.