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**CERTIFICATION AND ACCREDITATION INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

RB/T 151-2016

**Guidelines for the estimation of measurement uncertainty of
food microbiological quantitative detection
(English Translation)**

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Foreword

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

This standard uses the redrafting method to modify the use of ISO/T S19036.2006 "Food and animal feed microbiological quantitative testing is not correct Guide to the Assessment of Qualifications (English version).

This standard and ISO/T S19036.2006 "Guidelines for the assessment of the uncertainty of quantitative detection of microbiological foods and animal feeds" the technical differences that exist in the version are as follows.

- Remove all content related to animal feed in ISO/T S19036.2006, and only retain food-related content;
- Add the section of the normative reference document;
- Replace "ISO/IEC 17025:2005" in ISO/T S19036.2006 with "GB/T 27025-2008";
- Amend the 2.1 "Note 3" in ISO/T S19036.2006 to the body content;
- ISO/T S19036.2006 4.2 and 5 "intralaboratory standard deviation (intralaboratory standard deviation of reproducibility)" to explain and indicate the use of the name "reproducibility standard deviation in the laboratory" s reason;
- Amend the 5.2.2 "Note 1" and "Note 2" in ISO/T S19036.2006 to the body content;
- The numerical relationship between "sR" and "sIS" "scond" and "sres" in Tables A.1 to A.5 of ISO/T S19036.2006 and the calculation method of "scond" "sres" is expressed.

This standard also made the following editorial changes.

- Use "a", "b", "c" and "d" to replace the English version of ISO/T S19036..2006 Appendix Table A.1~Table A.5 "i", "i", "ii" and "iv" in the column "(category)" to match the symbols used in the classification of the A.2.2 matrix;
- Remove the preamble and preface of the international standard.

This standard is proposed and managed by the National Certification and Accreditation Supervision Committee.

This standard was drafted. Shandong Entry-Exit Inspection and Quarantine Bureau of the People's Republic of China.

1 Scope

This standard specifies the measurement uncertainty and indication method for the quantitative detection of food microorganisms.

This standard applies to food, as well as measurement uncertainty assessment for quantitative analysis of environmental samples used to monitor processed and stored foods.

It is also applicable to the instrumental quantitative analysis method that can replace the conventional colony counting method of microorganisms.

This standard does not apply to the most probable value counting methods and analytical methods for low levels of microorganisms.

The measurement uncertainty assessment for the quantitative analysis of animal feed products is also referred to this standard.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article.

Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB/Z 22553-2010 Guidelines for assessing measurement uncertainty using estimates of repeatability, reproducibility and accuracy
GB/T 27025-2008 General requirements for testing and calibration laboratory capabilities
ISO 16140:2003 Microbiological alternative method validation protocol for food and animal feed (Microbiology of food and animal feeding stuffs - Protocol for the validation of alternative methods)
ISO/IEC Guide 98-3:2008 Uncertainty of measurement - Part 3. Guidance for the indication of uncertainty in measurement (GUM).

1995, Guide to the expression of uncertainty in measurement)

3 Terms and definitions

The following terms and definitions apply to this document.

Measurement uncertainty (of measurement) A parameter associated with the measurement

to characterize the dispersion imparted to the measured value.

Note 1: This parameter can be the standard deviation or its multiple, or the half width of the confidence interval for a given confidence probability.

Note 2: Measurement uncertainty is generally composed of many components, some of which can be measured by the statistical distribution of the measurement results, and the experimental standard Deviation characterization; while other components can be measured based on a hypothetical probability distribution of experience or other information, and also characterized by standard deviation.

The measurement result is the best estimate of the measured value. All components of uncertainty are related to dispersion, including those affected by the system.

The component of birth (as related to the correction value and the reference measurement standard).

Standard uncertainty $u(x_i)$ Measurement uncertainty expressed in standard deviation.

Synthetic standard uncertainty combined standard uncertainty $U_c(y)$ when the measurement result is obtained from several other quantities, the standard uncertainty calculated by the variance and covariance of the other quantities.