



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

**GB 23200.51-2016**

Replacing SN/T 2231-2008

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**Food safety national standard -- Determination of dormone  
residues in food by liquid chromatography-mass spectrometry /  
mass spectrometry**

食品中呋虫胺残留量的测定 液相色谱-质谱 质谱法

**(English Translation)**

**Issued on: December 18, 2016**

**Implemented on: June 18, 2017**

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**Issued by: National Health and Family Planning Commission of the  
People 's Republic of China**

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### Foreword

This standard replaces SN/T 2231-2008 "Determination of Dicerosperm Residue in Food by Gas Chromatography-Mass Spectrometry".

Compared with SN/T 2231-2008, the main changes are as follows.

- Standard text format is modified to national standard text format for food safety;
- the name of the "export food" to "food";

- increase the "other food reference implementation" in the standard range.

This standard replaced the previous version of the standard release.

-SN/T 2231-2008.

National standards for food safety Determination of dormone residues in food by liquid chromatography - mass spectrometry/mass spectrometry

## 1 Scope

This standard specifies the preparation of dendrites in food for import and export and liquid chromatography-mass spectrometry/mass spectrometry.

This standard applies to dolomin residues in wheat, peanuts, corn, spinach, apples, carrots, basil leaves, pork and salmon the detection and confirmation. Other food can refer to the implementation.

## 2 Normative reference documents

The following documents are indispensable for the application of this document. For dated references, only the dated edition applies to this file. For undated references, the latest edition (including all modifications) applies to this document.

GB 2763 National Standard for Food Safety - Maximum Residue Limit of Pesticides in Foodstuffs GB/T 6682 Analytical laboratory water specifications and test methods.

## 3 Principle

The sample was extracted with acetonitrile, and the extract was added with anhydrous sodium sulfate. After dehydration, the graphitized non-porous carbon column (Envi-Carb)/amidopropyl Silica-based silica gel column (LC-NH<sub>2</sub>) purification, liquid chromatography-mass spectrometry/mass spectrometry, external standard method.

## 4 Reagents and materials

Unless otherwise specified, all reagents are of analytical grade and water is in accordance with the primary water specified in GB/T 6682.

### 4.1 Reagents

#### 4.1.1

Acetonitrile (C<sub>2</sub>H<sub>3</sub>N). Chromatographic pure.

**4.1.2**

n-hexane (C<sub>6</sub>H<sub>14</sub>). pure chromatography.

**4.1.3**

Acetone (C<sub>3</sub>H<sub>6</sub>O). Chromatographic pure.

**4.1.4**

ether (C<sub>4</sub>H<sub>10</sub>O). chromatographic purity.

**4.1.5**

sodium chloride (NaCl). excellent grade pure.

**4.1.6**

anhydrous sodium sulfate (Na<sub>2</sub>SO<sub>4</sub>). analysis of pure, 650 °C burning 4 h, after natural cooling stored in a sealed bottle in reserve.

**4.1.7**

Potassium hydrogen phosphate (K<sub>2</sub>HPO<sub>4</sub>). analytical grade.

**4.1.8**

Potassium dihydrogen phosphate (KH<sub>2</sub>PO<sub>4</sub>). Analytical purity.

**4.1.9**

Sodium hydroxide (NaOH). Analytical purity.

**4.1.10**

hydrochloric acid (HCl). excellent grade pure.

**4.2 Solution preparation**

4.2.1 1 mol/L Sodium hydroxide. Weigh 40 g of sodium hydroxide and dissolve in 1 L of water.

4.2.2 1 mol/L hydrochloric acid. Weigh 36.5 g of pure hydrochloric acid and dissolve in 1 L of water.

**4.2.3**

N-Hexane Saturated Alice. 100 mL of acetonitrile and 100 mL of n-hexane were added to the 250 mL separatory funnel, the bottom layer is n-hexane saturated acetonitrile.

**4.2.4**

Acetone-n-Hexane (1 1, V/V). Mix an equal volume of acetone and n-hexane to shake well.

#### 4.2.5

Phosphate buffer. 0.5 mol/L (pH = 7.0), weigh 52.7 g of dipotassium hydrogen phosphate and 30.2 g of potassium dihydrogen phosphate, add about 500 mL Water dissolved, with 1 mol/L sodium hydroxide or 1 mol/L hydrochloric acid to adjust pH7.0, add water to volume 1 L.

### 4.3 Standards

#### 4.3.1

Dinotefuran reference substance. (dinotefuran, C<sub>7</sub>H<sub>14</sub>N<sub>4</sub>O<sub>3</sub>), CAS NO. 165252-70-0, purity greater than or equal to 98%.

### 4.4 Standard solution preparation

#### 4.4.1

Dipyrzole standard stock solution. Weigh the appropriate amount of dinotefuran standard, with acetone - n-hexane (1 1, V/V) prepared into 1.0 mg/mL standard Quasi-stock solution; 0 ~ 4 0C save. The shelf life is one year.

#### 4.4.2

Dipyrzole standard working solution. Prepare the stock solution with acetone-n-hexane (1 1, V/V) to form a suitable concentration Working fluid. 0 ~ 4 0C save. The shelf life is one month.

### 4.5 Materials

#### 4.5.1

Envi-Carb/LC-NH<sub>2</sub> solid phase extraction column. 500 mg/500 mg. Supelclean ENVI-Carb SPE9 (Graphitized non-porous Carbon) in series with Supelclean LC-NH<sub>2</sub> SPE (amide propylsilylated silica gel).

#### 4.5.2

Filtration. 0.2 μm.

## 5 Instruments and equipment

### 5.1

Liquid Chromatography-Mass Spectrometry/Mass Spectrometer. Equipped with an electrospray ion source (ESI).

### 5.2

Analysis of balance. 0.01 g and 0.0001 g.