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

GB/T 23869-2009

Method for determination of the total mercury in pollen

花粉中总汞的测定方法

(English Translation)

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Foreword

The standard proposed by China Federation of Supply and Marketing Cooperatives.

This standard is under the jurisdiction of the national bee standardization working group.

This standard was drafted. People's Republic of China Jiangsu Entry-Exit Inspection and Quarantine Bureau, Jiangsu Laoshan Biotechnology Co., Ltd., Nanjing University, Bee Research Institute, Chinese Academy of Agricultural Sciences.

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Determination of total mercury pollen

1 Scope

This standard specifies the method for determination of total mercury pollen.

This standard applies to the determination of total mercury content in pollen.

The standard lower limit of detection 0.5µg/kg.

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB/T 6682 analytical laboratory use specifications and test methods (GB/T 6682-2008, ISO 3696. 1987, MOD)

3 PRINCIPLE OF THE METHOD

After the sample was heated acid digestion in acidic medium, the sample Mercury is potassium borohydride (KBH₄) reduction of mercury atoms by a carrier gas (argon Gas) into the atomizer at a special mercury hollow cathode lamp irradiation, emit fluorescence characteristic wavelength, the fluorescence intensity and the concentration of mercury being Ratio, compared with standard series quantitation.

4 Reagents

Unless otherwise indicated, the reagents used were of analytical grade water as a water GB/T 6682 regulations.

4.1

nitrate (excellent pure).

4.2

Hydrogen peroxide (30%).

4.3

Potassium hydroxide solution (5g/L). Weigh 5.0g of potassium hydroxide and diluted with deionized water to 1L, mix.

4.4

solution of potassium borohydride (1g/L). Weigh 1.0g of potassium borohydride, dissolved in 1L potassium hydroxide solution (5g/L), the mix, now with the current.

4.5

thiourea ascorbic acid solution (10g/L). Weigh 10g and 10g ascorbic acid, thiourea, with a 5% (volume fraction) nitric acid solution it was diluted to 1L, and mix.

4.6

mercury standard solution. 1000μg/mL.

4.7

mercury standard solution. lessons mercury standard stock solution 1.0mL in 100mL flask, add nitric acid 2mL, with water to volume, is 10μg/mL. Then it was diluted to 100ng/mL mercury standard solution, this solution is valid 60d.

5 Instruments

5.1

pairs of channel Atomic Fluorescence Spectrometer.

5.2

microwave digestion (digestion with high pressure tank).

6.1 Sample Pretreatment

6.1.1

Sampling and sample preparation process, should be taken not to sample contamination.

6.1.2

The sample should be stored in airtight and dry container.

6.2 Sample Microwave Digestion

Weigh 0.5g sample in the digestion tank, add 3mL of nitric acid and hydrogen peroxide 1mL, according to Table 1 after the end of the digestion procedure, remove spent DI water to 25mL; while doing a reagent blank test.