ICS 67.060, 67.230 SLOVENSKÁ TECHNICKÁ NORMA Marec 2023

STN	**Potraviny Stanovenie toxínu T-2 a HT-2 v obilninách a výrobkoch z obilnín pre dojčatá a malé deti po prečistení metódou SPE a HPLC-MS/MS**	**STN EN 16923 56 0526**

Foodstuffs - Determination of T-2 toxin and HT-2 toxin in cereals and cereal products for infants and young children by SPE clean up and HPLC-MS/MS

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 02/23

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ICS 67.060; 67.230 Supersedes EN 16923:2017

English Version

Foodstuffs - Determination of T-2 toxin and HT-2 toxin in cereals and cereal products for infants and young children by SPE clean up and HPLC-MS/MS

Produits alimentaires - Dosage des toxines T-2 et HT-2 dans les céréales et les produits céréaliers pour nourrissons et enfants en bas âge par purification par SPE et CLHP-SM/SM

Lebensmittel - Bestimmung von T 2 Toxin und HT 2 Toxin in Getreide und Säuglings- und Kleinkindernahrung auf Getreidebasis mit HPLC MS/MS nach SPE-Reinigung

This European Standard was approved by CEN on 9 October 2022.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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European foreword

This document (EN 16923:2022) 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of an identical text or by endorsement, at the latest by May 2023, and conflicting national standards shall be withdrawn at the latest by May 2023.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 16923:2017.

In comparison with the previous edition, the following technical modifications have been made:

— the second elution step in the solid phase extraction in 7.4 is more clearly described.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

Introduction

The mycotoxin T-2 toxin and its metabolite HT-2 toxin belong to the group of trichothecenes which are produced by various Fusarium species. Cereals like maize, wheat, barley, oats and rye are most likely to be affected.

WARNING 1 — Suitable precaution and protection measures need to be taken when carrying out working steps with harmful chemicals. The latest version of the hazardous substances ordinance, Regulation (EC) No 1907/2006 [3], should be taken into account as well as appropriate national statements, e.g. such as in [4].

WARNING 2 — The use of this document can involve hazardous materials, operations and equipment. This document does not purport to address all the safety problems associated with its use. It is the responsibility of the user of this document to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

WARNING 3 — T-2 toxin and its metabolite HT-2 toxin are known to have carcinogenic effects.

1 Scope

This document describes a method for the determination of T-2 toxin and HT-2 toxin in cereals and cereal-based products, e.g. oats, intended for nutrition of infants and young children by high performance liquid chromatography (HPLC) coupled with tandem mass spectrometry (MS/MS) after cleanup by solid phase extraction (SPE) [5].

The method has been validated for HT-2 toxin in oat flour at levels of 9,3 µg/kg and 28,1 µg/kg, oat flakes at levels of 16,5 µg/kg and 21,4 µg/kg, and breakfast cereals (containing oat flakes) at a level of 8,1 µg/kg and for T-2 toxin in oat flour at levels of 4,4 µg/kg and 8,3 µg/kg, oat flakes at levels of 4,9 µg/kg and 6,6 µg/kg and breakfast cereals (containing oat flakes) at a level of 3,5 µg/kg.

Laboratory experiences [6] have shown that the method is also applicable to highly swelling materials (dry cereal-based porridges and modified starches), but these were not examined in the method validation study. Details are outlined in 7.3.

The method can also be applied to oat-by-products at higher levels of T-2- and HT-2 toxin. In this case, the dilution steps need to be considered [6].

The method can also be applied to cereals and cereal products for infants and young children based on e.g. wheat, barley and rice. In this case, the method needs to be in-house-validated for each material. At the time of the interlaboratory study, planned range was 10 µg/kg to 100 µg/kg, and it is known from the pre-study that the method works well in the whole range, although final validation was only done in the range from 3,5 µg/kg to 28,1 µg/kg.

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.

EN ISO 3696, *Water for analytical laboratory use - Specification and test methods (ISO 3696)*