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

GB/T 45625-2025

**Determination of hydroxymethyl furfural content in royal jelly
and royal jelly lyophilized powder - High-performance liquid
chromatography method**

蜂王浆及蜂王浆冻干粉中羟甲基糠醛含量的测定 高效液相色谱法

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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 was proposed by the China Federation of Supply and Marketing Cooperatives.

This document is under the jurisdiction of the National Technical Committee on Standardization of Bee Products (SAC/TC601).

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Introduction

The issuing agency of this document draws attention to the fact that when declaring compliance with this document, Chapters 4 to 10 may be involved in relation to royal jelly and its dry powder.

Use of patents related to methods for detecting hydroxymethylfurfural content.

The issuing organization of this document takes no position on the authenticity, validity and scope of this patent.

The patent holder has promised to the issuing agency of this document that he is willing to cooperate with any applicant under reasonable and non-discriminatory terms and conditions.

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Please note that in addition to the above patents, some of the contents of this document may still involve patents. The issuing agency of this document does not assume the responsibility for identifying patents. responsibility.

Hydroxymethylfurfural in royal jelly and royal jelly freeze-dried powder Determination of content by HPLC

1 Scope

This document describes the HPLC method for the determination of hydroxymethylfurfural in royal jelly and royal jelly freeze-dried powder.

This document is applicable to the determination of hydroxymethylfurfural content in royal jelly and royal jelly freeze-dried powder.

2 Normative references

GB/T 6682

3 Terms and definitions

There are no terms or definitions that require definition in this document.

4 Principle

The sample was dissolved in ammonia solution, hydroxymethylfurfural was extracted with ethyl acetate, centrifuged, the supernatant was evaporated to dryness, ultrasonically dissolved, and filtered through a membrane.

Detection was by high performance liquid chromatography and quantification was by external standard method.

5 Reagents and Materials

Unless otherwise specified, only reagents of analytical grade and first-grade water conforming to GB/T 6682 were used in the analysis.

5.1 Reagents

5.1.1 Ammonia water ($\text{NH}_3\text{-H}_2\text{O}$). containing 25%~28% ammonia (NH_3).

5.1.2 Ethyl acetate ($\text{CH}_3\text{COOC}_2\text{H}_5$).

5.1.3 Phosphoric acid (H_3PO_4). chromatographically pure, with a content of not less than 85%.

5.1.4 Methanol (CH_3OH). chromatographically pure.

5.1.5 Anhydrous sodium sulfate.

5.2 Reagent preparation

5.2.1 Phosphoric acid solution (0.4%, volume fraction). Take 4 mL of phosphoric acid (5.1.3) and dilute to 1000 mL with water.

5.2.2 Ammonia solution (1.5%, volume fraction). Take 1.5 mL of ammonia solution (5.1.1) and dilute to 100 mL with water.

5.2.3 Methanol solution (6%, volume fraction). Take 6 mL of methanol (5.1.4) and dilute to 100 mL with water.