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

GB/T 21119-2026

Replacing GB/T 21119-2007

**Inspection of grain and oils - Determination of the
sedimentation index of wheat - Zeleny test**

粮油检验 小麦沉淀指数测定 Zeleny法

(English Translation)

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document supersedes GB/T 21119-2007 "Determination of Wheat Sedimentation Index - Zeleny Test" and is consistent with GB/T 21119-2007.

Compared to previous versions, aside from structural adjustments and editorial changes, the main technical changes are as follows.

- The reagents have been changed (see Chapter 5, Chapter 5 of the 2007 edition);
- The instruments and apparatus have been changed (see Chapter 6, Chapter 6 of the 2007 edition);
- Added "Wheat Flour Sample Preparation" (see Chapter 8);
- The section "Determination of Ash Content in Wheat Flour" (see section 8.2 of the 2007 edition) has been deleted;
- The operating procedures have been changed (see Chapter 9, Chapter 8 in the 2007 edition);
- The presentation of the results has been revised (see Chapter 10, Chapter 9 in the 2007 edition);
- Precision has been revised (see Chapter 11, Chapter 10 in the 2007 edition);
- The test report has been deleted (see Chapter 11 of the 2007 edition).

This document is modified to adopt ISO 5529:2007 "Determination of Sedimentation Index

of Wheat - Zeleny Test".

This document has undergone the following structural adjustments compared to ISO 5529:2007.

---Chapter 5, Reagent Preparation, has been revised. Sections 5.1.3, 5.1.4, and 5.1.5 retain only the reagents required for preparing solutions, and section 5.1.6 has been added.

---Sections 5.2.3 to 5.2.5 have been added, with subsequent section numbers following accordingly, among which.

- 5.2.3 The preparation of sodium hydroxide standard solution corresponds to the solution preparation content in 5.1.3 of ISO 5529:2007;

- 5.2.4 Bromophenol blue solution corresponds to the solution preparation content in 5.1.4 of ISO 5529:2007;

- 5.2.5 Phenolphthalein solution corresponds to the solution preparation content in 5.1.5 of ISO 5529:2007.

---6.6 corresponds to 6.6 and 6.7 in ISO 5529:2007, with subsequent bar numbers moved forward.

---Chapter 12 of ISO 5529:2007 has been removed.

The technical differences between this document and ISO 5529:2007, and the reasons therefor, are as follows.

---The water requirements have been changed, replacing ISO 3696 with the normatively referenced GB/T 6682 (see Chapter 5), to comply with domestic laboratory standards.

Current water usage situation;

---The ethanol concentration specification has been added (see 5.1.6) to facilitate operation;

---The volume fraction of lactic acid (2-hydroxypropionic acid) has been changed from 90% to $\geq 85\%$ (see 5.1.1), conforming to domestic standards for lactic acid (2-hydroxypropionic acid).

Current status of lactic acid reagents; when preparing lactic acid stock solution, the amount of lactic acid (2-hydroxypropionic acid) was adjusted from 238 mL to 250 mL (see 5.2.1), and the clause regarding the thermal dissociation of lactic acid association molecules has been revised into a footnote, which aligns with the current domestic situation.

---Added standard solution preparation and test methods, and added methods for solution preparation and titration tests using the methods specified in GB/T 601.

(See Chapter 5), which standardizes the determination of the concentration of lactic acid stock solutions;

---The requirements for metal woven screens have been changed, replacing ISO 565 (see 6.2) with the normatively referenced GB/T 6005, in accordance with domestic standards.

Prepare for the current situation;

---The requirements for single-mark pipettes have been changed, replacing ISO 648 (see 6.9) with the normatively referenced GB/T 12808, in accordance with domestic standards.

Current status of laboratory equipment;

---The sampling requirements have been changed. Sampling should now be conducted in accordance with GB/T 5491, replacing the informative references with the normative reference of GB/T 5491.

The ISO 13690 standard used (see Chapter 7) is consistent with existing domestic grain storage practices.

---The method for determining moisture content has been changed, and the method specified in GB 5009.3 has been added for determining moisture content (see section 9).

Chapter), in line with the current domestic situation;

---The footnotes of ISO 5529:2007 have been adjusted to the content of the clauses, and the normative reference to GB 5009.3 has been added, while the following have been deleted.

ISO 712 (see 9.1) provides a formula for calculating sample weight to ensure consistent dry matter weight across different batches of samples.

---The description of the results has been revised (see Chapter 10) to conform to the description of domestic grain and oil inspection results;

---The "Test Report" section (see Chapter 12 of ISO 5529:2007) has been removed to align with domestic standards;

---The normative annex "Grinding and sieving of samples" in ISO 5529:2007 has been changed to an informative annex, and some content has been modified.

(See Appendix A).

The following editorial changes have been made to this document.

---To harmonize with existing domestic standards, the standard name has been changed to "Determination of Wheat Sedimentation Index by Zeleny Method in Grain and Oil Inspection";

---The formula representation and numbering have been changed, and all formulas have been uniformly numbered.

Please note that some content in this document may involve patents. The issuing

organization of this document assumes no responsibility for identifying patents.

This document was proposed by the National Food and Strategic Reserves Administration.

This document is under the jurisdiction of the National Technical Committee on Standardization of Grain and Oil (SAC/TC270).

1 Scope

This document describes a method for determining the sedimentation index of wheat using the Zeleny method.

This document applies to the determination of the sedimentation index of common wheat (*Triticum aestivum* L.).

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included.

For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies.

This document.

GB/T 601 Preparation of Standard Titration Solutions for Chemical Reagents GB 5009.3 National Food Safety Standard - Determination of Moisture in Food GB/T 5491 Sampling and Divided Sampling Methods for the Inspection of Grains and Oils GB/T 6005 Basic dimensions of sieve openings for metal wire woven mesh, perforated plates and electroformed thin plates (GB/T 6005-2008, ISO 565:1990, MOD) GB/T 6682 Specifications and test methods for water used in analytical laboratories (GB/T 6682-2008, ISO 3696:1987, MOD) GB/T 12808 Laboratory Glassware - Single-mark Pipettes

3 Terms and Definitions

The following terms and definitions apply to this document.

Sedimentation Index

This document defines the volume of precipitate obtained by suspending wheat flour, prepared from wheat, in a lactic acid solution under the conditions specified in this document.

4 Principles

Wheat protein has the property of swelling in acidic media. Wheat samples were processed under specified grinding and sieving conditions to produce wheat...