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International Standard



6632

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

Fruits, vegetables and derived products — Determination of volatile acidity

Fruits, légumes et produits dérivés — Détermination de l'acidité volatile

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Foreword

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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 6632 was developed by Technical Committee ISO/TC 34, *Agricultural food products*, and was circulated to the member bodies in May 1980.

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

Australia	Ireland	Portugal
Austria	Israel	Romania
Brazil	Kenya	South Africa, Rep. of
Canada	Korea, Dem. P. Rep. of	Spain
Czechoslovakia	Malaysia	Thailand
Egypt, Arab Rep. of	Netherlands	USSR
France	New Zealand	Venezuela
Germany, F. R.	Peru	Yugoslavia
Hungary	Philippines	
India	Poland	

The member body of the following country expressed disapproval of the document on technical grounds :

USA

Fruits, vegetables and derived products — Determination of volatile acidity

1 Scope and field of application

This International Standard specifies a method for the determination of volatile acidity in fruits, vegetables and derived products.

The method is applicable to all fresh products and to products preserved without chemical preservatives, as well as to products to which sulphur dioxide has been added with or without one of the following preservatives : sorbic acid, benzoic acid, formic acid.

2 Definition

2.1 volatile acidity : All lower molecular weight fatty acids, such as acetic acid and propionic acid, in free or combined form, with the exception of formic acid.

The volatile acidity, determined by the method specified in this International Standard, is expressed either in milliequivalents per 100 ml or per 100 g of product, or in grams of acetic acid per 100 ml or per 100 g of product.

3 Principle

Acidification of a test portion with tartaric acid, entrainment of the volatile acids by steam distillation, and titration of the distillate with standard volumetric sodium hydroxide solution in the presence of phenolphthalein as indicator. If appropriate, subtraction of the volatile acidity due to added volatile acid antiseptic (preservative) compounds from the volatile acidity thus determined.

4 Reagents

All the reagents shall be of recognized analytical purity. The water used shall be distilled water or water of equivalent purity, free from carbon dioxide.

4.1 Sodium hydroxide, standard volumetric solution, $c(\text{NaOH}) = 0,1 \text{ mol/l}^{(1)}$.

Prepare just before use and check the concentration by titration immediately before use.

4.2 Phenolphthalein, 10 g/l solution in 95 % (V/V) ethanol.

4.3 Tartaric acid, crystallized.

4.4 Lime water, diluted 1 + 4.

Dilute one volume of the saturated calcium hydroxide solution (4.5) with four volumes of water. Allow the mixture to stand until calcium carbonate is precipitated and decant the limpid solution which shall be alkaline to the phenolphthalein solution (4.2).

This solution is intended for use in the steam generator (5.2.1).

4.5 Calcium hydroxide, limpid saturated solution.

5 Apparatus

Usual laboratory apparatus, and in particular :

5.1 Mechanical mill.

5.2 Apparatus for extrainment by steam distillation (see the figure), comprising the following elements :

5.2.1 Steam generator, suitable for the production of steam free from carbon dioxide, made of heat-resistant glass or metal, and of capacity about 1 500 ml.

5.2.2 Bubbler, comprising a glass tube, of diameter 30 mm and 270 mm long, the lower part of which is sealed and enlarged to form a sphere of diameter 60 mm in which the test portion is placed. The bubbler shall be placed on a metal disc having an orifice of diameter 40 mm, into which the bottom of the bubbler is fitted.

5.2.3 Fractionating column, comprising a glass tube, of diameter 20 mm and 500 mm long, inside which is a spiral-shaped stainless steel net, No. 100, with a lead of 15 mm.

Any other device having the same fractionating efficiency may be used (see the note to 5.2.4).

1) Hitherto expressed as "0,1 N standard volumetric solution".