



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

GB 23200.15-2016

Replacing GB/T 23216-2008

**Food safety national standard -- Determination of residues of
503 pesticides and related chemicals in edible fungi by gas
chromatography-mass spectrometry**

食用菌中503种农药及相关化学品残留量的测定 气相色谱-质谱法
(English Translation)

Issued on: December 18, 2016

Implemented on: June 18, 2017

**Issued by: National Health and Family Planning Commission of the
People's Republic of China, State Food and Drug Administration**

Table of Contents

Preface	
1 Scope	
2 Normative reference document	
Principle	
4 Reagents and materials	
5 Instruments and equipment	
6 Preparation of sample	
7 Analysis Step	
Calculation and presentation of results	
9 Precision	
10% limit and recovery rate	
Appendix A (informative) 503 kinds of pesticides and related chemicals, English name, method of quantitative limit, grouping, solvent selection and mixing	
Standard solution concentration Table	
Appendix B (informative) Retention time for 503 pesticides and related chemicals and internal standard compounds, quantitative ions, qualitative ions and	

Foreword

This standard replaces GB/T 23216-2008 "Determination of 503 pesticides and related chemical residues in edible fungi by gas chromatography-mass spectrometry".

This standard compared with GB/T 23216-2008, the main changes are as follows.

- Standard text format is modified to national standard text format for food safety;
- increase the "other edible fungi can refer to the implementation" in the standard range.

This standard replaced the previous version of the standard release.

-GB/T 23216-2008.

National standards for food safety Determination of Residues of 503 Pesticides and Related Chemicals in Edible Gas chromatography - mass spectrometry

1 Scope

This standard specifies the amount of 503 pesticides and related chemicals (see Appendix A) Residual gas from mushroom,, black fungus, mushrooms Determination of

Chromatography - Mass Spectrometry.

This standard applies to the qualitative identification of 503 kinds of pesticides and related chemicals in the mushroom,, black fungus, mushrooms, 478 kinds of pesticides and Quantitative determination of related chemicals, other edible fungi 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 article Pieces. For undated references, the latest edition (including all modifications) applies to this document.

2763 Food Safety National Standard Food Pesticide Maximum Residue Limits GB/T 6682 Analytical laboratory water specifications and test methods

3 Principle

The samples were extracted with acetonitrile homogenate, salted out by centrifugation, solid phase extraction column, eluted with acetonitrile toluene (3 1, volume ratio) Off the chemical, with gas chromatography - mass spectrometry, internal standard method quantitative.

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 (CH₃CN, 75-05-8). Chromatographic Purification.

4.1.2

Toluene (C₇H₈, 108-88-3). Chromatographic pure.

4.1.3

n-hexane (C₆H₁₄,110-54-3). pure chromatography.

4.1.4

Acetone (CH₃COCH₃, 67-64-1). Chromatographic pure.

4.1.5

Cyclohexane (C₆H₁₂,110-82-7). Chromatographic Purification.

4.1.6

Isooctane (C₈H₁₈,540-84-1). Chromatographic pure.

4.1.7

Ethyl acetate (CH₃COOCH₂CH₃,141-78-6). Chromatographic purity.

4.1.8

sodium chloride (NaCl, 7647-14-5). excellent grade pure.

4.1.9

anhydrous sodium sulfate (Na₂SO₄,7757-82-6). analytical grade. 650 °C burning 4 h, stored in a dryer, cooling and standby.

4.2 Solution preparation

Acetonitrile-toluene solution (3 1). take 300 mL of acetonitrile, add 100 mL of toluene, shake back.

4.3 Standards

Pesticide and Related Chemical Reference Material. Purity >=95%, see Appendix A.

4.4.1 Standard stock solution

Accurately weigh 5 mg to 10 mg (accurate to 0.1 mg) Pesticides and related chemicals are placed in 10 mL volumetric flask, root According to the solubility of the standard and the need for determination of toluene, acetone mixture, dichloromethane and other solvents dissolved and constant volume to the scale (solvent Choose see Appendix A). The standard stock solution is stored at 4 ° C for 1 year.

4.4.2 Internal standard solution

Accurately weighed 3.5 mg epoxy heptachlor in 100 mL volumetric flask, with toluene volume to the scale.

4.4.3 Mixing standard solutions (mixed standard solutions A, B, C, D, E and F)

According to the nature and retention time of pesticides and related chemicals, 503 pesticides and related chemicals are divided into A, B, C, D, E, F Six groups and determine their concentration in the mixed standard solution based on the response sensitivity of each pesticide and associated chemical on the instrument. This standard refer to Appendix A for the grouping of 503 pesticides and related chemicals and their mixed standard solution concentrations.

Depending on the group number of each pesticide and associated chemical, the

concentration of the standard solution and the concentration of the standard stock solution, Pesticide and related chemicals standard stock solution in 100 mL volumetric flask, with toluene volume to the scale. Mix the standard solution in the dark at 4 °C. Save, save for a month.

4.4.4 Substrate mixed standard working solution

A, B, C, D, E, F group of pesticides and related chemical matrix mixed standard working solution is 40 µL internal standard solution and a certain volume the mixed standard solutions of A, B, C, D, E and F were added to 1.0 mL of the sample blank matrix extract respectively, Standard working solutions A, B, C, D, E and F. Matrix mixed standard working solution should be used with the current distribution.

4.5 Materials

Sep-Pak CarbonNH₂

1) solid phase extraction column. 6 mL, 1 g or equivalent.

5 Instruments and equipment

5.1

Gas Chromatography-Mass Spectrometer. Equipped with an electron impact source (EI).

5.2

Analysis of balance. 0.1 mg and 0.01 g.

5.3

Centrifuge tube. 80 mL.

5.4

high-speed organization crusher. the minimum speed of not less than 12 000 r/min.

5.5

Centrifuge. the minimum speed of not less than 4.200 r/min.

5.6 Chicken heart bottle. 100 mL

5.7 Pipettes. 1 mL and 10 mL.

5.8 Rotary evaporator.

5.9 Vials. 2 mL, with Teflon capping.