NSAI Standards

Irish Standard
I.S. EN 17194:2019

Animal feeding stuffs: Methods of sampling and analysis - Determination of Deoxynivalenol, Aflatoxin B1, Fumonisin B1 & B2, T-2 & HT-2 toxins, Zearalenone and Ochratoxin A in feed materials and compound feed by LC-MS/MS

I.S. EN 17194:2019

Incorporating amendments/corrigenda/National Annexes issued since publication:

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard — national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation — recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

This document replaces/revises/consolidates the NSAI adoption of the document(s) indicated on the CEN/CENELEC cover/Foreword and the following National document(s):

NOTE: The date of any NSAI previous adoption may not match the date of its original CEN/CENELEC document.

This document is based on:	*Published:*
EN 17194:2019	2019-11-06

This document was published under the authority of the NSAI and comes into effect on:	ICS number:
2019-11-24	65.120
	NOTE: If blank see CEN/CENELEC cover page

NSAI
1 Swift Square,
Northwood, Santry
Dublin 9

T +353 1 807 3800
F +353 1 807 3838
E standards@nsai.ie
W NSAI.ie

Sales:
T +353 1 857 6730
F +353 1 857 6729
W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

National Foreword

I.S. EN 17194:2019 is the adopted Irish version of the European Document EN 17194:2019, Animal feeding stuffs: Methods of sampling and analysis - Determination of Deoxynivalenol, Aflatoxin B1, Fumonisin B1 & B2, T-2 & HT-2 toxins, Zearalenone and Ochratoxin A in feed materials and compound feed by LC-MS/MS

This document does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

For relationships with other publications refer to the NSAI web store.

Compliance with this document does not of itself confer immunity from legal obligations.

In line with international standards practice the decimal point is shown as a comma (,) throughout this document.

This page is intentionally left blank

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 17194

November 2019

ICS 65.120

English Version

Animal feeding stuffs: Methods of sampling and analysis - Determination of Deoxynivalenol, Aflatoxin B1, Fumonisin B1 & B2, T-2 & HT-2 toxins, Zearalenone and Ochratoxin A in feed materials and compound feed by LC-MS/MS

Aliments des animaux : Méthodes d'échantillonnage et d'analyse - Détermination du déoxynivalénol, de l'aflatoxine B1, de la fumonisine B1 et B2, des toxines T-2 et HT-2, de la zéaralénone et de l'ochratoxine A dans les matières premières pour aliments et les aliments composés pour animaux par CL-SM/SM

Futtermittel: Probenahme- und Untersuchungsverfahren - Bestimmung von Deoxynivalenol, Aflatoxin B1, Fumonisin B1 und B2, T-2- und HT-2-Toxine, Zearalenon und Ochratoxin A in Einzelfuttermitteln und Mischfuttermitteln mittels LC-MS/MS

This European Standard was approved by CEN on 9 September 2019.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Ref. No. EN 17194:2019 E

Contents

Page

European foreword

This document (EN 17194:2019) has been prepared by Technical Committee CEN/TC 327 “Animal feeding stuffs - Methods of sampling and analysis”, the secretariat of which is held by NEN.

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 2020, and conflicting national standards shall be withdrawn at the latest by May 2020.

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 has been prepared under a standardization request given to CEN by the European Commission and the European Free Trade Association.

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, Turkey and the United Kingdom.

1 Scope

This document's method of analysis is applicable for the determination of:

— deoxynivalenol (DON) in the tested range of 100 µg/kg to 3 300 µg/kg,

— aflatoxin B1 (AfB1) in the tested range of 2,5 µg/kg to 440 µg/kg,

— fumonisin B1 (FB1) in the tested range of 690 µg/kg to 7 500 µg/kg,

— fumonisin B2 (FB2) in the tested range of 200 µg/kg to 2 500 µg/kg,

— T-2 toxin in the tested range of 7,5 µg/kg to 360 µg/kg,

— HT-2 toxin in the tested range of 14 µg/kg to 1 800 µg/kg,

— zearalenone (ZEN) in the tested range of 30 µg/kg to 600 µg/kg, and

— ochratoxin A (OTA) in the tested range of 10 µg/kg to 230 µg/kg

in cereals and cereal-based compound feed by liquid-chromatography tandem mass spectrometry (LC-MS/MS). The actual working ranges could extend beyond the tested ranges.

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

EN ISO 6498, *Animal feeding stuffs — Guidelines for sample preparation (ISO 6498)*

3 Terms and definitions

No terms and definitions are listed in this document.

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

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at https://www.iso.org/obp.

4 Principle

A test portion of finely ground and homogeneous material is extracted by shaking with a mixture of acetonitrile and aqueous formic acid solution. The extract is centrifuged and an aliquot of the supernatant extract is transferred to a deactivated glass vial, mixed with an appropriate amount of stable-isotope labelled analogues and evaporated to dryness. The reconstituted sample is filtered and quantified with a Liquid Chromatography - Mass Spectrometry (LC-MS) system. Laboratories using this method shall demonstrate the following limits of quantitation (LOQs) in order to be able to apply this method over the whole validation range: for DON ≤ 100 µg/kg, for AfB1 ≤ 2 µg/kg, for FB1 and FB2 ≤ 500 µg/kg (FB1 ≤ 375 µg/kg and FB2 ≤ 125 µg/kg), for T-2 and HT-2 toxin ≤ 10 µg/kg, for ZEN ≤ 20 µg/kg and for OTA ≤ 10 µg/kg.