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

GB/T 17816-2025

Replacing GB/T 17816-1999

Determination of total ascorbic acid in feeds

饲料中总抗坏血酸的测定

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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 replaces GB/T 17816-1999 "Determination of total ascorbic acid in feeds - o-phenylenediamine fluorescence method" and GB/T 17816- Compared with.1999, in addition to structural adjustments and editorial changes, the main technical changes are as follows:

--- Changed the detection limit of o-phenylenediamine fluorescence method and added the limit of quantification (see Chapter 1, Chapter 1 of the.1999 edition);

--- Added high performance liquid chromatography determination method (see Chapter 4);

--- Changed the calculation and presentation of o-phenylenediamine fluorescence analysis results (see 5.5.4, Chapter 8 of the.1999 edition). Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents. This document is proposed and coordinated by the National Feed Industry Standardization Technical Committee (SAC/TC76). This document was drafted by: Guoliang Wuhan Scientific Research and Design Institute Co., Ltd. The main drafters of this document are. Shao Rui, Du Yan, Chen Xiyu, Wang Boyuan, Chen Mengying, Ma Shenghui, Wang Zhongyan, Yan Hongyue, Su Yongbo, Qiu Huijuan, Chang Xiaohong, Wei Shuangzheng, and Liu Xiaomin. The previous versions of this document and the documents it replaces are as follows:

---First published in.1999 as GB/T 17816-1999;

---This is the first revision. Determination of total ascorbic acid in feed

1 Scope

GB/T 17816-2025 is the Chinese national standard on determination of total ascorbic acid in feeds, in the field of agriculture. The /T suffix marks it as a recommended standard: it is

not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 1 August 2025 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 February 2026. Classification: ICS 65.120, CCS B46. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This document describes a high performance liquid chromatography and o-phenylenediamine fluorometric method for the determination of total ascorbic acid in feeds. This document's high performance liquid chromatography method is applicable to the determination of L-ascorbic acid, D-isoascorbic acid in compound feed, concentrated feed, and additive premix feed. The o-phenylenediamine fluorescence method is applicable to the determination of total ascorbic acid in compound feed, concentrated feed, and additive premix feed. Determination of. This document is not applicable to the determination of total ascorbic acid in feeds added in the form of esterified ascorbic acid. The detection limits of L-ascorbic acid and D-isoascorbic acid by HPLC in this document are both 5 mg/kg, and the quantification limits are both The detection limit of o-phenylenediamine fluorescence method is 8 mg/kg, and the quantification limit is 25 mg/kg.

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/T 6682 Specifications and test methods for water used in analytical laboratories

GB/T 20195 Preparation of animal feed samples

3 Terms and Definitions

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

4 High-performance liquid chromatography

4.1 Principle Ascorbic acid in the sample was extracted with metaphosphoric acid solution and determined by high performance liquid chromatography using the external standard method.

4.2 Reagents or materials Unless otherwise specified, only analytical grade reagents were

used.

4.2.1 Water. GB/T 6682, Grade 1.

4.2.2 L-cysteine. high purity.

4.2.3 Potassium dihydrogen phosphate. chromatographically pure.

4.2.4 Hexadecyltrimethylammonium bromide. chromatographically pure.

4.2.5 Phosphoric acid. chromatographically pure.

4.2.6 Methanol. chromatographic grade.

4.2.7 Metaphosphoric acid solution (20 g/L). Weigh 20 g of metaphosphoric acid, dissolve it in water and dilute to 1 L, mix well. Store at 4°C. The expiration date is 1 month.

4.2.8 Trisodium phosphate solution (100 g/L). Weigh 100 g of trisodium phosphate, dissolve it in water and dilute to 1 L, then mix thoroughly.