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Milk and milk products — Sensory analysis —

Part 2: Methods for sensory evaluation

PROOF/ÉPREUVE

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Forewords

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 34, *Food products*, Subcommittee SC 5, *Milk and milk products*, and the International Dairy Federation (IDF). It is being published jointly by ISO and IDF.

This second edition cancels and replaces the first edition (ISO 22935-2 | IDF 99-2:2009), which has been technically revised.

The main changes are as follows:

— changes have been made in the “International tables of common attributes” (see Annex A);

— the scope has been widened from milk powder to milk-based powders, and from liquid milk to milk-based liquids.

A list of all parts in the ISO 22935 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user’s national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

IDF (the International Dairy Federation) is a non-profit private sector organization representing the interests of various stakeholders in dairying at the global level. IDF members are organized in National Committees, which are national associations composed of representatives of dairy-related national interest groups including dairy farmers, dairy processing industry, dairy suppliers, academics and governments/food control authorities.

ISO and IDF collaborate closely on all matters of standardization relating to methods of analysis and sampling for milk and milk products. Since 2001, ISO and IDF jointly publish their International Standards using the logos and reference numbers of both organizations.

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This document was prepared by the IDF *Standing Committee on Statistics and Automation* and ISO Technical Committee ISO/TC 34, *Food products*, Subcommittee SC 5, *Milk and milk products.* It is being published jointly by ISO and IDF.

The work was carried out by the IDF/ISO Action Team S17 of the *Standing Committee on Statistics and Automation* under the aegis of its project leader Dr H. Kraggerud (NO).

Introduction

The purpose of the ISO 22935 | IDF 99 series is to give guidance on methodology for sensory analysis and the use of a common nomenclature of terms for milk and milk products.

To achieve that, the ISO 22935 | IDF 99 series is divided into three parts.

ISO 6658 should be consulted for an overview of sensory methods other than the one provided in ISO 22935-3 | IDF 99-3.

The principles described are largely derived from various International Standards on the topic.

Milk and milk products — Sensory analysis —

Part 2:
Methods for sensory evaluation

1 Scope

This document specifies recommended methods for the sensory evaluation of specific milk and milk products. It specifies criteria for the sampling and preparation of samples and the assessment of the samples.

This document is suitable for application in conjunction with the sensory methodologies outlined in ISO 22935-1 | IDF 99-1 and other ISO or IDF sensory methodologies for specific situations and products.

Annex A provides international tables of common attributes, including terms in the official ISO languages English and French as well as equivalent terms in German and Spanish.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

4 Principle

General practices are specified for the sensory evaluation of dairy products by trained assessors. These practices can be used with the scoring methodology outlined in ISO 22935-3 | IDF 99-3, profiling and discrimination tests.

5 Supervision

5.1 Panel leader responsibilities

A panel leader, who is familiar with sensory evaluation of the products, should be responsible for the entire evaluation, and in particular should ensure that:

a) testing conditions are appropriate;

b) correct evaluation forms are supplied;

c) correct sensory protocols are used;

d) panel results are monitored;

e) good records are maintained of panel attendance, panel performance, session objectives, samples and sample preparation methods, response forms used, session results, comments on results, attribute definitions and references;

f) communication is maintained with the site manager or appropriate personnel.

5.2 Panel leader requirements

The panel leader should:

a) understand sensory evaluation principles;

b) understand and have experience with the specific products being evaluated;

c) be committed to a sensory quality assurance programme.

6 Preparing for a panel

General steps for the preparation of a panel include:

a) the invitation of panellists to the panel, informing them of the date, time and location of the session;

b) the choice of samples for assessment in the panel session, and their preparation using specified standard procedures;

c) labelling of samples with three-digit random numbers to disguise the sample origin (including the assignment of random codes, using a random number table or computer program, to each sample and then labelling report forms and sample containers);

d) the performance of panel evaluations (assessments) in booths or another suitable environment and ensuring that pens, palate cleansers and spittoons are available in readiness for evaluations;

e) checking that data are complete once assessors have completed their evaluations.

7 Documents

Necessary documents for the sensory evaluation of the various products should be available, e.g. the following:

a) recommended methods;

b) product attributes and attribute definitions;

c) product specifications;

d) food safety documentation.

8 Test room

More detailed information for a sensory evaluation area can be found in ISO 8589. Some general suggestions include provision in the test room of:

a) walls and ceilings preferably of light (off-white or light neutral grey) and matt colours, avoiding unnecessary decorations;

b) dividers between the places for each assessor for seated assessments;

c) tabletops and dividers of a matt, light neutral grey colour;

d) lighting free from strong shadows, with a colour temperature of 6 500 K, of constant and uniform intensity with illuminance between 800 lx and 1 500 lx;

e) constant temperature;

f) an environment free from foreign odours;

g) a noise level maintained at a minimum during assessments;

h) sheltering of any sample preparation area from the assessors, when it is necessary for sample preparation to take place in the assessment room;

i) maximum convenience to assessors, especially with respect to temperature and humidity;

j) regular monitoring of equipment and environmental conditions.

9 Recommended method for sensory evaluation of butter

9.1 Applicability

This method is intended to provide a general basis for the sensory evaluation of butter.

The provisions in the method specified in this clause are applicable to butter. However, they can be adapted to include anhydrous milk fat, milk fat, anhydrous butter oil, butter oil, blended spread and margarines.

9.2 Sampling and preparation of the sample

Accepted standard preparation methods should be followed, except where a customer requires an alternative preparation methodology to test a product for their specific use.

For bulk butter, a test sample should be taken with a butter trier (see ISO 707 | IDF 50) for sensory evaluation. For butter in retail packaging, an adequate number of packages should be made available.

Before an evaluation, test samples should be kept at the temperature mentioned on the packages or laid down by the customer or in product specifications.

During the evaluation, the butter should have a temperature of 14 °C ± 2 °C. Temperatures outside this range prevent a reliable evaluation of butter.

9.3 Apparatus and materials

The apparatus as specified in the evaluation method chosen and, in particular, the following should be used.

9.3.1 Butter trier.

9.3.2 Incubator or chiller.

9.3.3 Thermometer.

9.3.4 Container/crease.

9.3.5 Greaseproof paper.

9.3.6 Knives or cutting wire of stainless steel.

9.3.7 Spatulas.

9.3.8 Indicator paper for determination of water.

9.3.9 Palate cleansers.

EXAMPLE Water at 30 °C to 40 °C.

9.3.10 Glasses.

9.3.11 Sampling cups.

9.4 Assessment

9.4.1 Appearance

Examine the following main features: colour, visible purity and water dispersion.

9.4.2 Odour and flavour

Carry out a sensory evaluation of odour and flavour by smelling and tasting the product.

9.4.3 Consistency

Carry out a sensory evaluation of the following main features: firmness and spreadability.

It is not always easy to distinguish clearly between “appearance” (see 9.4.1) and “consistency”. In this respect, consider a “loose” grainy structure resulting from under-working or a salve-like structure resulting from overworking: these features relate to both “appearance” and “consistency”.

9.5 Attributes

Attributes that can be utilized for the sensory analysis of butter are listed in the column named “Butter” of Tables A.1 to A.3. These attributes can be used for scoring (see ISO 22935-3 | IDF 99-3) or profiling methodologies.

10 Recommended method for sensory evaluation of milk-based powder

10.1 Applicability

This method is intended to provide a general basis for the sensory evaluation of milk-based powder.

The provisions in the method specified in this clause are applicable to milk-based powder including, for example, cream powder, whey powder, lactose, buttermilk powder and powdery infant formula.

10.2 Sampling and preparation of the test sample

Accepted standard preparation methods should be followed, except where a customer requires an alternative preparation methodology to test a product for their specific use.

For bulk powder, a test sample of at least 250 g (see ISO 707 | IDF 50) should be made available for sensory evaluation. For powder in retail packages, an adequate number should be supplied.

The available test samples should be adequate for the preparation of reconstituted milk for evaluation, possible re-evaluation by the panel, and an appropriate quantity of undissolved powder to follow the reconstituted product for evaluation.

