INTERNATIONAL STANDARD

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Durum wheat semolina and alimentary pasta — Estimation of cooking quality of alimentary pasta by sensory analysis —

Part 1: Reference method

Semoule de blé dur et pâtes alimentaires — Appréciation de la qualité culinaire des pâtes par analyse sensorielle —

Partie 1: Méthode de référence

Reference number
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Foreword

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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).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 34, *Food products*, Subcommittee SC 4, *Cereals and pulses*.

This first edition of ISO 7304-1 cancels and replaces ISO 7304:1985, which has been technically revised.

ISO 7304 consists of the following parts, under the general title *Durum wheat semolina and alimentary pasta — Estimation of cooking quality of alimentary pasta by sensory analysis*:

— *Part 1: Reference method*

— *Part 2: Routine method*

Durum wheat semolina and alimentary pasta — Estimation of cooking quality of alimentary pasta by sensory analysis —

Part 1: Reference method

1 Scope

This part of ISO 7304 sets out a method for estimation by sensory analysis of the cooking quality of alimentary pasta. Estimation takes place through the evaluation of the following:

— firmness, by chewing;

— liveliness, by manual handling;

— starch release, by manual handling.

The method does not express a preference and only gives an estimate relating to the evaluation of the cooking of the pasta; it does not apply to small pasta shapes usually consumed in soups.

NOTE This method can be applied to all forms of alimentary pasta produced from durum wheat and to products made from common wheat or a mixture of common wheat and durum wheat as long as the appropriate national regulations allow these raw materials to be used in alimentary pasta.

This part of ISO 7304 has been specifically designed to establish the reference method with a view to the development, approval or monitoring of instrumental or practical methods of sensory analysis.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 4120, *Sensory analysis — Methodology — Triangle test*

ISO 5492, *Sensory analysis — Vocabulary*

ISO 8586, *Sensory analysis — General guidelines for the selection, training and monitoring of selected assessors and expert sensory assessors*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 5492 and the following apply.

3.1
firmness
resistance to cutting between the teeth

3.2
liveliness
ability of one strand of pasta to slide smoothly over another, which depends on the degree of adhesion

Note 1 to entry: This property can be evaluated manually by assessing the ability of the cooked pasta strands to stick to each other or to the fingers after handling (between thumb, major, and index).

3.3
starch release
state of surface breakdown of the cooked pasta accompanied by the release of starch

Note 1 to entry: This state can be evaluated visually by assessing the quantity of starch remaining on the fingers after handling (between thumb, major, and index).

3.4
optimum cooking time
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time after which the continuous white line visible at the centre of a strand of pasta during cooking disappears

Note 1 to entry: Optimum cooking time is determined by crushing using a crushing plate (6.10) in the case of long pasta or by cutting the strand at right angles with a blade (6.11) in the case of short pasta.

Note 2 to entry: By convention, the white line is considered to have disappeared when it is visible only as a row of dots.

3.5
overcooking
cooking time longer than the *optimum cooking time* (3.4) resulting from a deliberate desire to place the pasta in a critical situation in order to measure the impact on *firmness* (3.1), *liveliness* (3.2), and *starch release* (3.3)

Note 1 to entry: Such overcooking may correspond to 50 % or 100 % over the optimum cooking time (or any other factor).

4 Principle

Estimation of the three parameters mentioned in the scope by chewing and manual handling of pasta after cooking (for the optimum cooking time or until overcooked).

Sensory analysis of at most six samples presented to a panel of at least 10 qualified assessors, one after the other in random order.

5 Reagents

5.1 Water.

If tap water is used, validate the hardness thereof. If the hardness is other than French hardness 15 °f ± 1, bring it to the target value using an appropriate water softener.

If bottled water is used, obtain water with a total mineral salt content of approximately 300 mg/l.

5.2 Sodium chloride, of analytical grade.

6 Apparatus

6.1 Balance, capable of weighing to the nearest 0,01 g.

6.2 Steel containers (pan), thick-bottomed, diameter approximately 17 cm, capacity 2,5 l.

6.3 Electric hotplates, diameter approximately 19 cm, power output about 1 500 W.