

Foodstuffs - Determination of niacin by HPLC

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 15652:2009 sisaldab Euroopa standardi EN 15652:2009 ingliskeelset teksti.

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English Version

Foodstuffs - Determination of niacin by HPLC

Produits alimentaires - Dosage de la niacine par CLHP

Lebensmittel - Bestimmung von Niacin mit HPLC

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Foreword

This document (EN 15652:2009) has been prepared by Technical Committee CEN/TC 275 “Food analysis - Horizontal methods”, the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by November 2009, and conflicting national standards shall be withdrawn at the latest by November 2009.

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1 Scope

This European Standard specifies a method for the determination of the mass fraction of niacin in foodstuffs by high performance liquid chromatography (HPLC) by three different ways of hydrolysis, acid hydrolysis (A), enzymatic hydrolysis (B) or acid/alkaline hydrolysis (C).

The method has been validated in interlaboratory tests on fortified and non-fortified samples such as breakfast cereal powder, chocolate cereals, cooked ham, green peas, lyophilized green peas with ham, lyophilized soup, nutritive orange juice, milk powder and wheat flour, at levels from 0,5 mg/100 g to 24 mg/100 g. For further information on the validation data, see Annex B.

A and B give similar results for niacin. In options A and B niacin is calculated as the sum of nicotinamide and nicotinic acid, and expressed as nicotinic acid [1]. Option C gives higher results than A and B for niacin with non-supplemented cereals, but similar results for other products. In option C, niacin is calculated and expressed as nicotinic acid after transformation of nicotinamide into nicotinic acid [2].

Option A is faster and cheaper than B and C.

Option B is used if an exact quantification of nicotinamide and nicotinic acid is needed. This cannot be done with option A, because there is a slight transformation of nicotinamide into nicotinic acid during the acid hydrolysis.

Option C quantifies total niacin. The alkaline hydrolysis is able to liberate other forms giving higher results for niacin, which in some foods such as maize and cereals are not normally biologically available, see [3], [4] and [5].

Information on a comparison between the three different ways of hydrolysis is given in Annex C.

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.

EN ISO 3696:1995, *Water for analytical laboratory use – Specification and test methods (ISO 3696:1987)*