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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 25228-2010

**Inspection of grain and oils -- Determination of fumonisins in
corn and its products by high liquid chromatography and
fluorometer with immunoaffinity column cleanup**

粮油检验 玉米及其制品中伏马毒素含量测定 免疫亲和柱净化高效液相色谱法和
荧光光度法

(English Translation)

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Foreword

The immunoaffinity column in this standard is purified by high performance liquid chromatography using the International Association of Analytical Chemists.

Methodology.2001.04 Determination of fumonisin in maize and maize flakes Immunoaffinity column Purification liquid chromatography "(Officialmethod for ease of use, this standard has the following modifications to AOACofficialmethod2001.04.

--- will be applied to the determination of the concentration range is modified to the detection limit, the deletion of the standard laboratory test data table A and Table B, increased Domestic laboratory test data;

To modify the requirements for immunoaffinity columns;

--- modify the concentration range of the standard curve;

--- will be fixed volume from.200μL to 400μL;

--- added a blank test;

--- simplifies the calculation of the results.

Appendix A, Appendix B and Appendix C of this standard are informative.

This standard is proposed by the National Grain Bureau.

This standard by the National Grain Standardization Technical Committee.

This standard is responsible for the drafting unit. State Food Bureau Science Research Institute.

This standard participates in the drafting unit. Beijing Zhongwei Weikang Technology Co., Ltd.

1 Scope

This standard specifies the use of immunoaffinity column purification of high performance liquid chromatography and immunoaffinity column purification fluorescence spectrophotometric determination of corn and its system the principle, reagents and materials, apparatus and equipment for the determination of fumonisin in products, procedures and results.

In this standard, immunoaffinity column purification and high performance liquid chromatography (HPLC) is suitable for the determination of fumonisin B1 and B2 in maize and maize products.

The immuno - spectrophotometric method for the determination of the total amount of fumonotoxin in maize and maize products.

The detection limit of immunoaffinity column purification and high performance liquid chromatography was 0.1mg/kg. The detection limit of immunoaffinity column was as follows. 0.5 mg/kg.

2 Normative reference documents

The terms of the following documents are hereby incorporated by reference into this standard. Whichever is the date of the reference file, which is followed by all (Excluding corrigenda) or revisions do not apply to this standard, however, encourage the parties to reach an agreement under this standard Whether you can use the latest version of these files. For undated references, the latest edition applies to this standard.

GB/T 6682 Analytical laboratory water specifications and test methods

3.1 Principles

The samples were purified by immunoaffinity reaction, and the fumarotoxin derived from o-phthalaldehyde was used as fluorescent compound. Reverse phase high performance liquid chromatography the contents of fumonisin B1 and B2 were determined by separation, detection and external standard method.

3.2 Reagents and materials

Unless otherwise specified, the reagents used are analytical pure, experimental water should be consistent with GB/T 6682 in the secondary water requirements.

3.2.1

Methanol. Chromatography is pure or comparable in purity.

3.2.2

acetonitrile. pure chromatography, or pure purity.

3.2.3

Sodium dihydrogen phosphate ($\text{NaH}_2\text{PO}_4 \cdot 2\text{H}_2\text{O}$).

3.2.4

Sodium tetraborate ($\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O}$).

3.2.5

Sodium chloride.

3.2.6

disodium hydrogen phosphate.

3.2.7

Potassium dihydrogen phosphate.

3.2.8

Potassium chloride.

3.2.9

concentrated hydrochloric acid.

3.2.10

phosphoric acid.

3.2.11

o-phthalaldehyde (OPA).

3.2.12 2-thioethanol (MCE).

3.2.13 0.1mol/L sodium dihydrogen phosphate solution. Weigh 15.6g sodium dihydrogen phosphate (3.2.3), dissolved in water and set the volume of 1L.

3.2.14 0.1mol/L sodium tetraborate solution. Weigh 3.8g sodium tetraborate (3.2.4), dissolved in water and set to 100mL.

3.2.15 2mol/L hydrochloric acid solution. 1 volume of concentrated hydrochloric acid (3.2.9) dissolved in 5 volumes of water.