
INTERNATIONAL STANDARD



2173

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Fruit and vegetable products — Determination of soluble solids content — Refractometric method

Produits dérivés des fruits et légumes — Détermination du résidu sec soluble — Méthode réfractométrique

First edition — 1978-11-15

UDC 634.1/635.8 : 543.83 : 543.45

Ref. No. ISO 2173-1978 (E)

Descriptors : fruit and vegetable products, chemical analysis, determination of content, residues, refractometric analysis.

FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up 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.

International Standard ISO 2173 was developed by Technical Committee ISO/TC 34, *Agricultural food products*, and was circulated to the member bodies in May 1977.

It has been approved by the member bodies of the following countries :

Australia	India	Portugal
Austria	Iran	Romania
Bulgaria	Ireland	South Africa, Rep. of
Canada	Israel	Spain
Czechoslovakia	Kenya	Turkey
France	Mexico	United Kingdom
Germany, F. R.	Netherlands	U.S.A.
Ghana	New Zealand	Yugoslavia
Hungary	Poland	

No member body expressed disapproval of the document.

Fruit and vegetable products – Determination of soluble solids content – Refractometric method

1 SCOPE

This International Standard specifies a refractometric method for the determination of the soluble solids content of fruit and vegetable products.

2 FIELD OF APPLICATION

This method is particularly applicable to thick products, to products containing suspended matter and to products rich in sugars¹⁾. If the products contain other dissolved substances, the results will be only approximate; nevertheless, for convenience the result obtained by this method may be considered conventionally as the soluble solids content.

3 DEFINITION

For the purpose of this International Standard, the following definition applies :

soluble solids content determined by the refractometric method : The concentration of sucrose in an aqueous solution which has the same refractive index as the product analysed, in specified conditions of preparation and temperature. This concentration is expressed as a percentage by mass.

4 PRINCIPLE

Measurement of the refractive index of a test solution at 20 °C, using a refractometer, and use of tables correlating refractive index with soluble solids content (expressed as sucrose), or direct reading of the soluble solids content on the refractometer.

5 APPARATUS

Usual laboratory apparatus, and in particular :

5.1 Refractometer indicating the refractive index by means of a scale graduated in 0,001, in order to allow readings to be estimated to 0,000 2.

This refractometer shall be adjusted so that at 20 °C it registers for distilled water a refractive index of 1,333 0.

or

5.2 Refractometer indicating the percentage by mass of sucrose by means of scale graduated in 0,50 %, in order to allow readings to be estimated to 0,25 %.

This refractometer shall be adjusted so that at 20 °C it registers for distilled water a soluble solids (sucrose) content of zero.

5.3 Means for circulating water to maintain the temperature of the prisms of the refractometer (5.1 or 5.2) constant to within $\pm 0,5$ °C, in the neighbourhood of 20 °C, which is the reference temperature (see 7.1).

5.4 Beaker, capacity 250 ml.

6 PROCEDURE

6.1 Preparation of test solution

6.1.1 Clear liquid products

Thoroughly mix the laboratory sample and use it directly for the determination.

6.1.2 Semi-thick products (purées, etc.)

Thoroughly mix the laboratory sample. Press a part of the sample through a gauze folded in four, rejecting the first drops of the liquid and reserving the remainder of the liquid for the determination.

1) For the determination of the soluble solids content of fruit juices (not containing suspended matter) and of concentrated juices (clarified), the pycnometric method specified in ISO 2172 (at present at the stage of draft) should be applied.