



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

GB 23200.14-2016

Replacing GB/T 23206-2008

**Food safety national standard -- Determination of 512 pesticides and
related chemical residues in fruit and vegetable juices and fruit wine by
liquid chromatography-mass spectrometry**

果蔬汁和果酒中512种农药及相关化学品残留量的测定 液相色谱-质谱法

(English Translation)

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Appendix A (informative) 512 kinds of pesticides and related chemicals, English name, method of quantitative limit, grouping, solvent selection and mixing

Foreword

The standard instead of GB/T 23206-2008 "fruit and vegetable juice, fruit wine in the determination of 512 kinds of pesticides and related chemical residues liquid chromatography - Tandem mass spectrometry".

This standard compared with GB/T 23206-2008, the main changes are as follows.

- Standard text format is modified to national standard text format for food safety;
- the standard range to increase the "other fruit and vegetable juice, wine can refer to the implementation." this standard replaced the previous version of the standard release.
- GB/T 23206-2008.

National standards for food safety Determination of 512 pesticides and related chemical residues in fruit and vegetable juices and Liquid chromatography - mass spectrometry

1 Scope

This standard provides orange juice, apple juice, grape juice, cabbage juice, carrot juice, dried wine, semi-dry wine, semi-liqueur, liqueur 512 Pesticide and related chemicals (see Appendix A) Residue Liquid Chromatography - Mass Spectrometry.

This standard applies to orange juice, apple juice, grape juice, cabbage juice, carrot juice,

dried wine, semi-dry wine, semi-liqueur, Pesticide and related chemical residues in the qualitative identification, but also for 490 kinds of pesticides and related chemical residues in the quantitative determination of other fruits and vegetables Juice, wine 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.

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 1% acetonitrile solution, purified by Sep-Pak Vac column, eluted with acetonitrile-toluene solution (3 1) and related the samples were analyzed by liquid chromatography - tandem mass spectrometry and quantified by 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 (CH₃CN, 75-05-8). Chromatographic Purification.

4.1.2

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

4.1.3

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

4.1.4

Methanol (CH₃OH, 67-56-1/170082-17-4). Chromatographic Purification.

4.1.5

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

4.1.6

acetic acid (CH_3COOH , 64-19-7). excellent grade pure.

4.1.7

Formic acid (HCOOH , 64-18-6). Excellent grade pure.

4.1.8

ammonium acetate ($\text{CH}_3\text{COONH}_4$, 631-61-8). excellent grade pure.

4.1.9

anhydrous sodium acetate (CH_3COONa , 127-09-3). analytical grade.

4.1.10

anhydrous sodium sulfate (Na_2SO_4 , 7757-82-6), anhydrous magnesium sulfate (MgSO_4 , 7487-88-9). analytical grade. Before use at 650 °C burning 4 h, stored in a dryer, cooling and standby.

4.2 Solution preparation

4.2.1 0.1% formic acid solution. take 1000 mL of water, add 1 mL of formic acid, shake back standby.

4.2.2 5mmol/L ammonium acetate solution. Weigh 0.385g ammonium acetate, diluted with water to 1000mL.

4.2.3

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

4.2.4 1% acetic acid acetonitrile solution. take 1000 mL of acetonitrile, add 1 mL of acetic acid, shake back.

4.2.5

acetonitrile - water solution (3 2). take 300 mL of acetonitrile, add.200 mL of water, shake back.

4.3 Standards

Pesticide and Related Chemical Reference Material. Purity $\geq 95\%$, see Appendix A.

4.4.1 Standard stock solution

Respectively, weighing 5 mg ~ 10 mg (accurate to 0.1 mg) pesticides and related chemicals in the standard material in 10 mL volumetric flask, root According to the solubility of the reference substance, methanol, toluene, acetone, acetonitrile or isooctane are dissolved

and fixed to the scale (see Appendix A for solvent selection) Standard solution dark 0 °C ~ 4 °C preservation, shelf life of one year.

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

According to the retention time of pesticides and related chemicals, 512 kinds of pesticides and related chemicals are divided into A, B, C, D, E, F and G and the concentration of each pesticide and associated chemical in the instrument to determine the concentration in the mixed standard solution. This standard for the classification of 512 pesticide and related chemicals and their mixed standard solution concentrations, see Appendix A.

Depending on the grouping of each pesticide and associated chemical, the concentration of the standard solution and the concentration of the standard stock solution, the amount of individual Pesticide and related chemicals Standard stock solution in 100mL volumetric flask, with a fixed volume of methanol to the scale. Mixed standard solution light 0 °C ~ 4 °C Save, save for one month.

4.4.3 Substrate mixed standard working solution

Pesticide and related chemical matrix mixed standard working solution is a blank sample matrix solution dubbed different concentrations of matrix mixed standard work as the solution A, B, C, D, E, F and G, for the standard working curve. Matrix mixed standard working solution should be used with the current distribution.

4.5 Materials

4.5.1

Microporous membrane (nylon). 13 mm x 0.2 µm.

4.5.2

Waters Sep-Pak Vac Ammonia Solid Phase Extraction Column. 6 mL, 1 g, or equivalent.

5 Instruments and equipment

5.1

Liquid Chromatography - Tandem Mass Spectrometer. Equipped with electrospray ion source.

5.2

Analysis of balance. 0.1 mg and 0.01 g.

5.3

chicken heart bottle..200 mL.