

ICS 65.120

CCS B 46



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

GB/T 20194-2018

Replacing GB/T 20194-2006

Determination of starch in feeds -- Polarimetry

Issued on: May 14, 2018

Implemented on: December 1, 2018

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

Table of Contents

Foreword

1 Scope

2 Normative references

3 Terms and definitions

4 Principle

Foreword

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

This standard replaces GB/T 20194-2006 "Determination of Starch Content in Feeds by Rotation".

Compared with GB/T 20194-2006, the main technical contents of this standard are as follows.

--- The consistency relationship between this standard and ISO 6493.2000 is adjusted to be modified;

--- "Scope" added "This standard applies to feed ingredients, compound feed, concentrate feed, concentrate feed and additive premix

Determination of medium starch content" (see Chapter 1, Chapter 1 of the.2006 edition);

--- Added "GB/T 601" to the "normative reference document" (see Chapter 2, Chapter 2 of the.2006 edition);

--- Amend zinc acetate trihydrate to zinc acetate dihydrate (see 5.6.2, 5.6.2 of.2006 edition);

--- Clarified hydrochloric acid to be calibrated (see 5.3 and 5.4,.2006 editions 5.4 and 5.5);

--- Fixed the calculation formula (see Chapter 9, Chapter 10 of the.2006 edition);

--- Increased the specific rotation of barley (see Chapter 9).

This standard uses the redrafting method to modify the use of ISO 6493.2000 "measurement of the amylose content of animal feed".

This standard is structurally modified compared to ISO 6493.2000. Chapters of this standard and ISO 6493.2000 are listed in Appendix A.

The bar number comparison list.

There are technical differences between this standard and ISO 6493.2000. Appendix B

gives the corresponding technical differences and their causes.

Watch list.

This standard is proposed and managed by the National Feed Industry Standardization Technical Committee (SAC/TC76).

This standard was drafted. Guoliang Wuhan Scientific Research and Design Institute Co., Ltd. [National Feed Quality Supervision and Inspection Center (Wuhan)].

1 Scope

This standard specifies the optical rotation method for the determination of starch content in animal feed.

This standard applies to the determination of starch content in feed ingredients, compound feeds, concentrate feeds, concentrate feeds and additive premixes.

This standard does not apply to products containing substances other than starch that are optically active during the analysis and are insoluble in 40% ethanol.

Products such as potato pulp, silk, leaves, roots, crowns of yeast, yeast, soy products, lupins and products rich in glucose (such as chicory roots and chrysanthemums)

?), at this time, the starch content can be determined by an enzymatic method.

This standard does not apply to the quantitative determination of starch with more than 40% amylose, such as high linear corn starch HylonVII.

Caution - When the product is treated, the temperature and humidity are too high, and the starch measurement may be too low.

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.

Preparation of standard solution by GB/T 601 chemical reagent titration analysis (capacity analysis)

GB/T 6003.1 wire woven mesh test sieve (GB/T 6003.1-2012, ISO 3310-1..1990, IDT)

GB/T 6682 Analytical laboratory water specifications and test methods (GB/T 6682-2008, ISO 3696.1987, IDT)

GB/T 14699.1 Feed sampling (GB/T 14699.1-2005, ISO 6497.2002, IDT)

Preparation of GB/T 20195 animal feed samples (GB/T 20195-2006, ISO 6498.1998, IDT)

3 Terms and definitions

The following terms and definitions apply to this document.

3.1

Starch starch

A branched long chain (amylose) of a glucose unit linked by an alpha-1,4 bond and/or an alpha-1,6 of a glucose unit linked by an alpha-1,4 bond

A natural plant-derived polymer composed of long chain branches (amylopectin).

3.2

Starch content starch content

The mass fraction of starch and its polymer degradation products insoluble in 40% ethanol determined according to this standard.

Note. Starch content is expressed in grams per kilogram.

4 Principle

The sample was decomposed with dilute hydrochloric acid to gelatinize and partially hydrolyze the dissolved starch. Determine the total optical rotation of the clear solution and dissolve it in 40% B

The other substances of the alcohol and the optical rotation caused by the dilute hydrochloric acid treatment were corrected. Multiply the corrected polarimeter with a known coefficient

Calculated starch content.