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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 5510-2024

Replacing GB/T 5510-2011

Inspection of grain and oils-Determination of fat acidity of cereals and cereal products

粮油检验 谷物及制品脂肪酸值的测定

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Standardization Administration of the PRC

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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 5510-2011 "Inspection of grains and oils - Determination of fatty acid values in grains and oils" and is consistent with GB/T 5510-2011.

In addition to structural adjustments and editorial changes, the main technical changes are as follows.

- Changed the scope of application (see Chapter 1, Chapter 1 of the 2011 edition);

- Deleted the term fatty acid value (see 3.1 of the 2011 edition);

- Deleted the benzene extraction method (see Chapter 4 of the 2011 edition);

- Deleted the petroleum ether extraction method (see Chapter 5 of the 2011 edition);

- Added manual titration method (see Chapter 5);

- Added automatic potentiometric titrator method (see Chapter 6);

- Added the automatic photometric titrator method (see Chapter 7);

- Added the automatic image analysis titrator method (see Chapter 8).

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 was proposed by the State Administration of Grain and Material Reserves.

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

This document was drafted by: National Grain and Material Reserves Administration Standard Quality Center, Kunming Grain, Oil and Feed Product Quality Inspection Center,

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The previous versions of this document and the documents it replaces are as follows.

- First published in 1985 as GB/T 5510-1985, first revised in 2011;

- This is the second revision.

Grain and oil inspection - Determination of fatty acid value of cereals and their products

1 Scope

This document describes the determination of fatty acid values in cereals and their products by manual titration, automatic potentiometric titrator, automatic photometric titrator and automatic There are four methods of dynamic image analysis titrator method.

This document applies to rice and other rice-based grains and their milled products, wheat and other wheat-based grains and their milled products, corn and other coarse grains and Determination of fatty acid value in its milled products.

The automatic photometric titrator method and automatic image analysis titrator method in this document are not applicable to dark-colored valleys such as red, purple, green, and black.

Determination of fatty acid value in vegetables and their milled products.

2 Normative references

GB/T 601

GB/T 5490-2010

GB/T 5497

GB/T 5507

GB/T 6682

3 Terms and definitions

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

4 General Provisions

4.1 Unless otherwise specified, all reagents used in this document are of analytical grade and the water is Grade III water as specified in GB/T 6682.

4.2 Potassium hydroxide standard stock solution (solvent is water) should be stored at 10°C~30°C for no more than 6 months if sealed.

The storage time of used products is generally no more than 2 months (close the bottle cap immediately after pouring out the solution); 0.01 mol/L potassium hydroxide standard titration solution The concentration should be within the range of ±0.5% of the specified concentration; 0.01 mol/L aqueous potassium hydroxide standard titration solution at 25°C or below The maximum storage time should not exceed 30 days (close the bottle cap immediately after pouring out the solution). If the storage conditions do not meet the requirements, prepare it before use.

0.01mol/L ethanol solvent potassium hydroxide standard titration solution should be prepared before use; when a standard titration solution other than that specified in this document is required In any case, if the standard solution becomes turbid, precipitates, changes color, etc., it should be immediately diluted.

Stop using, re-prepare and recalibrate.

4.3 The ambient temperature during the measurement process should be controlled between 15°C and 25°C.

4.4 After the sample is ground, it should be extracted with the extraction solution as soon as possible. The ground sample should not be left for more than 2 hours.

Titration. If titration fails in time, the separated extract should be sealed and placed in a 4°C refrigerator for no more than 24h.

4.5 Grains with a moisture content above 18% should be pre-dried according to the double drying method of GB/T 5497 before being milled.