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

GB/T 45316-2025

Determination of piperine content - Spectrophotometric method

胡椒碱含量的测定分光光度法

(English Translation)

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

This document is a modification of ISO 5564:1982 "Black pepper and white pepper, whole or crushed - Determination of piperine content by spectrophotometry" Law".

The technical differences between this document and ISO 5564:1982 and their reasons are as follows.

--- Changed the requirements for "Instrument" and added the accuracy and specification requirements for the instrument (see Chapter 6, Chapter 6 of ISO 5564:1982).

Chapter) to meet the actual use needs of this document in my country;

--- Replaced ISO 948 (see Chapter 7) with normative references GB/T 12729.2 and replaced ISO 948 (see Chapter 7) with normative references GB/T 12729.3 Replaced ISO 2825 (see 8.2) and replaced ISO 939 (see Chapter 9) with the normative reference GB 5009.3 to adapt to our the technical conditions of the country increase operability;

--- Changed the "General Principles" (see 8.1, Chapter 8 of ISO 5564:1982) to eliminate possible disputes in actual use;

--- Changed the "weighing" requirement (see 8.3, 8.2 of ISO 5564:1982) to meet the actual use needs of this document in my country;

--- Added the requirement for retaining significant figures (see Chapter 9, Chapter 9 of ISO 5564:1982) to meet the requirements of the implementation of this document in my country.

actual use needs;

--- Increased the detection limit requirements (see Chapter 10, Chapter 10 of ISO 5564:1982) to meet the actual use of this document in my country.

Use demand.

The following editorial changes were made to this document.

--- In order to coordinate with the existing standard, the name of the standard is changed to "Determination of piperine content by spectrophotometric method";

--- Changed the wording of chapter "Scope" and 6.1.

1 Scope

This document describes a method for the determination of piperine content using a spectrophotometer.

This document is applicable to the determination of piperine content in black pepper, white pepper and black and white pepper powder.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document.

For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to this document.

GB 5009.3 National Food Safety Standard Determination of Water Content in Food GB/T 12729.2 Sampling methods for spices and condiments GB/T 12729.3 Preparation of powder samples for analysis of spices and condiments (GB/T 12729.3-2020, ISO 2825.1981,MOD)

3 Terms and definitions

The following terms and definitions apply to this document.

Piperine content

The amount of pungent compounds (piperine and analogues) in the product.

Note: Expressed as mass fraction.

4 Principle

The pungent compounds of the samples were extracted with ethanol and measured by spectrophotometry at 343 nm.

5 Reagents

Ethanol. 95% (volume fraction), analytical grade.

6 Instruments

6.1

Extraction device. including relevant components connected with frosted glass nozzle, including a 100 mL round bottom flask, a reflux condenser, an explosion-proof Glass beads.

6.2

Volumetric flask. with a capacity of 25mL, 50mL and 100mL, wrapped with aluminum foil or black paper strips.

6.3

Filter paper.

6.4

Aluminium foil or black paper strips.