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Sensory analysis — Methodology — Evaluation of food products by methods using scales

*Analyse sensorielle — Méthodologie — Évaluation des produits alimentaires par des méthodes
utilisant des échelles*

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Foreword

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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 4121 was prepared by Technical Committee ISO/TC 34, *Agricultural food products*.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

Sensory analysis — Methodology — Evaluation of food products by methods using scales

1 Scope

This International Standard specifies various tests using several types of scales by which the sensory assessment of samples may be carried out.

It is divided into three sections:

section one: Guidance and general conditions for the two types of test;

section two: Tests using interval or ratio scales, for the evaluation of food products by the allocation of scores;

section three: Tests used for evaluating specific food products, consisting of classifying these products as a whole or by their particular attributes, using ordinal scales, by means of a score or expression.

2 Field of application

The tests are applicable to the evaluation of organoleptic attributes (for example, taste, odour, texture) or of a particular attribute (for example, sweetness, peppermint strength, tenderness) of a sample.

The tests may be used in particular to determine variations in raw materials or the effect of methods of production, treatment or storage.

The number of samples and the number of attributes to be evaluated during one session depend on the nature of the products to be examined.

3 References

ISO 5492, *Sensory analysis — Vocabulary*.

ISO 5497, *Sensory analysis — Methodology — Guidelines for the preparation of samples for which direct sensory analysis is not feasible*.

ISO 6658, *Sensory analysis — Methodology — General guidance*.

ISO 8589, *Sensory analysis — General guidance for the design of test rooms*.¹⁾

4 Definitions

For the purpose of this International Standard, the definitions given in ISO 5492, and the following, apply.

4.1 ordinal scale: Scale where points are arranged according to a pre-established or continuous progression.

4.2 interval scale: Scale where numbers are chosen in such a way that equal numerical intervals are assumed to correspond to equal differences in sensory perception.²⁾

As far as instruments are concerned, the Celsius and Fahrenheit scales for measuring temperature offer two examples of this type of scale.

In the interval scale, the zero is arbitrary and the operation of multiplying by a scalar is of no significance.

4.3 ratio scale: Scale where numbers are chosen in such a way that equal numerical ratios are assumed to correspond to equal sensory perception ratios.

If, for example, for the characteristic "sweetness", sample A scored 6 and sample B scored 3, the ratio 6/3 indicates that sample A is judged to be twice as sweet as B; compared with a sample C which scored 18, A is judged to be three times less sweet than C.

In sensory evaluation, the ratio scales are generally obtained by the so-called magnitude estimation.

The numerical value given to the reference sample may be fixed or left to the choice of the assessor; in the latter case, a subsequent mathematical calculation will be required in order that the results of each assessor may be compared.

1) At present at the stage of draft.

2) However, in sensory analysis this equality is difficult to attain.