

# codex alimentarius commission



FOOD AND AGRICULTURE  
ORGANIZATION  
OF THE UNITED NATIONS

WORLD  
HEALTH  
ORGANIZATION



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Agenda Item 5a)

CX/MAS 05/26/7-Add.2

## JOINT FAO/WHO FOOD STANDARDS PROGRAMME

### CODEX COMMITTEE ON METHODS OF ANALYSIS AND SAMPLING

Twenty-sixth Session

Budapest, Hungary, 4 – 8 April 2005

#### ENDORSEMENT OF METHODS OF ANALYSIS PROVISIONS IN CODEX STANDARDS

This document contains the replies of the 6<sup>th</sup> Session of the Committee on Milk and Milk Products (April 2004) (ALINORM 04/27/11, Appendix XXV) to the questions from the 24<sup>th</sup> Session of the Committee on Methods of Analysis and Sampling (2002) (ALINORM 03/23, Appendix VI, attached as reference).

#### FERMENTED MILKS

##### Lactic acid - Standards concerned: IDF 150:1991 and ISO 11869:1997

CCMAS requests CCMMP to indicate whether the IDF method of lactic acid determines total acidity or lactic acid as in the provision.

*Answer:*

These methods do not measure lactic acid, but titratable acidity and express the result as lactic acid.

##### Lactic acid - Standards concerned: AOAC 937.05 and AOAC 947.05

CCMAS requests CCMMP to clarify what type of method is requested since there cannot be two type II methods.

*Answer:*

Like IDF 150, AOAC 947.05 is Type I method. It determines titratable acidity and expresses the results as lactic acid. These are the only methods to be considered.

AOAC 937.05 is an older method using spectrophotometry. This should be a Type III method (this method should not be considered).

##### Microorganisms constituting the starter culture - Standards concerned: IDF 149A:1997

CCMAS requests CCMMP to clarify whether a collaborative study has been performed and what the type of the method is.

*Answer:*

The method is a Type I method. No collaborative study has been carried out. As a consequence no results are available. The Annex of the standard was prepared on the basis of methods of analyses published in scientific references. A questionnaire was also circulated among IDF/ISO/AOAC International joint action team members and comments were taken into consideration when drafting the standard (Questionnaire 1496/D of 28<sup>th</sup> May 1996).

#### Yoghurt

*Streptococcus thermophilus* & *Lactobacillus delbrueckii* subsp. *Bulgaricus*  $\geq 10^7$  cfu/g - Standards concerned IDF 117B: 1997 and ISO 7889.

CCMAS requests CCMMP to clarify whether a collaborative study has been performed and the type of the method.

*Answer:*

The method is a Type I method. A comprehensive interlaboratory test was carried out in 1978 to determine the suitability of the following culture media : skim milk, MRS and M17 media acidified at pH 5.4, Lee's medium, LAB medium, LS-differential medium (see IDF Standard 117A:1988 for method references).

The interlaboratory test was carried out on 30 samples of yogurt purchased on the local market of different countries and involved the following countries:

Italy, United Kingdom, Switzerland, Australia, Germany, Japan, Belgium.

The study has not been published in a peer-reviewed scientific journal.

Only regular reports have been drawn up by Prof. Accolas who at that time was both the IDF/ISO/AOAC E44 group Chairman and the coordinator of the interlaboratory study. Unfortunately, after so many years, it is no longer possible to publish the ring test results, because Prof. Accolas has passed away many years ago and data are no longer available.

*Note: A joint ISO 7889 | IDF 117:2003 has been published. It is recommended that this new standard be included in the provision.*

***Streptococcus thermophilus & Lactobacillus delbrueckii subsp. Bulgaricus***  $\geq 10^7$  cfu/g - Standards concerned IDF 146: 1991 and ISO 9232.

CCMAS requests CCMMP to clarify whether a collaborative study has been performed and the type of the method.

*Answer:*

The method is a Type I method. Two interlaboratory tests were carried out in 1982 (pilot test) and 1984 (Ring test) respectively. Both tests took into consideration pure strains of *S. thermophilus* and *L. delbrueckii* subsp. bulgaricus provided for by each member. The last study involved 8 different laboratories from IDF member countries (Czechoslovakia, Denmark, France, Italy, Spain, Switzerland, UK and Israel). The methods applied for the classification of the different strains are described in the Standard. The ring test results have never been published but the standard was drawn up based on this data. A summary of results is given in the Minutes of the group meeting in Milan, 11 March 1985.

*Note: Joint ISO 9232 | IDF 146:2003 has been published. It is recommended that this standard is included in the provision.*

## **INDIVIDUAL CHEESES**

### **Dry matter (Total solids) - Standards concerned: IDF 4A: 1982, ISO 5534: 1985 and AOAC 926.08**

CCMAS requests CCMMP to clarify the difference in results with the previous method

*Answer:*

The situation here is a bit confusing. First, according to the 1994 edition of Vol 13, IDF 4A and ISO 5534 were endorsed as methods for total solids in cheese, so perhaps the current status needs to be checked. Second, it's not clear what CCMAS means by the "previous method". It is assumed that the question refers to a comparison between the IDF/ISO methods and the AOAC method. The Tripartite is not aware of comparative data available for these methods. However, from a technical viewpoint we would like to point out that both the previous method and the recommended methods evaporate volatiles from the product which are then expressed as moisture. The 102 °C oven method could possibly give moisture results that are slightly too high as at that temperature there could possibly be some browning of the sample, which is an indication of a reaction between lactose and protein, which possibly could lead to some loss of lactose-bound water. However, it is considered that this is unlikely to be a significant issue because cheese contains very little lactose. To emphasise this point, it is further noted that the 102 °C method is used for a wide range of dairy products including such products as whole milk powder and skim milk powder with typical levels of lactose of 35% and 50% respectively. The previous method (vacuum oven method) could lead to results that are too low because not all types of vacuum oven allow for circulating fresh air, which means that there is a risk of saturation of the atmosphere inside the oven. Hence, the recommended method is the preferred method.

ALINORM 03/23 – APPENDIX VI

CODEX COMMITTEE ON MILK AND MILK PRODUCTS - METHODS OF ANALYSIS REFERRED BACK TO CCMMP

COMMODITY	PROVISION	METHOD	PRINCIPLE	Note	Type	Status
Fermented milks	Lactic acid	IDF 150:1991 ISO 11869:1997	Potentiometry, titration to pH 8.30	CCMMP should indicate whether the IDF method determines total acidity or lactic acid as in the provision		NE
		AOAC 937.05 AOAC 947.05	Spectrophotometry (for lactic acid in milk & milk products)	CCMMP should clarify what type method is requested since there cannot be two type II methods.	II	TE
	Microorganisms constituting the starter culture	IDF 149A:1997 (Annex A)	Colony count at 25°C, 30°C, 37°C and 45°C according to the starter organism in question	CCMMP should clarify whether a collaborative study has been performed and the type of the method.		NE
Yoghurt	<i>Streptococcus thermophilus</i> & <i>Lactobacillus delbrueckii</i> subsp. <i>Bulgaricus</i> >= 10 <sup>7</sup> cfu/g	IDF 117B:1997 ISO 7889	Colony count at 37°C	Same question as above		NE
Yoghurt	<i>Streptococcus thermophilus</i> & <i>Lactobacillus delbrueckii</i> subsp. <i>bulgaricus</i> >= 10 <sup>7</sup> cfu/g	IDF 146:1991 ISO 9232	Test for identification	Same question as above		NE
Individual cheeses	Dry matter (Total solids)	IDF 4A:1982 ISO 5534:1985 AOAC 926.08 applicable to all cheese	Gravimetry, drying at 102°C	CCMMP should clarify the difference in results with the previous method		NE