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

SN/T 5221-2019

**Determination of chlorantraniliprole residues in foods of plant
origin for export
(English Translation)**

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

1 Scope

The first method of this standard specifies the gas chromatography-mass spectrometry method for the determination of methoprene residues in foods of plant origin for export. Second law A liquid chromatographic method for the determination of methoprene residues in grains has been established.

This standard applies to peaches, pears, cucumbers, potatoes, eggplants, apples, papaya, green peppers, lettuce, rice and other plant-derived foods Determination and confirmation of chlorantraniliprole residues.

2 Normative references

The following documents are indispensable for the application of this document. For dated reference documents, only the dated version applies to this article. For undated reference documents, the latest version (including all amendments) is applicable to this document.

GB/T 6682 Analytical laboratory water specifications and test methods Method 1 Liquid Chromatography-Mass Spectrometry/Mass Spectrometry

3 Method summary

The residual chlorantraniliprole in the sample was extracted with acetonitrile, and the extract was purified by an NH₂ amino solid-phase extraction column, and separated by a C₁₈ column.

Measured objects are detected by electrospray ionization, positive ion scanning and multiple reaction monitoring mode (MRM), and external standard method is used for quantification.

4 Reagents and materials

Except for special instructions, the reagents used are all analytically pure, and the water is first-grade water that meets the requirements of GB/T 6682.

4.1

Acetonitrile (CH₃CN). chromatographic grade.

4.2

Methanol (CH₃OH). chromatographic grade.

4.3

Formic acid (HCOOH). chromatographic grade.

4.4

Anhydrous magnesium sulfate (MgSO₄).

4.5

Sodium chloride (NaCl).

4.6

Mixed powder of anhydrous magnesium sulfate and sodium chloride (1.1). Weigh 50 g of anhydrous magnesium sulfate and 50 g of sodium chloride powder and mix them in a beaker.

Combine evenly, ready for use now.

4.7 0.1% formic acid aqueous solution. accurately pipette 1 mL of formic acid (4.3) into a 1000 mL volumetric flask, add water to the volume and mix well spare.

4.8

Standard material. Chlorantraniliprole (CAS No. 500008-45-7), the purity is greater than 99%.

4.9

Standard stock solution. accurately weigh an appropriate amount of chlorantraniliprole standard substance (4.8), and use methanol (4.2) to prepare the concentration to the 100 mg/L standard stock solution should be stored below -18°C and protected from light.

4.10

Intermediate standard solution. draw an appropriate amount of the above standard stock solution (4.9) and dilute with acetonitrile (4.1) to prepare a 1.0 µg/mL intermediate the standard solution should be stored below 4°C and protected from light.

4.11

Standard working solution. draw an appropriate amount of intermediate standard solution (4.10), and use a blank sample solution to prepare a standard working solution of appropriate concentration Solution, ready to use.

4.12

Amino solid phase extraction column. 6 mL, 1 g or equivalent, activate with 6 mL acetonitrile (4.1) before use, and keep the column moist.

4.13

Microporous membrane. 0.22 mm, organic phase type.

5 Apparatus and equipment

5.1

Liquid Chromatography Tandem Quadrupole Mass Spectrometer. Distributed Spray Positive Ion Source (ESI).

5.2

Analytical balance. Sensitivity 0.1 mg and 0.01 g.

5.3

Vortex mixer.

5.4

Homogenizer.

5.5

Centrifuge. the speed is greater than 3 000 r/min.

5.6

Nitrogen blowing concentrator.

5.7

Centrifuge tube. 50 mL PTFE centrifuge tube.

5.8

Solid phase extraction device.

6 Sample preparation and storage

During the sample preparation process, sample contamination or changes in residue content should be prevented.

6.1 Samples with high water content such as vegetables and fruits

Take about 500 g of the representative sample, chop the edible part first, and mash it evenly with a mixer. The sample is divided into two parts.

Put it into a clean container, seal it, and mark it, and store it in the freezer below -18°C.

6.2 Rice samples with low water content

Take about 500 g of the representative sample, pulverize it thoroughly with a grinder, and mix well. The sample is divided into two parts, put into a clean container, sealed, it should be marked and stored at room temperature.

7.1.1 Samples with high water content such as fruits and vegetables

Weigh 5 g (accurate to 0.01 g) uniform sample into a 50 mL centrifuge tube, add 15 mL acetonitrile (4.1), and then add 4 g chlorinated Sodium and anhydrous magnesium sulfate mixed powder (4.6), make the aqueous solution saturated, extract 1 min at high speed and homogenize, centrifuge at 3 000 r/min for 2 min, the acetonitrile layer was transferred to a 25 mL graduated glass test tube, the residue was extracted with 10 mL acetonitrile (4.1) again, and the extracts were combined.

Blow nitrogen to nearly 2 mL at 45°C and wait for purification.