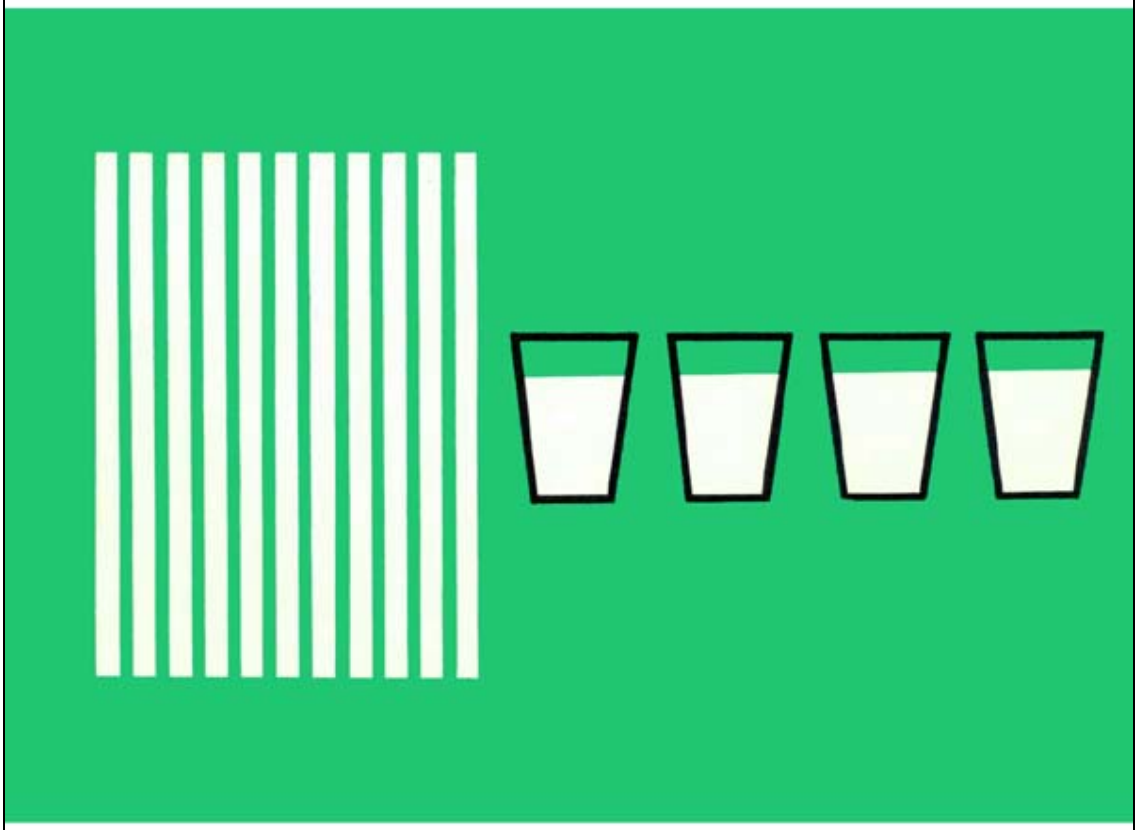
Joint FAO/WHO Food Standards Programme

JOINT FAO/WHO COMMITTEE OF GOVERNMENT EXPERTS ON THE CODE OF PRINCIPLES CONCERNING MILK AND MILK PRODUCTS

Report of the Sixteenth Session

Held in Rome, Italy, 10-15 September 1973



FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
WORLD HEALTH ORGANIZATION
Rome

CX 5/70 - 16th Session

REPORT
of the
SIXTEENTH SESSION
of the
JOINT FAO/WHO COMMITTEE OF GOVERNMENT EXPERTS ON THE CODE OF PRINCIPLES CONCERNING MILK AND MILK PRODUCTS

Held at FAO Headquarters
Rome, Italy
10-15 September 1973

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SUMMARY OF POINTS FOR ACTION BY GOVERNMENTS

1. Governments are requested to make their comments available, at the latest 15 March 1974. All communications should be sent, if possible, in duplicate and addressed to the Technical Secretary, Committee on the Code of Principles concerning Milk and Milk Products, Animal Production and Health . Division, FAO, Rome.

2. Governments may send observations regarding any matter they would wish to raise.

   Those specific points on which the Committee agreed that comments should be sought are the following:

- General Standard A-8(a) for Process(ed) - . . . . . Cheese or . . . . . Process(ed) Cheese	Governments to continue to submit their acceptances. (See 7th Edition of the Code of Principles and paras. 57 to 62 of the Report of the 15th Session)
- General Standard A-8(b) for "Process(ed) Cheese" and "Spreadable Process(ed) Cheese"	
- General Standard A-8(c) for Processed Cheese Preparations (Processed) Cheese Food and Process(ed) Cheese Spread)	
at Step 7 of the Committee's Procedure for the Elaboration of Milk and Milk Product Standards	
When considering acceptance of compositional standards A-1 to A-5, A-7 and A-10 Governments should bear in mind Decision No. 5 (see paras. 65, 67 and 70 of the Report of the 15th Session and Appendix III)	
- Compositional Standards A-1 to A-5 and A-7, redrafts at Step 7 of the above Procedure	Governments to continue to submit their acceptances or confirm their acceptances. (See 7th Edition of the Code of Principles and Appendix II and paras 12 to 15 of this Report)
- Compositional Standard A-10 for Cream Powder	Governments to continue to submit their acceptances. (See 7th Edit ion of the Code of Principles)
at Step 7 of the above Procedure	
- Compositional Standard A-11(a) for Yoghurt and Sweetened Yoghurt at Step 5 of the above Procedure (see paras 16 to 28 and 39 to 45 of this Report	Governments to comment. Governments were requested in particular to comment on the proposals of the delegates of Spain and the United States for a new wording of 4.1.1 and 4.1.2. (See paras. 40 to 42 of this Report and Appendix III-A)
- Compositional Standard A-11(b) for Flavoured Yoghurt at Step 5 of the above Procedure	Governments to comment. Governments were requested in particular -
(see paras. 16 to 27, 29 to 38 and 46 to	(i) to indicate which colours they would

49 of this Report)	propose to use and to suggest maximum levels of use for these colours and for preservatives. (ii) to comment on the proposal of the delegate of Federal Germany to amend the definition in order to leave open the possibility to include under the standard yoghurts which had been heat treated after fermentation. (See paras. 34, 36, 37 and 48 of this Report and Appendix III-3)
- Compositional Standard A-9 for Cream at Step 3 of the above Procedure	- Governments who have not yet commented to do so. (See paras. 72 to 90 of the Report of the 15th Session, Appendix VI and MDS 72/11. and para.137 of this Report)
- Compositional Standard A-12 for Edible Acid Casein at Step 3 of the above Procedure	- Governments to comment in particular on the proposal to raise the minimum protein content in the dry matter to 94% m/m and to give a list of the mineral acids used for the manufacture of caseins. (See paras. 107 to 111 and 119 of this Report and Appendix VII-A)
- Compositional Standard A-13 for Edible Caseinate at Step 3 of the above Procedure	- Governments to comment in particular on a proposal to change the pH specification (2.8) from 6.5 - 6.7 to 6.5 - 7.0, awl to give a list of the food grade alkali used for the manufacture of caseinates. (See paras. 107, 108 and 112 to 119 of this Report and Appendix VII-B)
- General Standard for Cheese A-6 redraft at Step 5 of the above Procedure	- Governments to comment. (See paras 50 to 52 and 58 of this Report and Appendix IV-A)
- Standard for Cheeses not having an International Individual Standard redraft at Step 3 of the above Procedure	- Governments to comment. (See paras 50 to 58 of this Report and Appendix IV-B)
<u>International Individual Cheese Standards</u>	
- C-1 to C-25 and C-26 to C-30 at Step 7 of the Procedure for the Elaboration of International Individual Cheese Standards	- Governments to continue to submit their acceptances. (See CAC/C1 - C25 (1972) Recommended International Standards for Cheeses and Government Acceptances and Appendices VII-A to VII-E to the Report of the 15th Session)
- Blue-veined cheeses, Cream cheese, Camembert, Brie, at Step 7 of the above Procedure	- Submitted to Governments for acceptance. (See-paras. 59 to 75, 81 to 94 of this Report and Appendices V-A to V-D)
- Hard Grating Cheese at Step 3 of the above Procedure	- Governments to comment, in particular, on (i) the-designation-of the cheese

	(ii) whether to retain the provisions. for the use of certain food additives (see paras. 95 to 106 of this Report and Appendix VI)
Standard Methods of Analysis	
- B-1 to B-8 and 3-11 to B-14	- Governments to continue to submit their acceptances
- B-10 Determination of Fat in Whey Cheese	- submitted to Governments for acceptance. (See 7 th Edition of the Code of Principles)
- B-15 Determination of Fat in Cream	
- Determination of Chloride in Cheese	Governments to comment. Government views were requested in particular on
- Determination of Foreign Fat in Milkfat (2 methods)	
- Determination of Hater, Solids not fat and) Pat in Butter (B-9)	(i) whether two methods should "be elaborated for the determination of foreign fat in milk fat, and
	(ii) the scope of work concerning detection of reconstituted milk in fluid milk products.
	(See para. 138 of this Report and Appendices IX, and X-A to X-D)
- Labelling Provisions for Recombined and Reconstituted Milk: Products	- Governments to comment on -
	(i) whether mandatory provisions for specific labelling of such products existed under national legislation or were considered to be desirable and to supply detailed information on these provisions;
	.(ii) the drafts prepared by the Secretariat as given in paras 123 to 127 of this Report
	(see paras. 120 to 127 of this Report)
- Hygienic Requirements for Milk and Milk Products	- Governments to -
	(i) comment on the desirability of (a) developing Codes of Practice, or (b) end. product specifications, or (c) a combination of both (a) and (b)
	(ii) Comment on the IDF-Code (as contained in Appendix VIII-C to this Report)
	(iii) complete the questionnaire (as contained
	(See paras. 128 to 136 of this Report and Appendices VIII-A to VIII-C)

OX 5/70-16th session
September 1973

REPORT OF THE SIXTEENTH SESSION OF THE JOINT FAO/WHO COMMITTEE OF GOVERNMENT EXPERTS THE CODE OF PRINCIPLES CONCERNING MILK AND MILK PRODUCTS

Rome, 10 - 15 September 1973

INTRODUCTION

1. The Sixteenth session of the Joint FAO/WHO Committee of Government Experts on the Code of Principles concerning Milk and Milk Products was held at FAO headquarters in Home, 10-15 September 1973. The session was attended by 110 participants including representatives and observers from 33 countries, and observers from 8 organizations (see Appendix I for the List of Participants).

2. The Sixteenth session of the Committee was convened by the Directors-General of FAO and WHO. The meeting was opened by Dr. E. M. Ojala, Assistant Director-General, Economic and Social Policy Department, who reviewed the programme of work of the Committee, the progress being made by the International Scheme for the Coordination of Dairy Development (ISCDD) and by the Codex Alimentarius Commission. The opening address was circulated as a conference room document on the request of the meeting.

3. The Committee was presided over by its Chairman, Mr. J. R. Sherk (Canada) and its two Vice-Chairmen, Dr. E. Ackermann (Switzerland) and Mr. F. S. Anderson (United Kingdom). The Joint Secretaries were Dr. F. Winkelmann and Mr. W. L. de Haas of FAO.

Election of Officers

4. The Committee unanimously elected Dr. E. Ackermann (Switzerland) Chairman of the Committee, to serve from the end of the 16th session until the end of the 17th session. The Committee also unanimously elected Mr. F. S. Anderson (United Kingdom) and Dr. T. L. Hall (New Zealand) to be first and second Vice-Chairman, respectively, both to serve from the *end* of the 16th session until the end of the 17th session. The Committee expressed its appreciation of the outgoing Chairman of the Committee and of the two Vice-Chairmen.

Adoption of Agenda

5. After some discussion the provisional agenda was adopted with some rearrangements in the order of items to be discussed. The Committee agreed with proposals to set up two working parties (i) to deal with questions related to hygiene requirements for dried milk and other milk products; and (ii) to deal with the draft standards for casein and caseinates.

ACCEPTANCES OF THE CODE OF PRINCIPLES AND ASSOCIATED STANDARDS

6. The Committee was informed of the latest position regarding government acceptances of the Code of Principles, Associated Standards and Methods of Analysis and Sampling. 71 governments had accepted the Code of Principles concerning Milk and Milk Products; on an average, some 45 governments had accepted the standard methods of analysis and sampling for milk and milk products B-l to B-5, some 16 governments the standard methods of analysis B-6 to B-8, 8 governments the standard

method of analysis B-11 and 9 governments the standard methods of analysis B-12, B-13 and B-14.

7. The current position of acceptances by governments of revised compositional standards for butter, evaporated milk, sweetened condensed milk, milk powder, whey cheese and cream powder was as follows:

Redraft of Standard	Accepted by
A-l for Butter	- 6 countries: Belgium, Finland, Fed. Rep. of Germany, Kenya, Netherlands, New Zealand
A-3 for Evaporated Milk	- 6 countries: Denmark, Finland, Fed. Rep. of Germany, Kenya, Netherlands, Switzerland
A-4 for Sweetened Condensed Milk	- 6 countries: Belgium, Finland, Kenya, Netherlands, New Zealand, Switzerland
A-5 for Milk Powder	- 6 countries: Denmark, Fed. Rep. of Germany, Kenya, Netherlands, New Zealand, Switzerland
A-7 for Whey Cheese	4 countries: Denmark, Finland, Fed. Rep. of Germany Netherlands
A-10 for Cream Powder	- 1 country: New Zealand

8. The Committee noted that the former version of these compositional standards except the new Standard A-10 had been accepted by 45 to 64 countries and supported the request made by the Secretariat that governments accept or confirm acceptance of the redrafted standards.

9. The Committee was further informed about the publication in one volume of international individual cheese standards C-1 to C-25 together with lists of countries which had accepted these standards and with the details of acceptances.

10. The Committee noted the current position regarding acceptances by governments of international individual cheese standards C-l to C-30 which is given on page 3. The Committee further noted that a new edition of the Code of Principles and associated standards had been prepared containing the redrafted standards and the Procedures of the Committee for elaborating standards. In accordance with a suggestion by the Danish delegate at the last session of the Committee the Procedure for the Elaboration of International Individual Cheese Standards had been brought in line with the Procedure for Elaborating Milk Product Standards. The Secretariat was requested to bring the terminology used for food additives in the various standards in line with the Codex Alimentarius.

Standard No. A-2 for Butter - Labelling Provisions

11. At the 14th session of the Committee the delegate of Denmark had stated that butter was often marketed without indication of the name and the address of the manufacturer, but with an authorized quality or national brand mark together with a control or serial number enabling the control authorities of the manufacturing countries to identify the manufacturer. He had therefore suggested that the labelling provisions of the standard concerning name and address should be amended so that such an authorized mark could be given instead of the name of the manufacturer, packer, etc. The

Committee had taken the view that this suggestion could apply to many food products and had therefore requested that the Codex Committee on Food Labelling (CCFL) consider the matter in relation to the General Standard for the Labelling of Prepackaged Foods, The Committee however noted that in the opinion of the CCFL (8th session - June 1973) this was a problem not generally applicable to food products. The Codex Committee on Food Labelling had therefore referred the matter back to the Milk Committee and agreed that it could be considered under the standard when it came before it for endorsement. Taking into account its decision taken at the 14th session to leave the redrafted standards for milk products unchanged for a period of at least five years, the Committee agreed to consider the Danish proposal when the standard would come up for revision. A note to this effect would be included in the 7th edition of the Code of Principles.

CONSIDERATION OF PROPOSAL TO CHANGE THE COMPOSITION AND QUALITY FACTORS OF STANDARDS FOR (i) BUTTEROIL AND (ii) ANHYDROUS BUTTEROIL AND ANHYDROUS MILKFAT, A-2

12. The Committee discussed the proposal to change the composition and quality factors to comply with the ones proposed by IDF or to adopt proposals made by the Government of New Zealand. As indicated in the report of the 15th session, para 16, the proposal of IDF was to raise the minimum milk fat level from 99.6% to 99.8% and to reduce the maximum moisture content to 0.1% for the anhydrous products. The proposal of the delegation of New Zealand was to establish three product categories (see para 19 of report of 15th session) whereby butteroil would contain a minimum of 99.2% instead of 99.3% milkfat.

DETAILS OP ACCEPTANCES OF CHEESE STANDARDS TO-DATE

Cheese Variety	Belgium	Canada	Denmark	Finland	France	F.R.G.	Ireland	Kenya	Malta	Netherlands	New Zealand	Norway	Poland	Spain	Sweden	Switzerland	Trinidad and Tobago	U.K.	U.S.A	Number of Acceptances
C-1 Cheddar		x	x	x	x	x	o			x	o	x		o	o	x	(**)	o	x	16
C-2 Danablu		x	o		x	x	o			x	x	o	x	o		x	(**)	o		13
C-3 Danbo		x	o	' x	x	x	o			x	x	o	x	x		x	(**)	x		14
C-4 Edam	o	x	o	x	x		o			o		o	x	o		x	(**)	o	x	14
C-5 Gouda	o	x	x	x	x		o			o			x	o		x	(**)	o	x	13
C-6 Havarti		x	o	x	x		o				x	o		x		x	x	x		11
C-7 Samsoe		x	o	x	x	x	o			x	x	o	x	x		x	x	x		14
C-8 Cheshire	o	x	x	x	x	x			o	x		o		o	o	x	(**)	o	x	15
C-9 Emmentaler		x	x	x	x				o	x		x	x	o		x	(**)	x	x	13
C-10 Gruyère		x	o	x	o				o	x		o	o	o		x	(**)	o	x	13
C-11 Tilsiter			o	x	x					x		x	x			x	x)	x		10
C-12 Limburger	x		o	x	x	x				x		x	x				x	x	x	11
C-13 Saint-Paul in				x	x										o	x	x	o		6
C-14 Svecia	x		o	x	x	x				x		o			o	x	x	x		11
C-15 Provolone	x		x	x	x					x						x	(**)	x	x	9
C-16 Cottage Cheese inc. Creamed Cottage Cheese	x			x	x					o									x	6
C-17 Butterkäse	o		o	x	x	x				x		x	x	x			x	x		11
C-18 Coulommiers				x	o					x		o	x	x		x	x	o		9
C-19 Gudbrandsdalsost (whey cheese)			o	x	x					x		o	x	o	o	x	x			10
C-20 Harzer Käse			x	x	x	o				x		x	x	o			x	x		10
C-21 Herrgärdsost			o	x	x					x		o		o	o		x	x		9
C-22 Hushällsost			o	x	x					x		o		o	o		x	x		9
C-23 Norvegia			o	x	x					x		o		o	o	x	x	x		10
C-24 Maribo	x		o					o						x						4
C-25 Fynbo	x		o					o						x						4
C-26 Esrom			o			x				o				x						4
C-27 Romadur			o	o		o				o			x	x						6
C-28 Amsterdam			o			x				o				x						4
C-29 Leidse			o			x				o				o						4
C-30 Friese			o			x				o				o						4

o = acceptance

x = acceptance with certain reservations

(**) = 'target acceptance' according to the Codex (**) and

x)= any cheese meeting the standard concerned could be freely distributed in Trinidad and Tobago

- The standards for Esrom, Romadur, Amsterdam, Leidse and Friese have been accepted by the Government of the Philippines.

13. The Committee, after some discussion, agreed to increase in Standard A-2 (report of the 14th session, Appendix V) the minimum milkfat content for anhydrous

milkfat and anhydrous butteroil to 99.8% and to reduce the maximum water content to a maximum of 0.1%; it further decided to leave the composition of butteroil unchanged.

14. The delegate of Hew Zealand indicated that he would have preferred for butteroil a level of *99.2%* The delegate of Belgium pointed out that he would have preferred to have one standard only, namely for anhydrous products. The delegate of Uruguay stated that he would have preferred the original proposal of the delegate of New Zealand.

Status of the Standard

15. The Committee agreed to send the standard for acceptance or confirmation of acceptance to governments and to publish it in the 7th edition of the Code of Principles. The standard is contained in Appendix II to this report.

DRAFT STANDARD A-11 FOR YOGHURT

16. The Committee had before it the Draft Standard for Yoghurt as contained in Appendix V of the Report of the 15th Session.

17. The Committee considered a proposal of the delegate of the Netherlands to split up the draft standard into a standard for plain yoghurt which should be dealt with first and a standard covering yoghurt derived from plain yoghurt, such as flavoured yoghurt and heat-treated yoghurt. The proposal was made as the delegate of the Netherlands was of the opinion that an agreement on the present draft standard would be difficult to achieve, mainly because of the widely differing views held by the various delegations concerning flavoured yoghurts.

18. The Committee agreed to examine the draft standard point by point, starting first with provisions for plain yoghurt.

Definition

19. para 1.1 - The Committee considered suggestions (i) to restrict the provision relating to the yoghurt flora to Lactobacillus bulgaricus and Streptococcus thermophilus and (ii) to delete reference to milk ingredients. As regards the latter proposal the Committee agreed to retain the list of milk ingredients.

20. As far as the yoghurt flora was concerned, some delegates were of the opinion that yoghurt was a product obtained by the action of Lactobacillus bulgaricus and Streptococcus thermophilus only, whereas other delegates felt that other suitable thermophilic cultures could also be present without changing the nature of the product. The Committee's attention was then drawn to the distinction made between essential and optional bacterial. cultures in paras 2.4 and 2.5 of the draft standard. This would enable governments in favour of yoghurt made only with the aid of Lactobacillus bulgaricus and Streptococcus thermophilus to accept the standard with more stringent requirements. The Committee, therefore, decided to leave para 1.1 unchanged.

Essential Composition and Quality Factors

21. Sweetened Yoghurt - The Committee agreed that sweetened yoghurt should be dealt with in the standard for plain yoghurt. The product was defined as follows: "Sweetened yoghurt is yoghurt to which one or more sugars only have been added". With regard to the definition of sugars, no amendments were made but it was agreed that products like sorbitol, etc. would not be regarded as sugars in the sense intended. Consequential amendments were made in para 2.2 whereby it was agreed that the compositional requirements of the sweetened product referred to the milk part.

Classification of Yoghurt according to Fat Level

22. The Committee again discussed the question of classifying yoghurt on the basis of the milkfat levels. Several delegates proposed that the minimum milkfat content for yoghurt (unqualified) should be raised above the 3.0% appearing in the present draft standard as they were of the opinion that the fat content should be at the same level as the whole milk marketed in their countries. The Committee decided, however, to leave the minimum level for the product designated "yoghurt" unqualified, unchanged at 3.0% milkfat. With regard to the medium fat level, the Committee came to the same conclusion it had reached at its 15th session, namely that no general agreement could be reached, and decided that the range would be between 0.5 and 3.0% fat. This range was to be introduced in para 2.1 as follows:

Partly Skimmed Yoghurt

Minimum milkfat content	more than 0.5% m/m
Maximum milkfat content	less than 3.0% m/m
Minimum milk solids non-fat content 8.5% m/m	

Essential Raw Materials

23. This para 2.3 was editorially amended to read:

- milk or concentrated milk
- partly skimmed milk or concentrated partly skimmed milk
- skimmed milk or concentrated skimmed milk
- cream, or
- a mixture of two or more of these products

24. The delegate of France suggested that the definition to be given to yoghurt according to its fat content as defined in para 2.1 of the standard should correspond to national practices.

25. It was proposed that the use of reconstituted raw materials should be considered. In this connection, reference was made to Decision No. 5, paras 67-70 of the report of the 15th session.

Optional Additions

26. The Committee agreed to extend the list of optional additions to include whey proteins, whey protein concentrate, water soluble milk proteins, edible casein and caseinates and also sugars in the list of optional additions.

Stabilizers

27. A number of delegates were of the opinion that the use of stabilizers in plain yoghurt was not necessary. It was stated however that, in view of the technological development in the manufacture of yoghurt and the long distances over which the product is often transported, the use of these additives might be justified. The Committee decided not to allow the use of stabilizers. The delegates of Brazil, Canada, Netherlands, the United Kingdom and the United States stated their reservations with regard to this decision.

Preservatives

28. The Committee agreed that for plain yoghurt, the addition of preservatives was not necessary.

Flavoured Yoghurt

29. The Committee agreed that the yoghurt part in flavoured yoghurts would comply with the definition as well as the essential composition and quality factors given in the draft standard for yoghurts (No. A-ll).

Definitions

30. The Committee agreed to delete from the definition of flavoured or sweetened yoghurt as given in the document governing both plain and flavoured yoghurts the reference to sweetened yoghurt (Appendix V, report of the 15th session of the Committee).

Minimum Amount of Yoghurt in Flavoured Products

31. The Committee reconsidered the minimum amount of yoghurt which should be present in the flavoured product and, after Some discussion, agreed that as suggested at its previous session, the minimum should be set at 70%.

Optional Additions

32. There were no proposals for natural ingredients in flavoured yoghurts other than those listed in para 2.5.

Flavours

33. The Committee agreed that, in addition to "essences and extracts derived from fruits and parts of fruits", the synthetic equivalents of essences could also be used as flavour substances and amended the paragraph accordingly. It was noted that the amended wording would allow for certain food additives to be added in a flavoured yoghurt that was flavoured synthetically without the addition of any natural ingredients. It was thought, however, that the labelling provisions were such that the consumer would not be deceived.

Food Colours

34. The Committee did not feel that the replies received from governments with regard to its request submitted at the last session to indicate which colours were necessary in the manufacture of flavoured yoghurt provided sufficient guidance. The delegate of Switzerland, supported by other delegates, proposed that the use of food colours should be limited to natural colours, and their synthetic equivalents. The Committee agreed not to list in the document any specific colouring substances but to request governments to indicate which colours were considered essential for use in the products in their countries and to indicate the maximum levels of use.

Stabilizers

35. With regard to the use of stabilizers, the delegates of France, Italy and Poland stated that they did not consider such an addition necessary. Other delegates stated, however, that under the conditions prevailing in their countries, stabilizers had to be added to the product and it was suggested that for the substances listed in para 3.3 a limit should be set of 0.5% with the exception of pectin and gelatine for which 1% was proposed and modified starches for which a limit of 3% was suggested. Furthermore, the inclusion of xanthan gum -in the list of stabilizers was proposed. Some delegates suggested that the quantity of stabilizers used should be linked to the quantity of flavouring substances used.

Preservatives

36. While some delegates were of the opinion that the amount of preservatives which could be tolerated in the product should be in the order of 50 ppm and should be considered to be an unavoidable carry-over from the ingredients and amounts used for flavouring, other delegates were of the opinion that the limit in the case of sorbic acid should be set much higher and could be in the range of 600 ppm (see also the discussion of the Committee at its previous session, paras 37 and 38 of the report). It was pointed out that the presence in the product of sorbic acid at a level above 500 ppm should be considered as actually preserving the product.

37. As no agreement could be reached, the Committee decided to refer the matter for further comments to governments.

38. The Working Group of IDF, ISO and AOAC stated that before the next session of the Committee, they would be prepared to deal with the method of analysis for sorbic acid, if so requested but that it would not be possible to distinguish between an addition of a preservative to the yoghurt and the carry-over of the same substance from preserved flavouring substances.

DRAFT STANDARD FOR YOGHURT (YOGURT) AND SWEETENED YOGHURT (YOGURT), No. A-11(a)

39. The Committee had before it the draft standard for yoghurt and sweetened yoghurt as redrafted by the Secretariat during the session; in particular the labelling sections were discussed. The draft standard as amended is contained in Appendix III-A. to this report.

Name of the Food

40. The delegate of Spain proposed a new wording for para 4.1.1: "Yoghurt with a minimum of 3% milkfat will be called yoghurt without any further qualification".

41. The delegate of the United States proposed a revision of para 4.1.2 to read: "For yoghurt with less than 3% milkfat but with more than 0.5% milkfat, the designation will include the term "Partly Skimmed" or "Low Fat" or any other suitable qualifying description. If the term "Low Fat" is used as a descriptive term, the percentage milkfat should be included in such a description,

42. The Committee decided to leave the text of provisions 4.1.1 and 4.1.2 unchanged but requested governments to consider the two proposals for a new wording.

List of Ingredients

43. The Committee agreed to provide for a provision similar to the one in the redraft of the standard for sweetened condensed milk, stating that "when one or several sugars are used, the name of each sugar shall be declared on the label (e.g. "with sucrose", "with dextrose", "with sucrose and dextrose").

44. Some delegates indicated that, in principle, they were in favour of a declaration of the sweeteners but preferred that only sweeteners other than sucrose would have to be declared as specified in the standard for sweetened condensed milk in the 6th edition of the Code of Principles,

Date Marking

45. The Committee agreed with the proposal of the Codex Committee on Food Labelling to include a provision for date marking and further agreed that the indication of the date of production or the sell-by date should be in clear.

DRAFT STANDARD FOR FLAVOURED YOGHURT (YOGURT), No. A-11(b)

46. The Committee considered a redraft of the standard for flavoured yoghurt, No, A-11(b) which had been prepared by the Secretariat. The Committee agreed that the contents of the standard should be restricted to provisions which were not already covered by the standard for yoghurt and sweetened yoghurt, No. A-11(a), The draft standard as amended is contained in Appendix III-B to this report.

List of Ingredients

47. The Committee adopted a proposal (by the Secretariat) that provisions for a full declaration of ingredients be incorporated into the standard using a text to be found in other standards. The Section would read as follows:

> "4.2 A complete list of ingredients shall be declared on the label in descending order of proportion in accordance with sub-sections 3.2(b) and (c) of the General Standard for the Labelling of Prepackaged Foods".

Definition

48. The Committee noted a proposal by the delegate of the Federal Republic of Germany to amend the definition to read as follows: ''Flavoured yoghurt is yoghurt derived from yoghurt as defined in the Standard for Yoghurt (Yogurt) No. A-11 (a) with the addition of flavouring foods or other flavouring substances and with or without added sugars and/or colouring substances". The reason for the suggestion was to leave open the possibility to include under this standard yoghurts which had been heat-treated after fermentation. The delegate of the Federal Republic of Germany was of the opinion that heat-treatment was more acceptable than the use of preservatives. The delegate of Brazil, supported by several delegates, voiced his objection to this proposal. The delegate of the Netherlands expressed the view that the question of heat-treatment should also be seen in the context of the manufacture of plain and sweetened yoghurt. The Committee agreed that governments should be invited to comment specifically on the proposal of the delegate of the Federal Republic of Germany.

Status of the Standards

49. The Committee agreed that the amended Draft Standards for Yoghurt and Sweetened Yoghurt and for Flavoured Yoghurt should be retained at Step 5 for further comments by governments.

CONSIDERATION OF GENERAL STANDARD FOR CHEESE, A-6

50. The Committee had before it the redraft of the General Standard for Cheese, No. A-6 as contained in Appendix XI of the report of the 15th session. The Committee agreed to the proposal of the Chairman to consider:

(i) the scope of the standard, i.e. whether the General Standard should be extended to include a cheese classification table or whether a separate standard should be established which would cover cheeses for which no international individual standards existed;

(ii) the classification table and the terminology suggested;
(iii) the list of additives.

Scope

51. The delegate of the United States proposed that in addition to the General Standard for cheese which had been accepted in its original form by 35 governments, it would be useful to have a standard for cheeses not covered by international individual standards.

52. The general consensus was that the General Standard should be left in substance as in the 6th edition of the Code but be presented in the format given in Appendix XI of the report of the 15th session without the classification table and the list of additives. Another standard should be established covering those cheeses not having an international individual standard and cheeses for which, for one reason or another, the international individual standard had not been accepted by a particular importing country. The new standard would encompass the classification table which had been discussed in the Committee for the last few years. The scope of the new standard would read as follows:

> "This standard applies to all cheese which is in conformity with the definition for cheese and for which no international individual standard or group standard has been prepared or in countries where an international individual standard has not been adopted".

It was suggested that this standard would not apply to certain cheeses for which there was no international individual cheese standard but for which standards are included in national legislation. The delegate of the Netherlands reserved his position with regard to the addition of the words "or in countries where an international individual standard has not been adopted" in relation to the suggestion that this standard would not apply to certain cheeses for which standards are included in national legislation.

Classification Table

53. The classification table which had been elaborated at the previous meeting of the Committee had been generally well received and with a minor amendment was found suitable for consideration in the new standard for non-standardized cheeses.

54. Some delegates pointed out that the descriptive names in the table were difficult to translate. The Committee agreed that a meaningful phrase was preferable- to a literal translation.

Food Additives

55. It was agreed to group the additives according to Codex format.

56. The Committee further agreed to include a provision stating that the origin of the milk other than cow's milk would have to be declared.

Declaration of the Minimum Fat and Maximum Moisture Content in Cheese

57. At the 15th session of the Committee the delegate of Canada had indicated that the designation according to fat in dry matter was discouraged in Canada as it was considered not to be sufficiently informative to the consumer. The delegate of Canada informed the Committee that the Canadian authorities intended to switch completely over to a declaration of the fat content on a net basis, i.e. without indicating the fat content in the dry matter. The Committee noted that the present standard did not contain

any provisions preventing the declaration of the fat content on a net basis and decided to leave the standard unchanged.

Status or the standards

58. (i) The committee agreed to advance the redraft of the General Standard for Cheese No. A-6 as contained in Appendix IV-^L to this report to Step 5 of the Procedure.

(ii) The Committee agreed to consider the new standard for cheeses not covered by international individual standards as contained in Appendix IV-B to this report at Step 3 of the Procedure.

INTERNATIONAL INDIVIDUAL CHEESE STANDARDS

Draft International Standard for Certain Blue-Veined Cheeses

59. Committee discussed the above mentioned standard as contained in Appendix VIII-B to the Report of the 15th session at Step 6 of the Procedure.

Scope

60. The delegate of the USA proposed to add to the list of varieties to be covered by the standard: "fromage bleu". After some discussion, the USA delegate agreed, however, not to pursue this proposal as this would imply that blue-veined cheeses produced in France, which in that country were covered by the generic term "fromage bleu", would all have to conform with the standard. It was pointed out that French cheese to be imported into the USA and conforming with the standard would have to be labelled "blue cheese" and not "fromage bleu".

Optional Additions

61. In view of the fact that only one country allowed for the use of a large number of optional additions such as listed in the document and as these additions were not used in the countries where the various cheeses were produced originally, the Committee decided to delete a number of additions from the list and to retain water, calcium chloride, beta carotene, chlorophyll copper complex, riboflavin, and harmless preparations of enzymes.

Dimensions and Weights

62. The delegate of Denmark proposed, and the Committee agreed, to increase the weight range of the blue-veined cheeses covered by the standard in para 4.3.2 from 2-4 kg to 2-6 kg. It was further agreed to prescribe in para 4.3.1 that the height of the cheeses should be in the range of 8-15 cm.

Rind

63. The Committee agreed to delete the reference to semi-soft in relation to the surface. Minimum Fat Content in Dry Matter and Maximum Moisture Content

64. A number of proposals were made to alter slightly the figure for minimum fat in the dry matter and the maximum moisture content. It was finally agreed by way of a compromise that for type A the maximum moisture content would be increased from 47% "to 48% but that the remaining values would remain unchanged.

Marking and Labelling

65. As bleaching agents were no longer listed as optional agents, reference to these substances in the last paragraph of Section 7 was deleted.

International Individual Standard for Cream Cheese, Rahmfrischkäse

66. The Committee discussed the draft standard as contained in Appendix VIII-A to the report of the 15th session, at Step 6 of the Procedure.

Designation

67. The Committee considered a proposal to use the term "fresh cream cheese" instead of cream cheese in order to indicate that the standard covered non-matured cheeses only. It was pointed out, however, that large quantities of cheese covered by the standard were sold under the name cream cheese in the United States, Canada and Australia. The Committee argued that the problem could be dealt with by amending the first para of the labelling section, Marking and Labelling, to read "Only uncured cheese conforming with this standard may be designated 'cream cheese', 'Rahmfrischkäse', 'fromage frais à la crème'".

Raw Materials

68. The Committee agreed to amend para 3.1 to read: "Kind of milk: pasteurized cow's milk and cream".

Optional Additives

69. The Committee considered and, after some discussion, agreed to a proposal that the standard should cover cream cheese only and that another standard be elaborated which could cover cream cheese with added fruits, vegetables, etc. The Secretariat was asked to redraft the standard deleting all reference to added products.

70. The Committee adopted proposals by the delegate of the USA to add xanthan gum under 3.2.2.2 and by the delegate of Australia to delete 3.2.2.3.

Minimum Fat and Maximum Moisture Content

71. The Committee considered a proposal of the delegate of the Federal Republic of Germany to add to para 4.7 a provision for a cream cheese with a minimum fat content of 21%, a minimum milk fat content in the dry matter of 50%, and a maximum moisture content of 61%. This product had gained considerable markets in recent years.

72. In the ensuing discussion, the view was put forward that the classification "cream" related to the fat content, rather than to the taste and consistency of the cheese. It was also pointed out that while the product specified by the delegate of the Federal Republic of Germany was sold in large quantities in a number of countries, it was not designated cream cheese.

73. The Committee agreed to leave para 4.7 unchanged and to ask governments to comment on the proposal for a 21% ("cream") cheese for consideration at a future revision of the standard.

Marking and Labelling

74. The Committee asked the Secretariat to amend the Section Labelling Provisions in accordance with the layout used in Cheese Standards C-l to C-30, providing for the various fat levels as listed in Section 4.7.

Status of the Standards for Certain Blue-Veined Cheeses and for Cream Cheese

75. The Committee decided that the standards should be sent to governments for acceptance at Step 7 of the Procedure. The standards are contained in Appendices V-A and V-B to this report.

POOD ADDITIVES IN CHEESE (CALCIUM CHLORIDE, PHOSPHATES, NITRATES)

76. The Committee had before it document CX/MDS/73/6(c) summarizing the information received from governments on the use and amount of calcium chloride, nitrates and phosphates in cheese.

77. The Committee noted that the Codex Committee on Food Additives (CCFA) had endorsed the use of calcium chloride and phosphates in cheese but had not yet endorsed the use of nitrates. The delegate of Denmark stated that the content of nitrates in the finished cheese - based on a maximum use of 200 mg/kg of the cheese milk- would normally not exceed 50 to 100 mg/kg of cheese.

78. The delegate of Poland, supported by the delegates, of Australia, Canada, Italy, New Zealand, Switzerland and the United States, raised strong objections to the use of nitrates in cheese because of the possible formation of nitrosamines in the gut when consumed and also because they did not see any technological necessity for the use of nitrates in cheese making.

79. On the other hand, the* delegates of Austria , Belgium, Brazil, Denmark, Finland, the Federal Republic of Germany , the Netherlands, Norway and Sweden were of the opinion that for certain cheeses the use of nitrates was essential. These delegates endorsed the following statement presented by the delegate of the Netherlands to the Committee:

* Due to present legislation.

> "The delegation of the Netherlands agrees with the suggestion from the Codex Committee on Food Additives that the maximum level for nitraté used in the manufacture of certain cheese varieties and provided for in the relevant international individual cheese standards should not be expressed in mg sodium and potassium nitrate/kg of milk used for cheese production, but in mg (NO_3)/kg of finished cheese. The quantity of nitrate provided for in existing international individual standards will result in an amount in the cheese (ready for consumption) not exceeding 50 mg nitrate (NO_3)/kg cheese. Due to decomposition during the ripening process in most cases lower amounts will be found. In the manufacturing process of certain cheese varieties there is a technological necessity for the use of small amounts of nitrate, whereas in the manufacturing process of other cheeses, e.g. Cheddar and Cheshire, there is no such need. The reasons for this difference can be easily explained. During the manufacture of, e.g. Cheddar cheese, such an amount of salt is added, and such an amount of lactic acid is produced resulting in a low pH, that directly after the manufacturing process the conditions inside the cheese are such that the development of certain gas producing bacteria is inhibited. In the manufacturing process of certain other types of cheese, however, which are salted by means of a brining procedure, the salt concentration and in most cases also the pH do not attain sufficiently low levels immediately after production to inhibit the development of gas producing bacteria. This is even the case when the quality of the milk used as starting material is of the same quality as that of the milk used for the manufacture of Cheddar and similar types of cheese. After a certain period the salt will be diffused throughout the whole cheese and the pH will have fallen sufficiently, but until that moment is reached, the development of gas producing bacteria should be balanced by the use of a small amount of nitrate. It is necessary that the conditions are balanced, i.e. that the bacteria are not

completely inhibited, in order to obtain the proper characteristics and quality of the cheese varieties in question."

80. The Committee agreed to bring the question again to the attention of the Food Additives Committee. The delegate of the Netherlands and supporting delegates stated that they were willing to provide the Secretariat with further scientific information to be forwarded to the Codex Committee on Food Additives.

DRAFT INTERNATIONAL INDIVIDUAL STANDARD FOR CAMEMBERT

81. The Committee had before it the above mentioned standard as contained in Appendix IX-A to the report of the 15th session, at Step 6 of the Procedure.

Shape

82. The delegate of Denmark, supported by. the delegate of Switzerland, indicated that in his opinion the specification that cheeses could only be cut after they had ripened and that each cheese should be wrapped immediately afterwards was too restrictive and proposed the deletion of these particular requirements. He was of the opinion that by cutting prior to ripening, a better product could be obtained and that moreover cheese sectors could be more easily detached from the foil at the time of consumption. The delegate of France held the opinion that by cutting cheese into sectors prior to ripening, the product would no longer be Camembert but finally agreed by way of a compromise that the provisions indicating that cheese should be cut after ripening only be deleted from the text of the standard with the understanding that during the acceptance procedure reservations could be indicated. The final sentence of para 4.2 would thus read: "If cheeses are cut, this should be along one or more planes following the axis of the cylinder".

83. The Committee agreed to a proposal to reduce from 300 g to 250 g the minimum weight of cheeses which may be out into six or eight sectors.

Dimensions and Weights

84. The delegate of Denmark proposed that the range of diameter of the smaller size Camembert cheeses be increased from 6-85½ cm to 6-10 cm in order to avoid a gap between the normal size and the small size cheeses. The Committee, however, decided not to make any change.

Minimum Fat and Dry Matter Content

85. The delegate of the Federal Republic of Germany proposed to decrease the minimum dry matter content for 30% FDM cheeses from 44% to 39% (this variation of Camembert is not produced in France). The Committee agreed to this proposal. In consequence with the above amendment the minimum dry matter content for normal and small sized cheeses was reduced from 110 to 95 g and from 35 g to 30 g, respectively. The delegate of the Federal Republic of Germany further proposed to reduce the minimum dry matter content in the 40% FDM cheese from 44% to 42%. This proposal, however, found no agreement.

86. The delegate of Switzerland indicated that in his country a 55% FDM cream Camembert was manufactured. It was stated that cheeses with a higher fat percentage than those indicated in the standard could "be produced without any further problems and that there was no need to provide for this variation in the standard,

87. The Committee, in discussing the principal characteristics of the cheese, decided to amend para 4.3 to state that the aroma and taste should be characteristic of the variety.

Marking and Labelling

88. The section was revised and brought into line with similar sections in other cheese standards "by deleting the reference to the following sentence:

"On the home market, the indication of the producer country may be replaced by a well known established name of a state, a district or a province, prominently marked,"

and by adding labelling provisions relating to the different fat levels.

89. The delegate of Spain stated that in his opinion on the label it should be indicated whether the milk from which the cheese had been manufactured had been pasteurized. The Committee decided that at this stage it would not include such a requirement in the standard but that at a later stage when dealing with hygiene requirements for various products, it might go into the question again.

DRAFT INTERNATIONAL INDIVIDUAL STANDARD FOR BRIE

90. The Committee had before it the above mentioned standard as contained in Appendix IX-B of the report of the 15th session, at Step 5 of the Procedure.

Shape

91. The Committee agreed to bring the text of this provision in line with the standard for Camembert. The delegate of France made the same reservations as regards the cutting of the cheese prior to ripening.

Principal Characteristics of the Cheese Ready for Consumption

92. The Committee agreed that the standard for Brie should read as in the standard for Camembert.

Marking and Labelling

93. The Committee agreed that this paragraph be amended in line with the changes made in the draft standard for Camembert.

Status of the Standards for Camembert and Brie

94. The Committee agreed without dissent that the standards as amended could be advanced to Step 7 and be sent to governments for acceptance. The standards are contained in Appendices V-C and V-D to this report.

DRAFT INTERNATIONAL STANDARD FOR HARD ORATING CHEESE

95. The Committee had before it the above mentioned standard as contained in the 1st Annex to the report of the 15th session, at Step 3 of the Procedure.

96. The Chairman expressed his appreciation for the good cooperation between the delegates of Italy and the United States which had resulted in the establishment of the draft standard.

Title and Designation

97. The Committee considered proposals to change the title to read "Grating Cheese" and a proposal of the delegate of Spain to develop a standard for "grated"

cheese instead of the present draft standard. The delegate of Spain felt that such a standard would "be more useful than a standard for hard grating cheese,

98. The Committee agreed generally that the draft standard covered a group of cheeses as, for example, the standard for certain "blue-veined cheeses and noted the view of the delegate of Italy that it should not contain names of individual cheese varieties. The Committee agreed to leave the title of the standard unchanged and to amend the designation of the cheese to read: "Hard grating (i.e. cheese suitable for grating)". It was agreed that governments should be invited to comment, particularly on the designation of the cheese.

Necessary Additions

99. The Committee agreed to list "other harmless flavour producing bacteria" under Optional Additions.

Optional Additions

100. A considerable number of delegates raised objections to several additions listed under this item, in particular to benzoyl peroxide or a mixture of benzoyl peroxide with potassium alum, calcium sulphate and magnesium carbonate, sorbic acid or its sodium or potassium salts (maximum 0.3% by weight calculated as sorbic acid) and artificial food colours.

101. The Committee noted that only the delegates of Italy and the United States spoke in favour of retaining the provisions for the use of these additives in the standard and agreed that governments be asked to comment particularly on the matter.

102. The Committee also agreed that the reference to materials used to cover the surface of the rind be listed under item 4.4 "Rind" as was done in the other cheese standards. The delegate of Spain indicated that he was against the use of wax and plastic on rinds.

Principal Characteristics of the Cheese Ready for Consumption

103. The Committee accepted a proposal by the delegate of Italy to delete in paras 4.1.2 and 5.5 the reference to "pecorino siciliano".

Method of Manufacture

104. The Committee noted objections from the delegates of Australia, Argentina, Belgium, Federal Republic of Germany, Prance, Poland, Spain and Switzerland to the use of benzoyl peroxide.

Marking and Labelling

105. The first paragraph of the section was amended to read: "Only cheese conforming with this standard may be designated hard grating cheese and, where this is permitted, by the name of a cheese variety and/or an invented or fancy name".

Status of the Standard

106. The Committee agreed that the standard as amended should be sent to governments for comments at Step 3 of the Procedure. The standard is contained in Appendix VI to this report.

DRAFT STANDARD FOR EDIBLE ACID CASEIN. (A-12) AND DRAFT STANDARD FOR EDIBLE CASEINATE (A-13)

107. The Committee received a report from the Chairman of a Working Party, Dr. T. L. Hall, which during the present session had reviewed the above named draft standards as contained in document CX/MDS 73/9.

108. The Working Party on the draft standards consisted of representatives from Australia, the Federal Republic of Germany, France, the Netherlands, New Zealand, Poland, Uruguay and the United States of America.

109. The Committee considered and slightly amended the redrafts of the standards prepared by the Working Group and accepted the proposal to have only a minimum standard for each product.

Edible Acid Casein

Essential Composition and Quality Factors

110. In para 2.1, the term (Nitrogen x 6.38) was amended to read: (Protein nitrogen x 6.38). The question was raised whether the minimum protein content in the dry matter should be raised to 94% m/m

Food Additives

111. The Committee agreed that governments should also be requested to give a list of the mineral acids used for the manufacture of the caseins (see Definition).

Edible Caseinate

Definition

112. The Committee, taking into account a proposal by the delegate of Uruguay, agreed to amend the definition as suggested by the delegate of France to read: "Edible caseinate is the product obtained by drying aqueous solutions prepared by combining dry edible casein or fresh edible casein curd with food grade alkali".

Essential Composition and Quality Factors

113. Para 2.1 (Nitrogen x 6.38) was amended to read: (Protein nitrogen *x* 6.38). The IDF/ ISO/AOAC group was requested to propose a method of analysis.

114. The delegate of Uruguay stated that he considered the maximum milkfat content in the dry matter (2.0%) to be too low.

Contaminants

115. It was agreed to allow for a maximum arsenic content of 1 mg/kg.

Name of the Food

116. The Committee agreed to insert the word "cation" instead of "metallic ion".

117. The Committee further agreed that governments should be invited to comment in particular on a proposal to change the specification for the range for the pH value in para 2.8 from 6.5-6.7 to 6.5-7.0.

Food Additives

118. Governments are invited to give a list of the food grade alkali used for the manufacture of the edible caseinate to be listed as food additives.

Status of the Standards

119. The Committee agreed that the standards as amended should be sent to governments for comments, at Step 3 of the Procedure. The standards are contained in Appendices VII-A and VII-B to this report.

LABELLING PROVISIONS FOR RECOMBINED AND RECONSTITUTED MILK PRODUCTS

120. The Committee had before it document CX/MDS 73/10 summarizing the decisions it had taken at its 15th session concerning the amended Decision No. 5 and the addition of the definitions of recombined and reconstituted milk products to that Decision. The Committee noted that the Secretariat had drafted labelling provisions for these products as requested at the 15th session. The Committee recalled that the agenda did not foresee reopening the discussion on Decision No. 5 and that it had decided not to change the compositional standards for milk products for a period of at least five years.

121. The Committee noted a proposal by the Secretariat to add to Decision No. 5 the labelling provisions subsequent to their adoption by the Committee.

122. It was agreed that governments should be asked:

(i) to provide information on whether mandatory provisions for specific labelling of recombined and reconstituted products existed under the national legislation (or were considered to be desirable) and to supply detailed information on these provisions;

(ii) to comment on the drafts prepared by the Secretariat as given in paras 123 to 127.

123. In the case of (i) recombined or (ii) reconstituted [product] the fact of recombination or reconstitution shall be declared in one of the following ways:

(i) "Recombined *[*name of the food*]*" or

"*[*Name of the food*]* made by recombining **. . . . . .** and **. . . . . .”** or

"*[*Name of the food*]* made from **. . . . . .** and **. . . . . .**", the blanks being filled with the names of the two or more milk products used for the recombination.

(ii) "Reconstituted [name of the food]" or

"*[*Name of the food*]* made by reconstituting **. . . . . .**" or

"*[*Name of the food*]* made from **. . . . . .**", the blank being filled with the name of the milk product used for the reconstitution.

124. In the case of products made partly from milk and/or skimmed milk and partly by recombination or reconstitution this fact could be declared either by inserting in the above declaration the term "partly" after "made" or by adding the term "milk" or "skimmed milk" to the other milk products listed.

125. In case the Committee should come to the conclusion that the use of recombined or reconstituted milk for cheese ought to be declared, the following draft is put forward for the consideration of the Committee as an addition to the "Marking and Labelling" section of the eligible individual cheese standards:

"Cheese conforming with this standard and made from recombined or reconstituted milk may be designated [name of the cheese] provided that this fact is declared as follows: '[name of the cheese] made from recombined milk' or [name of the cheese] made from reconstituted milk' , as appropriate."

126. For the General Standard for Cheese A-6 the declaration may read (to be added to Section 5.1.1 - the name of the variety of cheese, see report of the 15th session, Appendix XI):

"In case of cheese made from recombined or reconstituted milk, the designation 'cheese' and names designating a variety of cheese shall be accompanied by the following declaration: 'made from recombined milk' or 'made from reconstituted milk', as appropriate."

127. A similar provision could be foreseen for the standards for butter and yoghurt if the Committee concludes that the use of recombined or reconstituted milk should be declared.

HYGIENIC REQUIREMENTS FOR MILK AND MILK PRODUCTS

128. The Committee set up a working group during the session consisting of delegates from the following countries: Australia, Denmark, the Federal Republic of Germany, France, the Netherlands, New Zealand, Switzerland, the United Kingdom, the United States, Uruguay and representatives from IDF and AOAC.

129. The Chairman of the Working Group, Mr. Harold E. Meister (USA) informed the Committee about the deliberations of the Group which are contained in Appendix VIII-A to this report. The following recommendations to the Committee had been agreed to by the majority of the group.

130. The Committee should:

1. Assume responsibility for initiating codes of hygienic practice (guidelines) for milk and milk products;
2. assume responsibility for initiating microbiologically related requirements (minimum) for milk and milk products;
3. decide whether the requirements developed for Item 2 should stand alone or be published as a subpart or appendix to the appropriate standardsof identity;
4. decide on the scope of activity of the Committee's first efforts, e.g. develop codes of practice and requirements for dried milk;
5. send a questionnaire to governments and organizations requesting information on their regulations, requirements or specifications in the area of hygienic practices and microbiologically related requirements for milk and milk products;
6. send the governments a copy of the IDF Code of Hygienic Practice for Dried Milk as an example of what is intended. At the same time request governments to give comments on the IDF Code. (See Appendix VIII-C to this report.)

131. The delegate of the Netherlands presented the minority view of the working group which was that the Committee should elaborate end-product specifications rather than develop Codes of Hygienic Practice. The main reasons are stated hereunder:

1. The Statutes of the Codex Alimentarius Commission Article 1 under (a) state that the purpose of the Joint FAO/WHO Food Standards Programme is to protect the health of the consumer and to ensure fair practices in the food

trade. Codes of Hygienic Practice for the manufacture of dairy products might be useful from an educational point of view, but they do not guarantee that the products do not contain substances or microorganisms detrimental to the health of the consumer. Since the protection of the health of the consumer is emphasized in the Statues of the Codex Alimentarius Commission as the first mentioned criteria, the minority felt strongly that the aim of the Joint FAO/WHO Food Standards Programme would be better reached by end-product specifications rather than by Codes of Hygienic Practice, which are merely guidelines for manufacturers.

2. In order to meet the second criteria of the FAO/WHO Food Standards Programme just mentioned, i.e. ensuring fair practices in international trade, it should be kept in mind that in international trade the buyer has in most cases no possibility to inspect the factory where the consignment he wants to buy has been produced. This means that he has hardly any possibility to determine whether the conditions prescribed in a Code of Hygienic Practice for the manufacturer have been fulfilled.

132. The Committee considered Codes of Hygienic Practice useful in addition to or instead of mandatory microbiological end-product specifications.

133. The delegate of the United Kingdom stated that he was not in favour of mandatory numerical microbiological standards and pointed out the problems associated with lack of reproducibility which would occur in enforcement. It considered that any such standards should be in the form of guidelines of a non-mandatory nature.

134. The delegate of the United States, supported by various other delegates, pointed out that he appreciated the difficulties in conducting and interpreting microbiological analysis but by the use of uniform methods and techniques and careful attention to detail, useful results could be obtained. He also referred to the necessity of consumer protection by establishing mandatory microbiological end-product specifications.

135. The Committee considered the scope of the questionnaire developed by the Working Group, i.e. whether it should be restricted to one product only or whether it should cover the products for which compositional standards existed. The Committee agreed to a proposal by the Secretariat that the questionnaire should aim at obtaining information on a wide range of products. At the same time the views of governments should be sought on the desirability of proceeding either by Codes of Practice or end-product specifications or a combination of both.

136. The Secretariat was requested to send out the questionnaire as drafted and inform the Committee at its next session about the information received. The questionnaire is contained in Appendix VIII-B to this report.

STANDARD FOR CREAM A-9

137. The Committee, owing to lack of time, agreed not to discuss this standard as foreseen on the agenda and decided that it would consider the Standard for Cream at its next session in the light of the comments received for the present session.

STANDARD METHODS OP ANALYSIS

Report on Joint Proposals Prepared by IDF, ISO and AOAC .

138. The Committee briefly considered and then adopted the report by the above mentioned Working Group as contained under CX/MDS 73/12 which had been distributed during the session. It was decided to request governments to comment in

particular on the questions raised in paras 2.4 and 3.15 of the report. The IDF/ISO/AOAC report is contained in Appendix IX to this report.

OTHER BUSINESS

Amount of Nisin in Processed Cheeses

139. The Committee noted the proposal of the delegate of the United Kingdom to clarify the specification for the amount of nisin which could be used in processed cheese according to the Processed Cheese Standards A-8(a) to A-8(c). The proposal was made because of the necessity to prevent clostridial spoilage in warm countries of consignments of canned processed cheese donated to the World Food Programme. The provisions as contained in the standards referring to a maximum level of use of 100 rag/kg of processed cheese, had led to different interpretations: (i) that they referred to pure nisin (which is 40 million international units per gramme), and (ii) that they referred to commercial preparations (with approximately 1 million international units per gramme).

140. The Committee was informed that the original proposal of prescribing 500 Reading units per gramme (which would correspond to a maximum level of 12.5 mg pure nisin per kg of cheese) had been changed during the elaboration of the above standards. In view of the fact that unless sufficient nisin were added, there would be no adequate protection against spoilage, it was proposed that the Committee raise the maximum level of use to 12.5 mg of pure nisin in the standards when they come up for revision. Taking into account that food additives should be used in amounts necessary to achieve the desired effect, the Committee agreed to endorse this level and to revise the standards in due course.

International Individual Cheese Standards

141. The delegate of Uruguay proposed that the Uruguayan application for individual standards should be dealt with and informed the Committee that he had had a useful discussion with the delegate of Switzerland concerning their application for an international individual standard for Sbrinz.

142. The Committee noted that there were approximately 20 applications for international individual standards which had not yet been given priority ratings and confirmed the decision it had taken at its 14th session, that work on applications for cheese standards which had not yet received priority should be deferred until a clear evaluation could be made of the results of the work on the redraft of the General Standard for Cheese, A-6, the standard covering cheese for which no international individual standards existed and the standard for hard grating cheese.

143. The Committee also adopted a proposal of the delegate of the United Kingdom that the principles for the establishment of international individual cheese standards should be reconsidered before work on the elaboration of further individual cheese standards was taken up.

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APPENDIX II

STANDARD NO. A-2
Step 7

Submitted to Governments for acceptance or confirmation of acceptance

STANDARD FOR (i) BUTTEROIL AND (ii) ANHYDROUS BUTTEROIL AND ANHYDROUS MILKFAT

1. DEFINITION

1.1 Butteroil, Anhydrous Butteroil and Anhydrous Milkfat are products exclusively obtained from butter or cream and resulting from the removal of practically the entire water and solids-not-fat content.

2. ESSENTIAL COMPOSITION AND QUALITY FACTORS

2.1 Butteroil

2.1.1 Minimum milkfat content:	99.3% m/m
2.1.2 Maximum water content:	0.5% m/m

2.2 Anhydrous Butteroil and Anhydrous Milkfat

2.2.1 Minimum milkfat content	99.8% m/m
2.2.2 Maximum water content	0.1% m/m

3. FOOD ADDITIVES

3.1 Antioxidants	Maximum level
Any combination of propyl, octyl and dodecyl gallates, with butylated hydroxyanisole (BHA) or butylated hydroxytoluene (BHT) or both in products not intended for direct consumption nor for use in recombined milk or recombined milk products.	200 mg/kg but gallates not to exceed 100 mg/kg

4. LABELLING

In addition to Sections l, 2, 4 and 6 of the General Standard for the Labelling of Prepackaged Foods (Ref. No. CAC/RS 1-1969), the following specific provisions apply:

4.1 The Name of the Food

4.1.1 The name of the product shall be (a) "butteroil" or (b) "anhydrous butteroil" or "anhydrous milkfat" as appropriate.

4.1.2 Where milk other than cow's milk is used for the manufacture of the product or any part thereof, a word or words denoting the animal or animals from which the milk has been derived should be inserted immediately before or after the designation of the product except that no such insertion need be made if the consumer would not be misled by its omission.

4.2 List of Ingredients

The presence of antioxidants shall be declared on the label accompanied by an indication that the product was not for direct consumption or for use in recombined or reconstituted products. The class title "Antioxidant(s)" may be used.

4.3 Net Contents

The net contents shall be declared by weight in either the metric ("Système International" units) or avoirdupois or both systems of measurement, as required by the country in which the product is sold.

4.4 Name and Address

The name and address of the manufacturer, packer, distributor, importer, exporter or vendor, shall be declared.

4.5 Country of Origin (Manufacture)

The country of manufacture of the food shall be declared except that foods sold within the country of manufacture need not declare the country of manufacture.

5. METHODS OF SAMPLING AND ANALYSIS

5.1 Sampling: according to FAO/WHO Standard B.1 "Sampling Methods for Milk and Milk Products", paragraph 2.

5.2 Determination of acid value: according to FAO/WHO Standard B.4 "Determination of the Acid Value of Pat from Butter".

5.3 Determination of refractive index: according to FAO/WHO Standard B.5 "Determination of the Refractive Index of Pat from Butter".

APPENDIX III-A

STANDARD No. A-11(a)
Step 5

Submitted to Governments for comments

DRAFT STANDARD FOR YOGHURT (YOGURT) AND SWEETENED YOGHURT (SWEETENED YOGURT)

1. DEFINITIONS

1.1 Yoghurt is a coagulated milk product obtained by lactic acid fermentation through the action of Lactobacillus bulgaricus and Streptococcus thermophilus, and if desired, other suitable lactic acid producing cultures, from milk, cream, concentrated milk, partly skimmed milk or skimmed milk, with or without the addition of skimmed milk powder, concentrated whey, whey powder and cream. The microorganisms in the final product must be viable and abundant.

1.2 Sweetened yoghurt is yoghurt to which one or more sugars only have been added.

1.3 'Sugars' mean any carbohydrate sweetening matter.

2. ESSENTIAL COMPOSITION AND QUALITY FACTORS

2.1 Yoghurts

2.1.1 Yoghurt

Minimum milkfat content:	3.0% m/m 8.5% m/m
Minimum milk solids non-fat content:	

2.1.2 Partly skimmed yoghurt

Maximum milkfat content:	less than 3.0% m/m
Minimum milkfat content:	more than 0.5% m/m
Minimum milk solids non-fat content:	8.5% m/m

2.1.3 Skimmed yoghurt

Maximum milkfat content:	0.5% m/m
Minimum milk solids non-fat content:	8.5% m/m

2.2 Sweetened yoghurts

Yoghurt, partly skimmed yoghurt and skimmed yoghurt complying with the requirements of sections 2.1.1 and 2.1.2 and 2.1.3 respectively, and containing sugars. The compositional requirements refer to the milk part of the sweetened yoghurts.

2.3 Essential raw materials

- Milk or concentrated milk, or
- partly skimmed milk or concentrated partly skimmed milk, or
- skimmed milk or concentrated skimmed milk, or
- cream, or
- a mixture of two or more of these products.

2.4 Essential additions

- Cultures of Lactobacillus bulgaricus and Streptococcus thermophilus.

Note by the Secretariat; There appears to be an inconsistency in 1.1, 2.3 and 2.5 concerning the listing of ingredients. The Committee might wish to look into the matter again.

2.5 Optional additions

- Milk powder, skimmed milk powder, unfermented buttermilk, concentrated whey, whey powder, whey proteins, whey protein concentrate, water-soluble milk proteins, edible casein, caseinates.
- Cultures of suitable lactic acid producing bateria in addition to those in 2.4.
- Sugars.

3. FOOD ADDITIVES

None

4. LABELLING

In addition to Sections 1, 2, 4 and 6 of the General Standard for the Labelling of Prepackaged Foods (Ref. No. CAC/RS 1-1969), the following specific provisions apply:

4.1 The name of the food

The name of the product shall be Yoghurt, or Yogurt, subject to the following provisions:

4.1.1 Yoghurt with less than 3.0% milkfat content should not be designated as yoghurt unqualified.

4.1.2 For yoghurt with less than 3.0% milkfat but with more than 0.5% milkfat the designation shall include partly skimmed, or any other suitable qualifying description.

4.1.3 For yoghurt with less than 0.5% m/m milkfat content the designation shall include skimmed or any other suitable qualifying description.

4.1.4 The provisions given in 4.1.1, 4.1.2 and 4.1.3 apply also to yoghurt to which sugar or sugars have been added in accordance with section 2.2, with the proviso that the designations concerned shall be accompanied by the term "Sweetened".

4.1.5 Where milk other than cow's milk is used for the manufacture of the product or any part thereof, a word or words denoting the animal or animals from which the milk has *been* derived should be inserted immediately before or after the designation of the product except that no such insertion need be made if the consumer would not be misled by its omission.

4.2 List of ingredients

When one or several sugars are used the name of each sugar shall be declared on the label (e.g. "with sucrose", "with dextrose", "with sucrose and dextrose").

4.3 Net contents

The net contents shall be declared by weight in either the metric ("Système International" units) or avoirdupois or both systems of measurement or by volume in one or more of the following systems of measurement: metric ("Système International"), U.S. or British units as required by the country in which the product is sold.

4.4 Name and address

The name and address of the manufacturer, packer, distributor, importer or vendor, shall be declared.

4.5 Country of origin (manufacture)

The country of manufacture of the food shall be declared except that foods sold within the country of manufacture need not declare the country of manufacture.

4.6 Date marking

There shall be an indication in clear of the date of production, that is, the date the final product was packaged for final sale or the sell-by date.

APPENDIX III-B

STANDARD No. A-11 (b)
at Step 5

Submitted to Governments for Comments

DRAFT STANDARD FOR FLAVOURED YOGHURT (FLAVOURED YOGURT)

1. DEFINITION

Flavoured yoghurt as defined in section 1.1 of the Standard for Yoghurt (Yogurt) No. A-11 (a) with added flavouring foods or other flavouring substances and with or without added sugars and/or colouring substances.

2. ESSENTIAL COMPOSITION AND QUALITY FACTORS

2.1 The milk part of flavoured yoghurts shall comply with the requirements for yoghurts as specified in section 2.1 of the Standard for Yoghurt (Yogurt). The minimum amount of yoghurt in the final product must be 70% m/m.

2.2 Optional additions

Natural flavouring ingredients such as fruit (fresh, canned quick frozen, powdered), fruit purée, fruit pulp, jam, fruit syrup, fruit juice, honey, chocolate, cocoa, nuts, coffee, spices and other harmless natural flavouring ingredients.

3. FOOD ADDITIVES

3.1 Flavours

Essences and extracts derived from fruit or parts of fruit[1] and the synthetic equivalents of essences.

1/ Endorsed by the Codex Committee on Food Additives

3.2 Food colours

*[*Governments are requested to indicate which colours they would propose to use in the standard and to suggest maximum levels of use.*]*

3.3 Stabilizers

Furcellaran Xanthan gum Arabic gum Locust (Carob) bean gum* Karaya gum* Guar gum* Oat gum Tragacanth gum* Agar-agar Carrageenan Sodium carboxymethylcellulose (cellulose gum) Sodium, potassium, calcium and ammonium alginates (Algin)	5000 mg/kg
Propylene glycol alginate Pectin	10 g/kg

Gelatine	10 g/kg
Modified starches appearing in the Codex List (CAC/FAL 1-1973)	30 g/kg

* not yet cleared toxicologically

3.4 Preservatives

Sorbic acid and its sodium, potassium and calcium salts, sulphur dioxide, benzoic acid *[*Governments to suggest maximum levels of use*]*

4. LABELLING

In addition to Sections 1, 2, 4 and 6 of the General Standard for the Labelling of Prepackaged Foods (Ref. No. CAC/RS 1-1969), the following specific provisions apply:

4.1 The name of the food

4.1.1 The provisions given in 4.1.1, 4.1.2 and 4.1.3 of the Standard for Yoghurt (Yogurt) No. A-11(a) apply also to yoghurt to which flavouring foodstuffs have been added in accordance with section 2.1, with the proviso that the designations concerned shall be accompanied by a description of the foods or flavourings which have been added.

4.1.2 Where milk other than cow's milk is used for the manufacture of the product or any part thereof, a word or words denoting the animal or animals from which the milk has been derived should be inserted immediately before or after the designation of the product except that no such insertion need be made if the consumer would not be misled by its omission.

4.2 List of ingredients

A complete list of ingredients shall be declared on the label in descending order of proportion in accordance with sub-sections 3.2(b) and (c) of the General Standard for the Labelling of Prepackaged Foods.

4.3 Net contents

The net contents shall be declared by weight in either the metric ("Système International" units) or avoirdupois or both systems of measurement or by volume in one or more of the following systems of measurement: metric ("Système International"), U.S. or British units as required by the country in which the product is sold.

4.4 Name and address

The name and address of the manufacturer, packer, distributor, importer or vendor, shall be declared.

4.5 Country of origin (manufacture)

The country of manufacture of the food shall be declared except that foods sold within the country of manufacture need not declare the country of manufacture.

4.6 Date marking

There shall be an indication in clear of the date of production, that is, the date the final product was packaged for final sale or the sell-by date.

APPENDIX IV-A

STANDARD No. A-6

GENERAL STANDARD FOR CHEESE

Redraft at Step 5 of the Committee's Procedure

1. SCOPE

This standard applies to all cheese which is in conformity with the definition for cheese. Subject to the provisions of this standard, more specific requirements and other permitted additions may be included in international individual cheese standards, or group standards, and in such cases the more specific requirements of those standards shall apply in respect of the particular variety or group of cheeses concerned.

2. DEFINITIONS

2.1 Cheese is the fresh or matured non liquid product obtained by draining after coagulation of milk, cream, skimmed or partly skimmed milk, buttermilk or a combination of some or all of these products.

2.2 A milk coagulating enzyme preparation suitable for cheesemaking is a product which is not harmful to the health of the consumer and with the aid of which, either singly or in combination with calf rennet, cheese can be manufactured which has all the characteristics of the type of cheese concerned.

3. ADDITIONS

The following substances may be added, provided that such substances are not intended to take the place of any milk constituent:

- cultures of harmless lactic acid producing bacteria (starter);
- rennet or other suitable coagulating enzymes;
- sodium chloride;
- natural flavouring substances not derived from milk such as spices, in such quantity that they can be considered only as flavouring substances, provided that the cheese remains the major constituent and that the addition is declared in the designation of the product in accordance with paragraph 4.1.3 (e.g. cheese with celery, etc.), unless the presence of spices is a traditional characteristic of the cheese.

4. LABELLING

In addition to sections 1, 2, 4 and 6 of the General Standard for the Labelling of Prepackaged Food (Ref. No. CAC/RS 1-1969), the following specific provisions apply except where an international individual cheese standard or group standard provides otherwise.

4.1 The Name of the Food

4.1.1 All products designated cheese or with the name of a' variety of cheese must conform to the standard.

4.1.2 The original cheese, or where not possible, the original pack or prepared consumer pack shall be marked with:

(a) The name of the variety of the cheese;

(b) The minimum fat content in the dry matter expressed as percentage by mass;

The minimum fat content need not be declared in case the cheese complies:

(i) with an international standard fixing minimum fat and maximum moisture contents, adopted under the Code of Principles;

(ii) with the national legislation defining its composition and is sold on the home market.

4.1.3 An indication of the addition of spices or other natural flavouring substances (in the designation of the cheese) except in the case of cheeses in which the presence of these substances is a traditional characteristic.

4.2 Name and Address

In case of cheeses for export the original cheese or where not possible, the original pack or prepared consumer pack shall be marked with the name of the manufacturer or exporter in plain or code.

4.3 Country of manufacture

4.3.1 In case of cheeses for export the original cheese, or where not possible the original pack or prepared consumer pack shall be marked with: the name of the producing country;

4.3.2 In case of cheeses sold in the home market and designated by the name of a variety not originating in the producing country, the original cheese, or where not possible the original pack or prepared consumer pack shall be marked with: the name or other clear indication of the producing country such as a clear statement of the full address of the manufacturer or the name of the well- recognized state, region or province of the producing country.

4.4 Prepacked Cheese

When cheese which in cut or sliced form and ready for consumption has been packed out of sight of the consumer, is for sale, the following additional information shall appear on the pack of the prepacked cheese, except where the prepacked cheese is intended for manufacturing purposes:

The name and address of the prepacker, or of the manufacturer, or the importer, or of the seller of the prepacked cheese.

5. METHODS OF SAMPLING AND ANALYSIS

5.1 Sampling: according to FAO/WHO Standard B-l, "Sampling Methods for Milk and Milk Products", paragraphs 2 and 7.

5.2 Fat Content: according to FAO/WHO Standard B-3 "Determination of the Fat Content of Cheese and Processed cheese Products".

APPENDIX IV-B

STANDARD No. A-14

DRAFT STANDARD FOR CHEESES NOT HAVING AN INTERNATIONAL INDIVIDUAL STANDARD

Redraft at Step 3 of the Committee's Procedure

1. Scope

This standard applies to all cheese which is in conformity with the definition for cheese, and for which no international individual standard or group standard has been prepared or in countries where an international individual standard has not been adopted.

2. Definitions

2.1 "Cured/ripened cheese" is a cheese which is not ready for consumption shortly after manufacture but which must be held for such time and at such temperature and under such other conditions as will bring about the necessary characteristic physical and chemical changes throughout the interior of the cheese.

2.2 "Mold cured/ripened cheese" is a cured cheese in which the curing has been accomplished primarily by the development of characteristic mold growth throughout the interior and/or on the surface of the cheese.

2.3 "Uncured/unripened cheese" is cheese which is ready for consumption shortly after manufacture and requires no further physical or chemical change.

3. Classification and Designations

The following classification shall be applicable to all cheeses covered by this standard. However, this classification shall not preclude the designation of more specific requirements in international individual cheese standards.

Classification of Cheese According to Firmness, Fat Content and Principal Curing Characteristics

Term I		Term II		Term III
If the MFFB* is %	The first phrase in the designation will be	If the F.D.B.* is %	The second phrase in the designation will be	Designation according to principal curing characteristics
<51	Extra hard	>60	High fat	1. Cured/ripened a. mainly surface b. mainly interior
49-56	Hard	>45-<60	Full fat	
54-63	Semi-hard	>25-<45	Medium fat	
61-69	Semi-soft	>10-<25	Low fat	2. Mold cured/ripened a. mainly surface b. mainly interior
>67	Soft	<10	Skim	
				3. Uncured/unripened

* MFFB equals moisture on a rat-free basis.

As an example:

$$\frac{\text{moisture in the cheese}}{100 - \text{fat in the cheese}} = \text{MFFB}$$

* F.D.B. equals fat on the dry basis.

As an example:

$$\frac{\text{fat content of the cheese}}{100 - \text{moisture in the cheese}} = \text{F.D.B.}$$

We have, as an example, a cheese with a MFFB of 57% and an F.D.B. of 53% which is cured similar to roquefort. The name would then be:

Semi-hard	Full fat	Interior mold cured cheese
Term I	Term II	Term III

If milk, other than cows milk, is used in the making of a cheese, the source of the milk shall be clearly stated as part of the name

4. Authorized Additions

Starter - harmless bacterial cultures (lactic acid producing bacteria) Yeast, mould or bacterial cultures characteristic of the variety Sodium chloride Pure whey proteins, max. 20%, in fat-free dry cheese

5. Authorized Additives

The following provisions in respect of food additives are subject to endorsement by the Codex Committee on Food Additives:

5.1 Colours

Anatto and beta-carotene singly or in combination, max. 600 mg/kg of cheese; Chlorophylls, including copper chlorophyll (colour index No. 75 810) Colours:

- alpha -, beta -, and gamma carotenes (CI 75 130, E160) - for the mass of hard cheese
- Lithol Rubine 4B (CI 15 850, E180) | for rind
- Iron Oxides (CI 77 492, E181)

5.2 Flavours

Natural flavouring substances (No substances shall be added for the purpose of enhancing the cheese flavour).

5.3 Maturing agents

Preparations of safe and suitable enzymes of plant or animal origin, max. 1 g/kg of milk used.

5.4 Preservatives

Sorbic acid or its sodium or potassium salts, max. 1000 mg/kg calculated as sorbic acid
Hydrogen peroxide and catalase
Propionic acid
Hexamethylenetetramine
Nisin, max. 2.5 mg/kg
Sorbic acid and benzoic acid and their sodium and potassium and calcium salts present in enzyme preparations
Sodium and potassium nitrate, max,, 200 mg/kg of milk

5.5 Stabilizers (may be used in uncured cheeses only)

- Sodium, potassium, calcium and ammonium caseinates - carob (locust) bean gum - guar gum - Karaya gum - tragacanth gum - xanthan gum - carrageenan - furcellaran - gelatine - lecithin - alginic acid and its ammonium, calcium, potassium and sodium salts - sodium carboxymethylcellulose (cellulose gum) - oat gum - propylene glycol esters of alginic acid - Pectin - agar-agar	When used alone or in combination they shall not exceed 5 g/kg of the weight of the finished product.

5.6 Others

* Rennet or other suitable coagulating enzymes * Calcium chloride, max. 200 mg/kg of the milk used Sodium hydrogen carbonate and calcium carbonate, max. 30 g/kg of curd in acid cured cheese	

* All additives except those marked (*) shall be declared on the label.

- lactic acid
- citric acid
- phosphoric acid
- phosphates, max. 200 mg/kg of the milk used
- Pimaricin

  For treating the rind without plastic coating 2 mg/kg
  Used in plastic coatings, 500 mg/kg
- Paraffins for coating

6. Labelling

6.1 The name of the variety of the cheese

The designation "cheese" and names designating a variety of cheese may be accompanied by an appropriate designation in accordance with the classification of cheese in section 3.1.

6.2 All additives listed in paragraph 5, except those specifically exempt shall be declared on the label.

6.3 Where milk other than cow's milk is used for the manufacture of the product or any part thereof, a word or words denoting the animal or animals from which the milk has been derived should be inserted immediately before or after the designation of the product except that no

such insertion need be made if the consumer would not be misled by its omission.

6.4 In all other respects the labelling shall comply with the labelling requirements under the General Standard for Cheese (A-6).

7. Methods of Sampling and Analysis

7.1 Sampling: according to FAO/WHO Standard B-l, "Sampling Methods for Milk and Milk Products", paragraphs 2 and 7.

7.2 Fat Content: according to FAO/WHO Standard B-3, "Determination of the Fat Content of Cheese and Processed Cheese Products".

APPENDIX V-A

STANDARD No. C-31
Step 7

Submitted to Governments for Acceptance

INTERNATIONAL INDIVIDUAL STANDARD FOR CREAM CHEESE (RAHMFRISCHKASE)

1. DESIGNATION OF CHEESE

Cream Cheese, Rahmfrischkäse or any other translations

2. DEPOSITING COUNTRIES

United States of America
Denmark
Federal Republic of Germany
Australia
Canada

3. RAW MATERIALS

3.1 Kind of milk: pasteurized cow's milk and cream

3.2 Authorized additions:

3.2.1 Necessary additions:

Starter - harmless lactic acid and aroma producing bacteria
Sodium chloride

3.2.2 Optional additions

3.2.2.1 Rennet or other suitable coagulating enzymes

3.2.2.2 Vegetable gums:

Karaya gum **
Tragacanth gum**
Locust (Carob) bean gum**
Guar gum
Xanthan gum**
Carrageenan

3.2.2.3 Other thickening agents:

Gelatine
Pectin
Algin (ammonium, calcium, potassium and sodium alginates)
Propylene glycol alginate

Total weight of optional additions listed above shall not exceed 5 g / kg of the weight of the finished cheese.

When one or more of optional additions listed above are used, dioctyl sodium sulfosuccinate may be used. The quantity shall not exceed 0.5 per cent of such additions,

4. PRINCIPAL CHARACTERISTICS OF THE CHEESE READY FOR CONSUMPTION

4.1 Type: Uncured cheese

4.1.1 Consistency: soft, spreadable

4.1.2 Description: The cheese is a soft unripened cheese possessing a mild creamy or acid flavour and aroma typical of milk product cultured with lactic and aroma producing bacteria. It spreads and mixes readily with other foods.

4.2 Shape: Various - no limitations as to shape or type of package

4.3 Dimensions and weights: various

4.4 Rind: none
soft

** subject to endorsement

4.5 Body:

4.5.1 Texture: smooth to slightly flaky

4.5.2 Colour: white to light cream

4.6 Holes: none

4.7 Minimum fat and maximum moisture content:

	A Cream Cheese	B Cream Cheese 28%	C Cream Cheese 24%
Min. fat content (percent)	33	28	24
Minimum milkfat content in dry matter	70	60	60
Max. moisture content (percent)	55	58	62
Min. dry matter content	45	42	38

5. METHOD OF MANUFACTURE

5.1 Method of coagulation: lactic acid coagulation with or without the aid of coagulating enzymes.

5.2 Heat treatment of the milk: coagulated mass may be warmed prior to removal of whey. Curd may be subsequently heated prior to packaging.

5.3 Fermentation procedure: the only fermentation desired in this product is the lactic acid fermentation used in coagulation and the flavour development by the associated aroma producing bacteria.

6. SAMPLING AND ANALYSIS

6.1 Sampling: according to FAO/WHO Standard B.1, "Sampling Methods for Milk and Milk Products", paragraph 7, "Sampling of Cheese".

6.2 Determination of fat content: according to FAO/WHO Standard B.3, "Determination of the Fat Content of Cheese and Processed Cheese Products".

7. MARKING AND LABELLING

Only uncured cheese conforming with this Standard may be designated "Cream Cheese", "Rahmfrischkäse", "Fromage frais à. la crème". The labelling of cream cheese shall comply with Article 4 of FAO/WHO standard A.6 "General Standard for Cheese".

When an optional addition listed tinder 3.2.2.2 and 3.2.2.3 is present the label shall bear the statement" _____ added" or "with added _____", the blank being filled in with the word or words "vegetable gum" or the appropriate name or any combination of two or more of these as the case may be.

The cheese mentioned under B and C in 4.7 may be designated "Cream Cheese", "Rahmfrischkäse" , "Fromage frais à la crème" provided that the designation is accompanied by a prefix or suffix corresponding to the fat percentage, e.g. 28% Cream Cheese.

APPENDIX V-B

STANDARD No.
C-32 Step 7

Submitted to Governments for acceptance

INTERNATIONAL STANDARD FOR CERTAIN BLUE-VEINED CHEESES

1. SCOPE

This standard applies to the following varieties of blue-veined cheese: Danablu, Edelpilzkäse, Adelost, Blue Cheese.

2. DEPOSITING COUNTRIES

Denmark, Fed. Rep. of Germany, Sweden, United States of America.

3. RAW MATERIALS

3.1 Kind of milk: cow's milk

3.2 Authorized additions:

3.2.1 Necessary additions:

- cultures of harmless lactic acid producing bacteria (starter)
- rennet or other suitable coagulating enzymes - sodium chloride
- cultures of penicillium rogueforti

3.2.2 Optional additions:

- water
- calcium chloride, max. 200 mg/kg of the milk used
- beta-carotene max. 600 mg/kg of cheese
- chlorophyll copper complex
- riboflavin (lactoflavin)
- harmless preparations of enzymes capable of aiding in the curing or flavour development, (weight of solids of such substance added, not to exceed 0.1 percent of weight of milk used).

4. PRINCIPAL CHARACTERISTICS OF THE CHEESE READY FOR CONSUMPTION

4.1 Type

4.1.1 Consistency: semi-hard to soft

4.1.2 Short description: blue-veined semi-hard cheese mainly ripened by internal mould growth

4.2 Shapes: a) flat cylindrical

b) flat square

c) flat rectangular

4.3 Dimensions and weights

4.3.1 Dimensions: height: approx. 8 to 15 cm

4.3.2 Weights: 2 to 6 kg

4.3.2.1 Weights of "Danablu"

flat cylindrical: 2.75 to 3.25 kg
flat square and flat rectangular: approx. 4 kg

4.4 Rind

4.4.1 Consistency: no actual rind, but a semi-hard surface

4.4.2 Appearance: greasy to dry

4.4.3 Colour: whitish

4-5 4.5 Body

4.5.1 Texture: suitable for cutting and spreading

4.5.2 Colour: white to yellowish with blue-green veins of mould

4.6 Holes

4.6.1 Distribution: scarce

4.6.2 Shape: irregular

4.6.3 Size: various

4.6.4 Appearance: with blue-green moulds

4.7/ 4.8 Minimum fat content in dry matter and maximum moisture content:

	A	B	C
Minimum fat in dry matter %	50	60	45
Maximum moisture content %	48	48	55
Minimum dry matter content %	52	52	45

The minimum fat content in dry matter and maximum moisture content for Danablu are restricted to those given tinder A and B.

4.9 Other principal characteristics:

Cheese has distinct piquant flavour resulting from fat breakdown. Not to be sold to the consumer at less than 6 weeks of age.

5. METHOD OF MANUFACTURE

5.1 Method of coagulation: rennet or other suitable coagulating enzymes; addition of a lactic acid starter

5.2 Heat treatment: none, or slightly heated after cutting, ladled out in bags or moulds

5.3 Fermentation procedure: lactic acid and mould fermentation

5.4 Maturation procedure: pierced with needles to develop growth of moulds; stored humid at a temperature from 2º to 12ºC; some surface mould

5.5 Other principal characteristics: none

6. SAMPLING AND ANALYSIS

6.1 Sampling: according to FAO/WHO Standard B.1, "Sampling Methods for Milk and Milk Products", clause 7.2(b), "Sampling by means of a trier"; reference is made to clauses 7.2.2.3 and 7.2.2.5.

6.2 Determination of fat content: according to FAO/WHO Standard B.3, "Determination of the Fat Content of Cheese and Processed Cheese Products".

7. MARKING AND LABELLING

Only cheese conforming with this standard may be designated (a) "Danablu" or "Edelpilzkäse" or "Blue Cheese" or "Adelost" or (b) a combination of the designation "Blue-veined cheese" with the designations given in (a) e.g. "Adelost -blue-veined cheese".

It shall be labelled in conformity with the appropriate sections of Article 4 of FAO/WHO Standard A.6, "General Standard for Cheese" except that Danablu not produced in the country of origin must be marked with the name of the producing country even when sold in the home market.

The cheese mentioned under "B" and "C" in 4.7/4.8 may be designated as mentioned under (a) or (b) above provided that the designation is accompanied by the prefix or suffix corresponding to the fat percentage, e.g. "Edelpilzkäse 45%".

The use of food colours shall be indicated on the label.

APPENDIX V-C

STANDARD No. C-33
Step 7

Submitted to Governments for acceptance

INTERNATIONAL INDIVIDUAL STANDARD. FOR CAMEMBERT

1. DESIGNATION OF CHEESE

1.1 Name of cheese: Camembert

2. DEPOSITING COUNTRIES

2.1 Depositing countries: France, Germany
2.2 Country of origin: France

3. RAW MATERIALS

3.1 Kind of milk: cow's milk
3.2 Authorized additions

- cultures of lactic acid-producing bacteria of Penicillium caseicolum, of Bacterium linens
- rennet or other suitable coagulating enzymes
- sodium chloride
- calcium chloride, max. 200 mg/kg of the milk used
- annatto * and beta-carotene, max. 600 mg/kg
- water

4. PRINCIPAL CHARACTERISTICS OF THE CHEESE READY FOR CONSUMPTION

4.1 Type

4.1.1 Consistency: soft cheese

4.1.2 Short description: flat, cylindrical cheese covered with white mould (Penicillium caseicolum).

4.2 Shape

4.2.1 Usual shape: flat cylinder, the height being less than the radius of the cylinder and in any case less than 4 cm.

4.2.2 Existing variations:

(a) whole cheese cut into sectors[1]

(b) half cylinder

(c) half cylinder cut into sectors[1]

If cheeses are cut, this should be along one or more planes following the axes of the cylinder.

4.3 Dimensions and weights[1]

	Dimensions		Minimum weight
	Diameter	Height approx.	
Normal size	from 10 to 11 cm	from 3 to 3.5 cm	250 g
Small size	from 6 to 8.5 cm	from 2.5 to 3 cm	80 g

[1] camembert weighing 250 g or more may be cut into 6 or 8 sectors (usually 6).

* temporarily endorsed

4.4 Rind

4.4.1 Consistency: soft
4.4.2 Appearance and colour: rind uniformly covered with white mould
4.4.3 (Penicillium caseicolum), with occasional orange-coloured spots (Bacterium linens).

4.5 Body

4.5.1 Texture: soft, but not crumbly
4.5.2 Colour: white to creamy yellow

4.6 Holes

4.6.1 Distribution 4.6.2 Shape 4.6.3 Appearance 4.6.4 Size	No holes - Possibly small longitudinal splits

4.7 Minimum fat content in dry matter (see table below).

4.8 Minimum dry matter (see table below)

		A 45%	B 30%	C 40%	D 50%
Minimum fat content in dry matter %		45	30	40	50
Maximum moisture content %		56	56	56	56
Minimum dry matter content %		44	38	44	44
Minimum dry matter content) per cheese in g	normal size	110	95	110	110
	small size	35	30	35	35

4.9 Other principal characteristics:
Aroma and taste: characteristic of the variety

5. METHOD OF MANUFACTURE

5.1 Method of coagulation: rennet and lactic acid (produced by lactic acid producing bacteria).

5.2 Heat treatment

5.2.1 Heat treatment of the milk: the temperature of the raw or pasteurized milk is raised to the coagulation temperature (between 28 and 32ºC).

5.2.2 Heat treatment of the coagulum: none

5.3 Fermentation procedure: predominantly lactic acid fermentation followed by mould and bacterial ddvelopment on the surface with proteolysis spreading inward.

5.4 Maturation procedure: storage for about 10 days at a temperature of between 10 and 14ºC, possibly followed by storage at lower temperatures.

5.5 Other essential characteristics: natural draining; dry or brine salting.

6. SAMPLES AND ANALYSIS

6.1 Sampling: according to FAO/WHO Standard B.1, "Sampling Methods for Milk and Milk Products", clause 7.

6.2 Determination of fat content: according to FAO/WHO Standard B.3, "Determination of the Fat Content of Cheese and of Processed Cheese Products".

[1] Camembert weighing 250 g or more may be cut into 6 or 8 sectors (usually 6).

7. MARKING AND LABELLING

Only cheese conforming with this standard nay be designated "Camembert". It shall be labelled in conformity with the FAO/WHO Standard A-6 for cheese, except that Camembert not produced in the country of origin shall be marked with the name of the producing country even when sold on the home market.

The cheese mentioned under B to D in 4.7/4.8 may be designated "Camembert" provided that the designation is accompanied by a prefix or suffix corresponding to the fat percentage, e.g. "Camembert 30%".

N.B. The designation "heat treated Camembert" is reserved for a Camembert packed in a metal container in which it has undergone Heat treatment to increase the keeping quality..

APPENDIX V-D

STANDARD No. C-34
Step 7

Submitted to Governments for acceptance

INTERNATIONAL INDIVIDUAL STANDARD FOR BRIE

1. DESIGNATION OF CHEESE

Brie

2. DEPOSITING COUNTRIES

2.1 Depositing countries: France, Germany
2.2 Country of origin: France

3. RAW MATERIALS

3.1 Kind of milk: cow's milk
3.2 Authorized additions

- cultures of lactic acid-producing bacteria of Penicillium caseicolum, of Bacterium linens
- rennet or other suitable coagulating enzymes
- sodium chloride
- calcium chloride max. 200 mg/kg of the milk used
- annatto * and beta-carotene max. 600 mg/kg
- water

4. PRINCIPAL CHARACTERISTICS OF THE CHEESE READY FOR CONSUMPTION

4.1 Type

4.1.1 Consistency: soft cheese
4.1.2 Short description; flat, cylindrical shaped cheese, covered with white mould (Penicillium caseicolum)

4.2 Shape

4.2.1 Usual shape: flat, cylindrical, the height being less than the radius of the cylinder and in any case less than 4 cm.

4.2.2 Existing variations: Brie may also be sold in sectors. If cheeses are cut this should be along one or more planes following the axis of the cylinder.

4.3 Dimensions and weights

	Dimensions		Minimum weight
	Diameter	Heights approx.	
Brie	from 22 cm to 36 cm	2 cm to 3 cm	1000 g
Petit Brie	from 14 to 22 cm	2 cm	340 g

4.4 Rind

4.4.1 Consistency: soft

4.4.2 Appearance and colour: rind uniformly covered with white mould,
4.4.3 (Penicillium caseicolum), with occasional orange-coloured spots (Bacterium linens).

* temporarily endorsed

4.5 Body

4.5.1 Texture: smooth, not crumbly
4.5.2 Colour: from white to creamy yellow

4.6 Holes

4.6.1	Distribution	No holes - Possibly small, longitudinal splits
4.6.2	Shape	
4.6.3	Appearance	
4.6.4	Size	

4.7 Minimum fat content in dry matter (see table below).

4.8 Minimum dry matter content (see table below).

	A Usual	B Permissible	C variations
Minimum fat content in dry matter %	45	40	50
Minimum dry matter content%	44	44	46

4.9 Other principal characteristics:

Aroma and taste: characteristic of the variety

5. METHOD OF MANUFACTURE

5.1 Method of coagulation: rennet and lactic acid (produced by lactic acid producing bacteria)

5.2 Heat treatment

5.2.1 Heat treatment of the milk: the raw or pasteurized milk is raised to the coagulation temperature (between 28 and 32 c)

5.2.2 Heat treatment of the coagulum: none

5.3 Fermentation procedure: mainly lactic acid fermentation followed by mould and bacterial development of the surface with proteolysis spreading inward.

5.4 Maturation procedure: storage for about 10 days at a temperature of between 10 and 14 C, possibly followed by storage at a lower temperature.

5.5 Other principal characteristics: natural draining, dry or brine salting.

6. SAMPLING AND ANALYSIS

6.1 Sampling: according to FAO/WHO Standard B.1, "Sampling Methods for Milk and Milk Products", clause 7.

6.2 Determination of fat content: according to FAO/WHO Standard B.3, "Determination of the Fat Content of Cheese and of Processed Cheese Products".

7. MARKING AND LABELLING

Only cheese conforming with this standard may be designated "Brie". It shall be labelled in conformity with the FAO/WHO Standard A.6 for cheese, except that Brie not produced in. the country of origin shall be marked with the name of the producing country, even when sold on the home market.

The cheese mentioned under B and c in 4.7/4.8 may be designated "Brie" provided that the designation is accompanied by a prefix or suffix corresponding to the fat percentage, e.g. "50% Brie".

APPENDIX VI
Step 3

Submitted to governments for comments

DRAFT INTERNATIONAL STANDARD FOR HARD GRATING CHEESE

1. Designation of Cheese

   Hard Grating (i.e. cheese suitable for grating)

2. Depositing Country

   United States of America

3. Ingredients

   3.1 Kind of milk: cow's milk, goat's milk or sheep's milk

   3.2 Authorized additions:

   3.2.1 Necessary additions:

   - cultures of harmless lactic acid producing bacteria (starter)
   - rennet or other suitable coagulating enzymes
   - sodium chloride

   3.2.2 Optional additions:

   - calcium chloride, maximum 200 mg/kg (anhydrous) of milk used
   - harmless flavour producing bacteria
   - harmless enzymes to assist in flavour development (solids of preparation not to exceed 0.1% of weight of milk used)
   - harmless food colouring (natural or artificial)
   - benzoyl peroxide or a mixture of benzoyl peroxide with potassium alum, calcium sulphate and magnesium carbonate, singly or in combination
   - sorbic acid or its sodium or potassium salts, maximum 3000 rag/kg calculated as sorbic acid

4. Principal Characteristics of the Cheese ready for Consumption

   4.1 Type:

   4.1.1 Consistency: hard, suitable for grating

   4.1.2 Age of cure: minimum age 6 months

   4.2 Shape: various

   4.3 Dimensions and Weight:

   4.3.1 Dimensions: various

   4.3.2 Weights: various

   4.4 Rind, where present:

   4.4.1 Consistency: hard

   4.4.2 Appearance: dry, may be darkened by artificial colouring; may be coated with vegetable oil, wax or plastic materials used for food stuff

4.4.3 Colours amber unless coloured, then brown to black

4.5 Body:

4.5.1 Textures granular, slightly brittle

4.5.2 Colour: natural uncoloured or bleached white to light cream colour

4.6 Holes:

4.6.1 Distribution: when holes are a typical characteristic of the variety, few, uniformly distributed throughout the interior of the cheese

4.6.2 Shapes small, round

4.6.3 Size: approximately 1 mm

4.6.4 Appearance: characteristic gas holes

4.7 Minimum fat: 32% fat in dry matter

4.8 Maximum moisture: 36%

4.9 Brief description: hard, dry, slightly brittle, suitable for grating

5. Method of Manufacture

5.1 Method of coagulating: rennet or other suitable coagulating enzymes; addition of lactic acid starter.

5.2 Heat treatment:

Milk may be raw or pasteurized. If pasteurized the milk is heated to not less than 72ºC (161ºF) for 15 seconds.

5.3 Bleaching: the milk may be bleached by the addition of benzoyl peroxide, maximum 0.002$ of milk.

5.4 Fermentation procedure: lactic acid fermentation or other flavour producing cultures and enzymes.

5.5 Maturation procedure: after the curd which may be lightly salted is shaped into forms, the cheese may be salted again in brine, dry salted or both; held in cold ventilated room for not less than 6 months.

6. Sampling and Analysis

6.1 Sampling: according to FAO/WHO Standard B.1 "Sampling Methods for Milk and Milk Products" para 7 - Sampling Cheese.

6.2 Determination of fat content: according to FAO/WHO Standard B.3 "Determination of Pat Content of Cheese and Processed Cheese Products".

7. Marketing and Labelling

7.1 Only cheese conforming with this standard may be designated hard grating cheese and where this is permitted by the name of a cheese variety and/or an invented or fancy name.

7.2 It shall be labelled in conformity with the appropriate sections of Article 4 of the FAO/WHO Standard A-6 "General Standard for Cheese". The use of food colours and bleaching agents shall be indicated on the label.

APPENDIX VII-A

STANDARD No.A-12
at Step 3

DRAFT STANDARD FOR EDIBLE ACID CASEIN

1. DEFINITION

Edible acid casein is the product obtained by washing, pressing and drying the lactic or mineral acid precipitated coagulum of skimmed milk.

2. ESSENTIAL COMPOSITION AND QUALITY FACTORS

2.1	Minimum protein content in the dry matter (Protein nitrogen x 6.38)	90% m/m
2.2	Maximum moisture content	12% m/m
2.3	Maximum milkfat content in the dry matter	2.0% m/m
2.4	Maximum sediment (scorched particles)	22.5 mg in 25 g
2.5	Foreign matter (such as particles of wood, metal, hairs or fragments of insects)	none in 25 g
2.6	Maximum free acid	0.27 ml of 0.1 N
2.7	Maximum lactose content	1% m/m
2.8	Maximum ash (including P_2O_5)	2.2% m/m
2.9	Flavour and odour: not more than slight foreign flavours and odours. The product must be free from offensive flavours and odours	
2.10	Physical appearance: white to pale cream, free from lumps that do not 'break up under slight pressure	

3. CONTAMINANTS

3.1	Maximum copper content	5 mg/kg
3.2	Maximum lead content	2 mg/kg
3.3	Maximum iron content	20 mg/kg
3.4	Maximum arsenic content	1.0 mg/kg

4. FOOD ADDITIVES

None. *[*Governments are requested to give a list of the mineral acids used for the manufacture of the caseins*]*

5. LABELLING

In addition to Sections 1, 2, 4 and 6 of the General Standard for the Labelling of Prepackaged Foods (Ref. No. CAC/RS 1-1969), the following specific provisions apply:

5.1 The name of the food

The name of the product shall be edible acid casein.

5.2 Net contents

The net contents shall be declared by weight in either the metric ("Système International" units) or avoirdupoisor both systems of measurement, as required by the country in which the product is sold.

5.3 Name and address

The name and address of the manufacturer, packer, distributor, importer, exporter or vendor of the food shall be declared.

5.4 Country of origin (manufacture)

The country of manufacture of the food shall be declared except that foods sold within the country of manufacture need not declare the country of manufacture.

6. METHODS OF SAMPLING AND ANALYSIS

6.1 Sampling: according to FAO/WHO Standard B-l, "Sampling Methods for Milk and Milk Products", paragraphs 2 and 5.

6.2 Methods of analysis: Standard methods recommended jointly by IDF, ISO and AOAC and approved by the FAO/WHO Committee of Government Experts on the Code of Principles concerning Milk and Milk Products.

APPENDIX VII-B

STANDARD No. A-13
at Step 3

DRAFT STANDARD FOR EDIBLE CASEINATES

1. DEFINITION

Edible caseinate is the product obtained by drying aqueous solutions prepared by combining dry edible casein or fresh edible casein curd with food grade alkali.

2. ESSENTIAL COMPOSITION AND QUALITY FACTORS

2.1	Minimum protein content in the dry matter (Protein Nitrogen x 6.38)	90% m/m
2.2	Maximum moisture content	6% m/m
2.3	Maximum milkfat content in the dry matter	2% m/m
2.4	Maximum ash in the dry matter	5% m/m
2.5	Maximum lactose content	1% m/m
2.6	Maximum sediment (scorched particles)	22.5 mg in 25 g spray dried 15.0 mg in 10 g roller dried
2.7	Foreign matter (such as particles of wood, hairs or fragments of insects)	none in 25 g
2.8	pH value	6.5 - 6.7
2.9	Flavour and odour: not more than slight foreign flavours and odours. The product must be free from offensive flavours and odours.	
2.10	Physical appearance: White to pale cream; free from lumps that do not break up tinder slight pressure	

3. CONTAMINANTS

3.1	Maximum copper content	5 mg/kg
3.2	Maximum lead content	2 mg/kg
3.3	Maximum iron content	20 mg/kg
3.4	Maximum arsenic content	1 mg/kg

4. FOOD ADDITIVES

None

*[*Governments are requested to give a list of the food grade alkali used for the manufacture of the edible caseinate to be listed as food additives.*]*

5. LABELLING

In addition to Sections 1, 2,4 and 6 of the General Standard for the Labelling of Prepackaged Foods (Ref. No. CAC/RS 1-1969), the following specific provisions apply.

5.1 The name of the food

The name of the food shall be edible caseinate, qualified by the name of the cation and the drying process used (spray or roller dried).

5.2 Net contents

The net contents shall be declared by weight in either the metric (Système International units) or avoirdupois or both systems of measurement as required by the country in which the product is sold.

5.3 Name and address

The name and address of the manufacturer, packer, distributor, importer. exporter or vendor of the food shall be declared.

5.4 Country of origin (manufacture)

The country of manufacture of the food shall be declared except that foods sold within the country of manufacture *need* not declare the country of manufacture.

6. METHODS OF SAMPLING AND ANALYSIS

6.1 Sampling: according to FAO/WHO Standard B-l, "Sampling Methods for Milk and Milk Products", paragraphs 2 and 5.

6.2 Methods of analysis: Standard methods recommended jointly by IDF, ISO and AOAC and approved by the FAO/WHO Committee of Government Experts on the Code of Principles concerning Milk and Milk Products.

APPENDIX VIII-A

REPORT OF THE WORKING PARTY ON HYGIENIC REQUIREMENTS

(See paragraphs 128 and 129 of this report)

"The report of the 15th Session of the Committee called attention to an IDF draft paper on hygienic practices and requirements for dried milk and requested government comments. At the 16th Session it was noted that only a few countries responded to this request. However, the notice given to this document served to call the attention of the Committee to the Codex Commission policy that codes of hygienic practice should be developed for foods. Some of these codes have already been developed. The Codex Committee on Food Hygiene is looking to the Commodity Committees to develop these codes of practice with final attention being given by the Committee on Food Hygiene.

Papers before the members of the working party were:

1. 2nd Annex to CX 5/70 - 15th Session, February 1973
2. Code of Hygienic Practice for the Manufacture of Dried Milk from Annual Bulletin for 1970, Part VIII, IDF
3. US Department of Agriculture General Specifications for USDA Approved Plants (excerpt applicable to *dry* milk products)

The main question before the working party was: should the Committee be involved with development of hygienic practices and requirements for products belonging to the scope of the Committee?

In dealing with the main question the working party considered the following points:

1. Is there a need for a code of hygienic practice?
2. Is there a need for hygienic requirements?
3. Should such provisions for the present be applicable only to dried milk, or is there a need for working with all milk products now?
4. Nature of the information to be asked from the governments and organizations using a questionnaire drafted by the Secretariat.
5. Need for comments by governments on the IDF Code of Hygienic Practice for the Manufacture of Dried Milk.

There was a good exchange of views in the working party including a proposal that the Committee should restrict its activity in this area to end product specifications. However, the majority of the working party stated its preference for hygienic practices for manufacture, and for minimum microbiologically related requirements for milk products.

Following are the recommendations of the working party to the Committee:

1. Assume responsibility for initiating codes of hygienic practice (guidelines) for milk and milk products.
2. Assume responsibility for initiating microbiologically related requirements (minimum) for milk and milk products.
3. Decide whether the requirements developed for item 2 should stand alone or be published as a sub-part or appendix to the appropriate standards of identity.

4. Decide on the scope of activity of the Committee's first efforts, e.g. develop codes of practice and requirements for dried milk.
5. Send a questionnaire to governments and organizations requesting information on their regulations, requirements or specifications in the area of hygienic practices and microbiologically related requirements for milk and milk products.
6. Send the governments a copy of the IDF Code of Hygienic Practice for Dried Milk as an example of what is intended. At the same time request governments to give comments on the IDF Code."

APPENDIX VIII-B

FOOD HYGIENE LEGISLATION AND INFORMATION CONCERNING MILK AND MILK PRODUCTS

Questions

(a) Sources of Current Legislation and Information:

Does your country or organization have legislative, regulatory, or advisory texts such as Acts, statutory instruments, orders, and by-laws, guidelines, standards, specifications, recommendations, etc. which:

	Reply		Reference No. of Provisions
	Yes*	No*	in force (if any)**
1) exclusively and specifically concern food hygiene requirements for milk and milk products			
2) General food hygiene requirements applicable to milk and milk products			

(b) Scope of Current Legislation and Information;

Does the documentation mentioned under (a) govern any of the following operations regarding milk and milk products			
Production?			
Processing? Laboratory sampling and analysis?			
Marketing?			
Handling?			
Transport?			
Storage?			
Packaging, Labelling and Lot Identification?			
Distribution?			
Import?			
Export?			

(*) Please check the appropriate column.

(**) Please insert here the number of the relative item(s) appearing in the appended list of legislative and regulatory enactments in force.

Questions

(c) Food Hygiene Standards

Does the legislation mentioned under (a) or any other legislation in force in your country, empower or authorize certain bodies or organizations, in addition to the normal legislative or regulatory authorities, to establish:

		Reply Yes*	Reply No*	Reference No. of Provisions in force (if any)**
	1)mandatory food hygiene standards			
	2)provisions of an advisory nature in the form of codes of hygienic practice, guidelines and other recommended measures, for the purposes set forth under 1)?			
	3)industrial, commercial or trade hygiene specifications aiming at ensuring the quality of food products?			
(d)	Food Hygiene			
	Has your country prescribed limits on:			
	1)the total colony count?			
	2)direct microscope count?			
	3)coliforms?			
	4)yeasts?			
	5)moulds?			
	6)coagulase positive staphylococci?			
	7)salmonellae?			
	Does your country prescribe:			
	8)verification of heat treatments (e.g. phosphatase test)?			
	9)statistical sampling plans?			
	10)other criteria?			

Please indicate to which milk and milk products limits for 1-10 above are laid down:

(*) Please check the appropriate column.

(**) Please insert here the number of the relative item(s) appearing in the appended list of legislative and regulatory enactments in force.

APPENDIX VIII-C

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CODE OF HYGIENIC PRACTICE FOR THE MANUFACTURE OF DRIED MILK

by Dr. H. Torssell (Sweden), Chairman of a Group of Experts including Prof. E. L. Crossley (U.K.), Dr. Fatin (France), Prof. Vos (Netherlands)

PRELIMINARY REMARKS

A Group of Experts to deal with the subject in reference was created by Commission II of IDF in 1960 and from 1960 to 1969 submitted 6 reports to the Commission. The last report in this series (II - Doc 32) was adopted by Commission II at its meeting in 1969 after a few amendments and the following Code is taken from report II - Doc 32.

This Code is not intended as a legal instrument but as a recommendation to manufacturers of dried milk. This Code also has an educational value to the extent that it informs manufacturers on what should be considered as sound manufacturing practices. It was also considered that it should be difficult to ascertain whether such a Code is or is not strictly followed by a manufacturer, and in this respect, the provision of numerical counts (total counts, pathogens, etc) was felt to enable the buyer of dried milk to obtain more easily controlled information on the quality of the powder. In conclusion, it was agreed that neither a Code of Hygienic Practice alone nor bacteriological requirements taken in isolation should afford the necessary safeguard for manufacturer and/or buyer. A combination of both aspects, while still not giving a fully satisfactory answer to the problem, would appear to be the best alternative.

In this connection, reference is made to Appendix II of the Code below. Normally, strict compliance with the rules laid down in the Code of Hygienic Practice should ensure the production of dried milk of satisfactory bacteriological quality and complying with the (provisional) hygienic requirements given in Appendix II.

CODE OF HYGIENIC PRACTICE FOR THE MANUFACTURE OF DRIED MILKS

SECTION I - SCOPE

This Code of Practice applies to milk which is dried with or without having undergone a previous concentration.

SECTION II - DEFINITIONS

For the purpose of this Code effective heat treatment of milk is any time-temperature combination giving a negative phosphatase test when applied to samples collected and treated according to the technique described in Appendix I.

SECTION III - RAM MATERIAL REQUIREMENTS

Raw Milk Supply

It is recommended that the bacteriological quality of the raw milk be assessed using suitable methods. The milk to be subsequently condensed and dried should be handled and, if necessary stored, under conditions which prevent any appreciable bacterial development.

SECTION IV - PLANT FACILITIES AND OPERATING REQUIREMENTS

A. Plant construction and layout

(1) Location, size and sanitary design. The building and surrounding area should be such as can be kept reasonably free from objectionable odours, smoke, dust or other contamination; should be of sufficient size for the purpose intended without crowding of equipment or personnel; should be of sound construction are! kept in good repair; it should also be of such construction as to prevent the entrance or harbouring of insects or birds or vermin; and should be so designed as to permit easy and adequate cleaning.

(2) Sanitary facilities and controls

(a) Water supply. An ample supply of cold water should be available and an adequate supply of hot water where nessary. The water supply should be of potable quality. Standards of potability shall not be less than those contained in the "International Standards for Drinking Water", World Health Organization, 1963. Non-potable water may be used for condensing but condensers of evaporators should be so arranged that any possibility of contamination from cooling waters is avoided.

(b) Plumbing and waste disposal. All plumbing and waste disposal lines (including sewer systems) must be large enough to carry peak loads. All lines must be water-tight and have adequate traps and vents. Disposal of waste should be effected in such a way as not to permit contamination of fresh water supplies. The plumbing and the manner of waste disposal should be approved by the official agency having jurisdiction.

(c) Building. The building should be designed taking into consideration the need for good working conditions for the personnel with emphasis on functional floor layout, good lighting, well ventilated rooms and staff welfare facilities.

(d) Toilets. Flush toilets, washing facilities and changing rooms should be provided. Hand-washing facilities should be provided in positions easily accessible to each processing and packing room.

B. Equipment and Utensils

(1) Materials. All surfaces in contact with milk and milk products should be smooth, free from pits and crevices, unaffected by milk and milk products and capable of withstanding normal cleaning.

(2) Sanitary design, construction and installation. Equipment and utensils should be designed and constructed so as to permit easy and thorough cleaning.

The plant for pre-heating of milk should be provided with a thermometer and an automatic temperature recorder, as well as a flow diversion valve or a pump "cut-out" where practicable (*); all instruments to be so positioned as to indicate the temperature of the milk on the completion of the pre-heating process.

Facilities for the convenient withdrawal of samples for the purpose of control of effective heat treatment should be provided.

(*) PRECAUTIONS WHICH SHOULD BE OBSERVED IF A FLOW DIVERSION VALVE OR PUMP GUT OUT IS INCORPORATED IN THE PREHEATING SYSTEM.

If a flow diversion valve or pump cut out device is incorporated in a preheating system without giving proper attention to some of the other design and operating features of the preheating and evaporating plant, serious difficulties may be encountered. This is particularly important in relation to the modification of existing installations and the following points should be considered if engineering or operational problems are to be avoided:

(1) A device which will automatically shut off the steam supply to the evaporator when the flow diversion valve in the preheating section moves to the divert position.

(2) A means whereby clean water or condensate may be introduced to the milk side of the evaporator automatically when a diversion occurs in the preheating section.

(3) The incorporation of a vacuum break device on evaporators which are fitted with spray condensers to prevent water being sucked back into the evaporator on emergency shutdown.

(3) Equipment and utensils used for inedible or contaminating materials should be identified and should not be used for handling milk and milk products.

C. Hygienic Operating Requirements

(1) Sanitary maintenance of plant, facilities and premises.

The building, equipment, utensils and all other physical facilities of the plant should be kept in good repair and should be maintained in good order and sanitary condition at all times.

Removal of solid or semi-solid wastes from the product preparation and packing areas should be on a continuous or near continuous basis so that these areas are kept clean and there is no danger of contaminating the product. Also they should be disposed of in a manner which will prevent their use for human food. Waste materials should be disposed of in such a manner that they cannot contaminate food and water supplies and cannot offer harbourages or breeding places for rodents, insects, or other vermin.

(2) Vermin control. Effective measures should be taken to protect against the entrance into the premises and the harbourage on the premises of insects, rodents, birds or other vermin.

(3) Exclusion of domestic animals. Dogs, cats and other domestic animals, should be excluded from areas where food is processed or stored.

(4) Plant personnel

Plant management should take necessary measures so that no person obviously suffering from a disease communicable by milk or milk products or known to be afflicted with such disease or suffering from infected wounds, from sores and/or from an acute disease should be permitted to do any work in any section of the plant that would entail any possible risk of contamination from pathogenic organisms of the product itself or surfaces in contact with the product.

(5) Personnel hygiene and food handling practices

(a) All persons working in the plant should maintain a high degree of personal cleanliness while on duty. Clothing should be appropriate to the duties being performed and should be kept clean,

(b) Hands should be washed as often as necessary to conform to hygienic operating practices.

(c) Spitting, eating and the use of tobacco or chewing gum should be prohibited in food handling areas.

(d) All necessary precautions should be taken to prevent the contamination of the food product or ingredients with any foreign substance.

(e) Minor cuts and abrasions on the hands should be appropriately treated and covered. Adequate first aid facilities should be provided to meet these contingencies so that there is no contamination of the food.

(f) Gloves used in food handling should be maintained in a clean and sanitary condition; gloves should be made of an impermeable material.

D. Operating Practices and Production Requirements

(1) Plant cleaning. All containers and equipment coming into contact with milk or milk products should be thoroughly cleaned after each use. All equipment should be cleaned as often as is necessary to prevent contamination of the product and proliferation of microorganisms.

(2) Preparation and processing. Preparatory operations leading to the finished product should be so timed as to permit expeditious handling under conditions which will prevent contamination, deterioration and spoilage.

All milk to be subsequently condensed and dried must be effectively heat treated unless the unconcentrated milk is dried by a process which ensures effective heat treatment.

Concentrated milk leaving the evaporator should be fed directly to the dryer, but if this is not possible for technical reasons it should be stored under such conditions of time and temperature, as will prevent bacterial development during storage.

Heating of concentrated milk may be performed for technological reasons, but shall not be practised for the sole purpose of reducing a total bacterial count, resulting from contamination or unsatisfactory treatment during previous operations.

(3) Packaging. Packaging must be undertaken under strict hygienic conditions to prevent contamination.

E. Laboratory Control Procedures

In addition to any control by the official agency having jurisdiction it is desirable that each plant in its own interest should have access to laboratory control of the products processed.

Care must be taken that arrangements axe provided for the bacteriological control of the processes of manufacture, this to include the coliform and total colony count estimates in preferably one sample of the finished product, representing each storage tank or batch of milk.

However, if this is not possible, at least three samples shall be taken from the daily output from each plant. The first sample shall be taken immediately after the

start of the run, the second sample in the middle of the run, and the third, before the plant is closed down for cleaning.

The results of such daily bacteriological examinations shall be consistently followed and in the event of a material deviation from the normal bacteriological characteristics of the product occurring, appropriate action, including more detailed investigation, shall be taken immediately.

SECTION V - END PRODUCT SPECIFICATION (*)

Appropriate methods should be used for sampling, analysis or other examinations to meet the following specifications:

A. To the extent possible in good manufacturing practice the products should be free from foreign matter.

B. The products should be free from pathogenic microorganisms and from toxic substances in quantities likely to be deleterious to public health.

C. No milkpowder shall be distributed for human consumption until the results of the bacteriological control, done within one week of manufacture, have been passed as satisfactory. In order to be judged as satisfactory the following requirement must be fulfilled:

   Total count estimated according to the IDF Standard 49 shall be less than 200,000 colonies/g.

The records of the bacteriological examinations, carried out in accordance with the foregoing provisions, shall be maintained at each plant, and the daily temperature charts from the preheated milk recorders shall be retained for a period of twelve months. It would also be appropriate to retain the records of bacteriological examinations relating to the various manufacturing processes. All such records shall be available for inspection if so required; means of identifying batches with samples should also be provided.

(*) This Section should be considered also in the light of provisional requirements for dried milk, laid down by an IDF Group of Experts in 1970. These requirements are given in Appendix II.

APPENDIX I

(see Section II of the Code)

SAMPLING FOR PHOSPHATASE TESTS ON THE FLUID MILK

1. Where pre-heating involves holding for 30 minutes;

   The sample may fee withdrawn at any convenient point between the holding vessel and the inlet to the concentrator. Such samples must be cooled immediately to a temperature of less than 21ºC (70ºF) in one minute.

2. Where pre-heating involves holding for 15 seconds or less:

   The sample must be withdrawn from a sample cock at a point before entry to the concentrator in such a manner that the milk is immediately cooled to a temperature below 21ºC (70ºF). All samples taken for phosphatase testing should be stored at a temperature below 21ºG (70ºF) until the test is commenced (not later than 18 hours after sampling).

APPENDIX II

(this refers to Section V of the Code)

HYGIENIC REQUIREMENTS FOR DRIED MILK

The following requirements were submitted to Commission D at its meeting in Melbourne in 1970 (report D - Doc 3). The Commission decided to circulate the paper to member countries, for comments. The requirements below are therefore tentative.

1. Actual lactic acid/lactate content

   Dried milk should be manufactured from fresh raw milk of a good bacteriological quality. This freshness can be estimated by the determination of the actual lactic acid/lactate content of the dried milk.

   If the actual lactic acid/lactate content of the dried milk exceeds 200 mg per 100 g of milk solids not fat (fat free dry milk solids), the freshness of the raw milk should be considered as doubtful.

   This figure of 200 mg is still tentative pending more information.

   In the above statements, the actual lactic acid/lactate content is considered to have been determined according to a method derived from the Davidson method. Such a method is currently under consideration by a joint IDF/ISO/AOAC Group of Experts.

2. Phosphatase

   Raw milk used for dried milk manufacture should be pasteurized; the effectiveness of this pasteurization can best be assessed by the determination of the phosphatase activity in the dried milk. Phoaphatase shall be absent in dried milk; for this phosphatase activity to be considered as absent in dried milk, not more than 4 μg of phenol per ml of reconstituted milk should be found when using a method derived from that of Sanders and Sager. Such a method is currently under consideration by a joint IDF/ISO/AOAC Group of Experts.

3. Colony count

Total colony count in dried milk should not exceed 200,000 per g using the method given in IDF Standard 49.

An exception to this general rule may be considered for powders designated as low heat powders used for certain specific purposes, if experience shows this to be necessary. More information should be obtained on this point.

4. Coliforms and coagulase + staphylococci

Coliforms bacteria should be absent in 1 g of dried milk.

Coagulase positive staphylococci should be absent in 0.1 g of dried milk.

Methods for the determination of the above micro-organisms are currently under consideration by ad hoc IDF Groups of Experts.

APPENDIX IX

IDF/ISO/AOAC COOPERATION IN THE FIELD OF METHODS OF SAMPLING AND ANALYSIS

1. Representatives of the IDF, ISO and AOAC met in Rome on 7 September 1973 to discuss progress on collaboration between IDF, ISO and AOAC in connection with analytical standards for the Code of Principles concerning Milk and Silk Products.

Present:

Ir. J. B. Roos (Chairman)	ISO
Mrs. M. Tuinstra-Lauwaars	ISO
Dr. R. W. Weik	AOAC
Prof. J. Casalis	IDF
Ir. R. L. Demeter	IDF
[1] Mr. J. R. Sherk	Chairman, Committee of Government Experts
[1] Dr. E. Ackermann	Vice-Chairman, Committee of Government Experts
[1] Dr. F. Winkelmann	FAO
[1] Mr. W. L. de Haas	FAO
[1] Mrs. B. Dix	FAO
[2] Dr. G. Vos	EEC

A document prepared jointly by the IDF and ISO Secretariats formed the basis of the discussion.

2. Joint IDF/ISO/AOAC Standards submitted to the 16th Session of the Committee of Government Experts

2.1 Fat in whey cheese - submitted to the Committee at Step (g).

2.2 Fat in cream - submitted to the Committee at Step (g).

2.3 Chloride in cheese - submitted to the Committee at Step (d)

2.4 Foreign fat in milkfat - 2 methods submitted to the Committee at Step (d) (the IDF/ISO/AOAC Committee recommends the GLC method but requests comments of the Committee on the desirability of having two methods).

2.5 Water, solids not fat and fat content of butter - submitted to the Committee at Step (d).

3. Present Status of Standards directly related to the Code of Principles

During the discussion of microbiological methods and the development of methods to determine quality factors it was emphasized that the Committee has not yet determined if standards of quality, hygienic requirements and microbiological standards will be developed. If, during the 16th Session, the Commitee does decide to develop such standards the following subjects marked with an asterisk will be directly related to the Code of Principles.

*3.1 Colony count
A draft method has been developed and will be circulated to the ISO and AOAC, and published by IDF.

*3.2 Coliforms
A draft method has been developed and will be circulated to ISO, IDF and AOAC.

*3.3 Psychrotrophs
A Joint Group of Experts has been established. Work is in progress.

*3.4 Coagulase positive staphylococci A Joint Group of Experts has been established. Work is in progress.

[1] Present for part of the session only
[2] Observer for EEC

*3.5 Protein, ash, free acidity in casein
Draft methods have been developed. A meeting of the Joint Group or Experts is planned for early 1974.

*3.6 Lactic acid in dried milk
A draft method has been developed and will be circulated to ISO and AOAC and published by IDF.

*3.7 Copper and heavy metals
A Joint Group of Experts has been established. Work is in progress.

3.8 Nitrate in cheese
Two draft methods (reduction and nitration) are available. The Joint Group of Experts has to decide which one is to be preferred.

3.9 Moisture in dairy products
A method for moisture in cream, milk and evaporated milk will be discussed at a meeting of the Joint Group of Experts on 17 September 1973. Work is continuing on the Karl Fischer method.

3.10 Selection of samples
A draft standard will be circulated to IDF, ISO and AOAC and will be submitted to the Committee at Step (c) prior to the 17th Session.

3.11 Foreign fats in milk fat
Work is in progress to develop a GLC method for fatty acid determination. The Joint Group of Experts will meet on 18 September 1973.

3.12 General Röse-Gottlieb method
A Joint Group of Experts has been formed to consider revision of all Röse-Gottlieb methods. During these revisions comments previously submitted by Governments which were not incorporated in the present methods will be considered. The ultimate goal is to produce a single Röse-Gottlieb method with special requirements for each product.

3.13 Peroxide and TBA. values in anhydrous milkfat
A draft method will be circulated to ISO, IDF and AOAC and may possibly be submitted to the Committee at Step (c) prior to the 17th Session.

3.14 Pesticide residues
A draft standard is available and will be submitted to the Committee at Step (c). The ISO/IDF/AOAC Committee recommends that, for analytical reasons, the results be expressed on a fat basis rather than on a product basis.

3.15 Detection of reconstituted milk in fluid milk products
The ISO/IDF/AOAC Committee requests additional guidance from the Committee of Government Experts regarding the intended scope of this subject. Limited work is in progress.

4. Standards not directly related to the Code of Principles

The IDF/ISO/AOAC Committee reviewed progress on the following subjects:

4.1 Lactose in the presence of other reducing sugars
Study on several methods is in progress.

4.2 Protein in milk (routine method)
A draft on the dye-binding method is available. The Joint Group of Experts will meet on 14 September 1973.

4.3 Fat, total solids and egg yolk content of ice-cream
A draft standard for total solids is available. Determination of fat will be included under the version of the Röse-Gottlieb methods (3.12).

4.4 Identification and differentiation of low heat powders
The Joint Group of Experts is making progress and comparative studies will be carried out.

4.5 Apparatus and glassware
Work is in progress.

4.6 Instrumental methods Work is in progress.

4.7 Fat content of milk (routine method)
Draft standard of the Gerber method is available.

4.8 Fat content of cheese (routine method)
Draft standard of the Van Gulik method is available.

It is expected that Joint Groups of Experts will be established to consider
- Antibiotics
- Mycotoxins

5. Date and place of next meeting

It was agreed that the next meeting of the representatives of the three organizations should be held in Rome immediately preceding the 17th Session of the Committee of Government Experts. It is hoped to have an interim meeting in February 1974.

APPENDIX X-A

Step (d)

Submitted to Governments for Comments

JOINT IDF/ISO/AOAC PROPOSAL

DETERMINATION OF WATER, SOLIDS-NOT-FAT AND FAT CONTENTS OF BUTTER ON ONE TEST PORTION

REFERENCE METHOD

1. SCOPE

This standard describes a reference method for the determination of the water, solids-not-fat (including salt), and fat contents of butter.

2. DEFINITION

2.1 Water content

The water content of butter is defined as the loss of mass, expressed as percentage by mass, as determined by the procedure described under 7.2 and 8.1.

2.2 Solids-not-fat content

The solids-not-fat content of butter is defined as the percentage by mass of substances as determined by the procedure described under 7.3 and 8.2.

2.3 Fat content

The fat content of butter is defined as the percentage by mass obtained by subtracting the water content and the solids-not-fat content from 100.

3. PRINCIPLE

3.1 For the determination of the water content

The water content is determined gravimetrically by drying a known quantity of butter at 102 ± 2ºC.

3.2 For the determination of the solids-not-fat content

The solids-not-fat content is determined gravimetrically after extracting the fat from the dried butter with light petroleum or hexane.

4. REAGENT

Light petroleum (petroleum ether) with any boiling range between 30ºC and 60ºC. Alternatively, hexane may be used. The reagent should not leave more than 1 mg residue after evaporation of 100 ml.

5. APPARATUS

5.1 Analytical balance capable of weighing to 0.1 mg.

5.2 Drying oven, well ventilated and thermostatically controlled (adjusted to operate at 102 ± 2ºC).

5.3 Glass, porcelain or corrosion-proof metal dishes, at least 25 mm high and at lease 50 mm in diameter.

5.4 Sintered-glass filter crucibles, 16-40 μm porosity, with suction flask.

5.5 Stirrer with end-piece of flexible, inert material.

5.6 Desiccator with suitable drying agent, e.g., indicating silica gel, or equivalent desiccant.

6. SAMPLING

See FAO/WHO Standard B-l "Sampling Methods for Milk and Milk Products".

7. PROCEDURE

7.1 Preparation of the sample

Bring the sample in the original unopened container, which should be from half to two-thirds full, to a temperature at which the sample will be soft enough to facilitate a thorough mixing to a homogeneous state (either by a mechanical shaker or by hand) without any rupture of emulsion. The temperature of mixing should normally not exceed 35°C.

Cool the sample to ambient temperature, mixing being continued until cooling is completed. As soon as possible after cooling, open the sample container and stir briefly (not exceeding 10 seconds) with a suitable device e.g. spoon or spatula, before weighing.

7.2 Determination of water

7.2.1 Dry a dish (5.3) in the oven (5.2) for at least one hour.

7.2.2 Allow the dish to cool in the desiccator to the temperature of the balance room and weigh to the nearest 0.1 mg.

7.2.3 Weigh into the dish, to the nearest 1 rag, between 2 and 6 g of the butter sample. (Samples should be at least 5 g for unsalted butter.)

7.2.4 Place the dish in the oven for 2 hours.

7.2.5 Allow the dish to cool in the desiccator to the temperature of the balance room and weigh to the nearest 0.1 mg.

7.2.6 Repeat the drying process for 1 hour and at additional half-hour intervals until constant mass (mass change not exceeding 0.5 mg). In the event of an increase in mass, the lowest mass recorded is taken for the calculation.

7.3 Determination of solids-not-fat

7.3.1 Dry the glass filter crucible in the oven (5.2) for at least 1 hour.

7.3.2 Allow the crucible to cool in the desiccator to the temperature of the balance room and weigh to the nearest 0.1 mg.

7.3.3 Add 10 to 15 ml of warm (ca 35º) light petroleum (4) to the dish containing the dry matter left from the water determination (7.2) so as to dissolve the fat.

7.3.4 Detach as much as possible of the sediment adhering to the dish by using the stirrer (5.5), and quantitatively transfer the contents over the stirrer tip into the crucible (5.4).

7.3.5 Repeat operations 7.3.3 and 7.3.4 five times.

7.3.6 Wash the sediment in the crucible with 25 ml of warm light petroleum.

7.3.7 Dry both dish and crucible in the oven for 30 minutes.

7.3.8 Allow both dish and crucible to cool in the desiccator to the temperature of the balance room and weigh to the nearest 0.1 mg.

7.3.9 Repeat operations 7.3.7 and 7.3.8 for periods of 30 minutes until constant mass (mass change not exceeding 0.5 mg).

8. EXPRESSION OF RESULTS

8.1 Method of calculation of the water content

The percentage by mass of water is equal to

$$\frac{m_2 - m_1}{m_2 - m_0} \times 100$$

where:

m_2 = mass, in grammes, of test portion and dish (clause 7.2.3)

m_1 = mass, in grammes, of test portion after drying (clause 7.2.6)

m_o = mass, in grammes, of empty dish (clause 7.2.2)

Take the result as the arithmetic mean of the results obtained expressed to the first decimal if the requirement of clause 8.4.1 is satisfied.

8.2 Method of calculation of the solids-not-fat content

The percentage by mass of solids-not-fat is equal to

$$\frac{(A_1 - A_0) + (m_3 - m_0)}{m_2 - m_0} \times 100$$

where:

A_o = mass, in grammes, ofempty crucible (7.3.2)

A_1 = mass, in grammes, ofcrucible containing sediment (7.3.9)

m_2 = mass, in grammes, oftest portion and dish (7.2.3)

m_O = mass, in grammes, ofempty dish (7.2.2)

m_3 = mass, in grammes, ofdish after removal of sediment (7.3.9)

Take as the result the arithmetic mean of the results obtained, to the first nearest decimal, if the repeatability requirement (8.4.2) is satisfied.

8.3 Method of calculation of the fat content

The percentage, by mass, of fat is equal to

$$100 – (E + S)$$

expressed to the nearest first decimal place, where:

E = percentage by mass of water (calculated in 8.1)

S = percentage by mass of solids-not-fat (calculated in 8.2).

8.4 Repeatability

8.4.1 For the determination of the water content:

The difference between results of two determinations carried out simultaneously or in rapid succession by the same analyst should not exceed 0.1 g of water per 100 g of the product.

8.4.2 For the determination of the solids-not-fat content:

The difference between the results of two determinations carried out simultenously or in rapid succession by the same analyst should not exceed 0.1 g of solids-not-fat per 100 g of the product.

9. TEST REPORT

The test report should show the method used and the result obtained. It should also mention any operating conditions not specified in this standard, or regarded as optional, as well as any circumstances that may have influenced the result. The report should include all details required for the complete identification of the sample.

APPENDIX X-B

Step (d)

Submitted to Governments for Comments

JOINT IDF/ISO/AOAC PROPOSAL

DETERMINATION OF CHLORITE CONTENT OF CHEESE

REFERENCE METHOD

(DRAFT INTERNATIONAL STANDARD ISO/DIS 2970)

1. SCOPE AND FIELD OF APPLICATION

This International Standard specifies a reference method for the determination of the chloride content of cheese.

The method is applicable to all cheeses containing not less than 0.5% of chloride.

2. REFERENCE

ISO/R 707, Milk and milk products - Sampling.

3. DEFINITION

Chloride content of cheese: The substances determined by the procedure specified. The chloride content may be expressed as a percentage by mass of Cl or sodium chloride or any other chloride used in the presence of ammonium iron (III) sulphate as indicator.

4. PRINCIPLE

Destruction of the organic matter of the cheese by means of potassium permanganate and nitric acid, and determination of the chloride content by argentometric titration in nitric acid solution*

5. REAGENTS

All reagents used shall be of analytical reagent quality.

5.1 Silver nitrate, approximately 0.1 N solution, standardized to the fourth decimal.

5.2 Potassium or ammonium thiocyanate, 0.1 N solution, standardized to the fourth decimal.

5.3 Ammonium iron (III) sulphate, saturated solution.

5.4 Nitric acid, ρ_{20} 1.40 to 1.42 g/ml, which corresponds to 66.9 to 71.6% (m/m) HNO_3.

5.5 Potassium permanganate, saturated solution.

5.6 Oxalic acid or glucose.

5.7 Water, not containing any impurity likely to affect the determination.

6. APPARATUS

6.1 Balance

6.2 Conical flask, capacity 300 ml.

6.3 Pipette, calibrated to deliver 25 ml, conforming to ISO/R 648.

6.4 Graduated cylinders, capacities 15.25 and 100 ml.

6.5 Burette, graduated in 0.1 ml, capacity 50 ml, conforming to ISO/k 385.

6.6 Suitable grinding device.

7. SAMPLING

See ISO/R 707.

8. PROCEDURE

8.1 Preparation of the test sample[1/]

Before analysis, remove the rind or smear or mouldy surface layer of the cheese so as to give a test sample representative of the cheese such as it is usually consumed.

Grind the sample by means of an appropriate device *(*6.6*);* mix the ground mass quickly and grind if possible a second time and mix again thoroughly. Clean the grinding device after each sample. If the sample cannot be ground, mix it thoroughly by intensive kneading.

Transfer the test sample to an airtight container until the analysis, which shall be carried out on the same day. If delay is inevitable, take all precautions to ensure proper conservation and to prevent condensation of moisture on the inside surface of the container.

Cheese in brine shall be sampled by taking fragments of at least 200 g each along with sufficient brine to cover the cheese in the sample container. Prior to analysis, place the sample on filter paper for 1 to 2 h.

8.2 Test portion

Weight, to the nearest 0.001 g, about 2 g of the test sample into the conical flask (6.2),

8.3 Determination

8.3.1 Add, by means of the pipette (6.3, 25 ml of silver nitrate solution (5.1), then add, by means of the graduated cylinder (6.4), 25 ml of nitric acid (5.4) and mix thoroughly.

8.3.2 Heat to boiling, add approximately 10 ml of potassium permanganate solution (5.5) and keep the reaction mixture boiling gently.

When the reaction mixture decolorizes, add more potassium permanganate solution; (generally another 5 to 10 ml are sufficient). The presence of excess permanganate (brown colour) indicates that destruction of the organic matter is complete. Remove the excess by the addition of a small amount of oxalic acid or glucose (5.6).

8.3.3 Add 100 ml of cold water (5.7) and 2 ml of ammonium iron (III) sulphate solution (5.3) and mix thoroughly.

8.3.4 Immediately titrate the excess silver nitrate with the thiocyanate solution (5.2) until the solution shows a red-brown colour which persists for about 30 s.

8.3.5 Carry out a blank test using 2 ml of water in place of 2 g of cheese.

8.3.6 Carry out two determinations on the same test sample.

9. EXPRESSION OP RESULTS

9.1 Method of calculation and formula

Calculate the chloride content, as a percentage by mass, by means of the formula

$$\frac{(V_1 - V_2) \times f \times T}{m}$$

where

V_1 is the volume, in millilitres, of thiocyanate solution used for the blank test;

V_2 is the volume, in millilitres, of thiocyanate solution used for the test portion;

T is the exact normality of the thiocyanate solution;

m is the mass, in grams, of the test portion;

f is the factor for expressing the result as a percentage of any chloride. The numerical values are, for example:

f = 3.55 for expression as % Cl^-

f = 5.85 for expression as % NaCl

f = 7.46 for expression as % KCl

Take as the result the arithmetic mean of the two determinations if the requirement concerning: repeatability (9.2) is satisfied. Report the result to the second decimal place.

[1/] Special requirements for the preparation of the test sample of any type or variety of cheese might be laid down in national standards.

9.2 Repeatability

The difference between the results of two determinations carried out simultaneously or in rapid succession by the same analyst shall not exceed 0.04 g of Cl per 100 g of the cheese (or the equivalent quantity of chloride used).

10. TEST REPORT

The test report shall show the method used and the result obtained. It shall also mention all operating conditions not specified in this International Standard, or regarded as optional, as well as any circumstances that may have influenced the result.

The report shall include all details required for the complete identification of the sample.

APPENDIX X-C
Step (d)

Submitted to governments for comments

JOINT IDF/ISO/AOAC PROPOSAL (*)
(IDF Standard FIL-IDF 54:1970)

DETECTION OF VEGETABLE FAT IN MILK FAT BY GAS-LIQUID CHROMATOGRAPHY OF STEROLS

1. SCOPE

This standard sets out a reference method for detecting the presence in milk fat of vegetable fats containing β-sitosterol. It is complementary to the method described in International Standard FIL-IDF 32: 1965 « Detection of vegetable fat in milk fat by the phytosteryl acetate test». The limit of detection depends upon the β-sitosterol content of the added vegetable fat.

2. PRINCIPLE OF THE METHOD

Sterol digitonides prepared as described in International Standard FIL-IDF 32: 1965 (§ 7.2) are dissolved in a mixture of formamide and dimethyl formamide. The liberated sterols are extracted with pentane. The sterols are separated by gas-liquid chromatography. If, on the chromatogram, a peak with the retention time of β-sitosterol is obtained, the presence of vegetable fat in the fat sample under investigation is demonstrated. Peaks of other phytosterols may support this conclusion.

3. REAGENTS AND MATERIALS

3.1 Mixture of equal volumes of formamide and dimethyl formamide.

3.2 n-Pentane.

3.3 *Column packing:* 2-4 % loading of a methyl silicone gum rubber, stable up to at least 300 ºC, on a flux-calcined diatomaceous earth, acid washed and silanized, mesh size 80/100 or 100/120.

3.4 *Sensitivity test solution:* 1 mg cholesterol in 1 ml n-pentane, freshly prepared from milk fat as described in § 6.2.

3.5 *Peak resolution test solution:* 0.9 mg rape seed oil phytosterols and 0.1 mg cholesterol in 1 ml n-pentane, freshly prepared as described in § 6.2.

3.6 *Reference test solution:* 1 mg soyabean oil phytosterols in 1 ml n-pentane, freshly prepared as described in § 6.2.

(*) This standard method was produced by an IDF Group of Experts reporting to Commission V (Chemical Analysis) and was adopted for publication (under the reference V-Doc. 100) at the meeting of Commission V in June 1969.

3.7 Nitrogen carrier gas.

3.8 Hydrogen.

3.9 Oxygen or air.

4. APPARATUS AND AUXILIARIES

(The more usual laboratory equipment is not mentioned.)

4.1 Gas chromatograph, fitted with hydrogen flame ionization detector, silver or glass injection

system, or direct-on- column injection device, and recorder.

4.2 Gas chromatographic tube, glass or stainless steel, U-shaped or coiled, length 100-200 cm, inside diameter 3-4 mm.

Note: Since some types of stainless steels cause false results by deterioration of sterols, glass is recommended.

4.3 Micro-syringe, capable of delivering a volume of up to 6 or 10 μl.

5. SAMPLING

See International Standard FIL-IDF 50 « Standard methods for sampling milk and milk products ».

6. PROCEDURE

6.1 Preparation of test sample

See International Standard FIL-IDF 32: 1905 (§ 7.1).

6.2 Preparation of sterols

Dissolve about 10 mg sterol digitonide, prepared as described in International Standard FIL-IDF 32: 1965 (§ 7.2) in 0.5 ml of a mixture of equal volumes of formamide and dimethyl formamide in a small test tube, if necessary with gentle heating. Shake the solution, when cool, with 2.5 ml n-pentane. Let the layers separate and use the clear upper pentane layer, containing the liberated sterols, for gas chromatographic analysis.

6.3 Gas-liquid chromatographic conditions

Column temperature : 220-250 ºC.

Temperature of injection system, if it can be separately heated: 20-40 ºC above column temperature. Nitrogen flow rate: 30-60 ml/min. Disconnect detector and equilibrate new columns under these conditions for 16-24 hours. Connect detector, ignite flame and regulate hydrogen and oxygen or air flow rates so as to obtain appropriate flame height and detector sensitivity. Start the recorder at a suitable chart speed, adjust zero setting and attenuator. If the base line is steady, the apparatus is ready for use.

6.4 Sensitivity test

Inject 3-5 μl of the sensitivity test solution (3.4). Only one peak of cholesterol will appear on the gas chromatogram (figure 1). Adjust attenuator so as to obtain approximately full scale deflection on the recorder.

6.5 Peak resolution test

Inject 3-5 μl of the peak resolution test solution (3.5). Peaks of cholesterol, brassicasterol, campesterol and β-sitosterol will appear on the gas chromatogram (figure 2). Measure the retention distances (distance from sample injection to maximum peak height) of the peaks, d_C for cholesterol, d_B for brassicastrol, d_C for campesterol, and d_S for β-sitosterol, and the peak base widths (retention dimension between intersections of base line with tangents to the points of inflection on the front and rear sides of the peak) w_B for cholesterol and w_B for brassicasterol. Then the peak resolution:

$PR = 2 (d_B - d_{CH})/(w_B + w_{CH})$ shall bo at least 1.

Calculate relative retention times (cholesterol = 1.00) for

brassicasterol, eampestorol, and β-sitosterol.

6.6 Reference test

Inject 3-5 μl of the reference test solution (3.6). Peaks of campestral, stigma sterol, and β-sitosterol will appear on the gas chromatogram (figure 3). Measure the retention distances of the peaks, d_C for campesterol, d_{ST} for stigma-sterol, and d_S for β-sitosterol.
Calculate relative retention times. which are approximately:

Cholesterol	1.00 (about 15 minutes)
Brassicasterol	1.13-1.15
Campesterol	1.32-1.34
Stigmasterol	1.44-1.46
β-sitosterol	l.66-1.68

6.7 Analysis

Inject 3-5 μl of the sample solution (6.2) and switch the attenuator to a four times (usually two steps) lower attenuation factor. Record the gas chromatogram.

7. EXPRESSION OF RESULTS

If on the gas chromatogram a peak with the relative retention time of β-sitosterol and a height of at least 2 % of full scale is observed, the presence of β-sitosterol is indicated and the fat sample under investigation from which the sterols have been isolated, is considered to contain vegetable fat. The presence, on the gas chromatogram, of peaks of other phytosterols such as campesterol or stigmasterol may support the conclusion.

8. SENSITIVITY

The presence of at least 0.5 % β-sitosterol in sterol mixtures can be demonstrated by the method of this standard. The limit of detection of vegetable fat in milk fat cannot be given since this depends on the β-sitosterol content of the fat used for admixture, i.e. upon the nature of the fat or mixture of fats added to the milk fats.

9. TEST REPORT

The test report shall refer to this standard and show the results obtained. It shall also mention any operating conditions not specified *in* this standard, or regarded as optional, as well as circumstances that may have influenced the results. It shall include all details required for the complete identification of the sample. The test report shall be accompanied with the recorded gas chromatogram

.

FIGURE 1

GLC of MILK FAT STEROLS CPG des STÉROLS DE LA MATIÈRE GRASSE DE LAIT

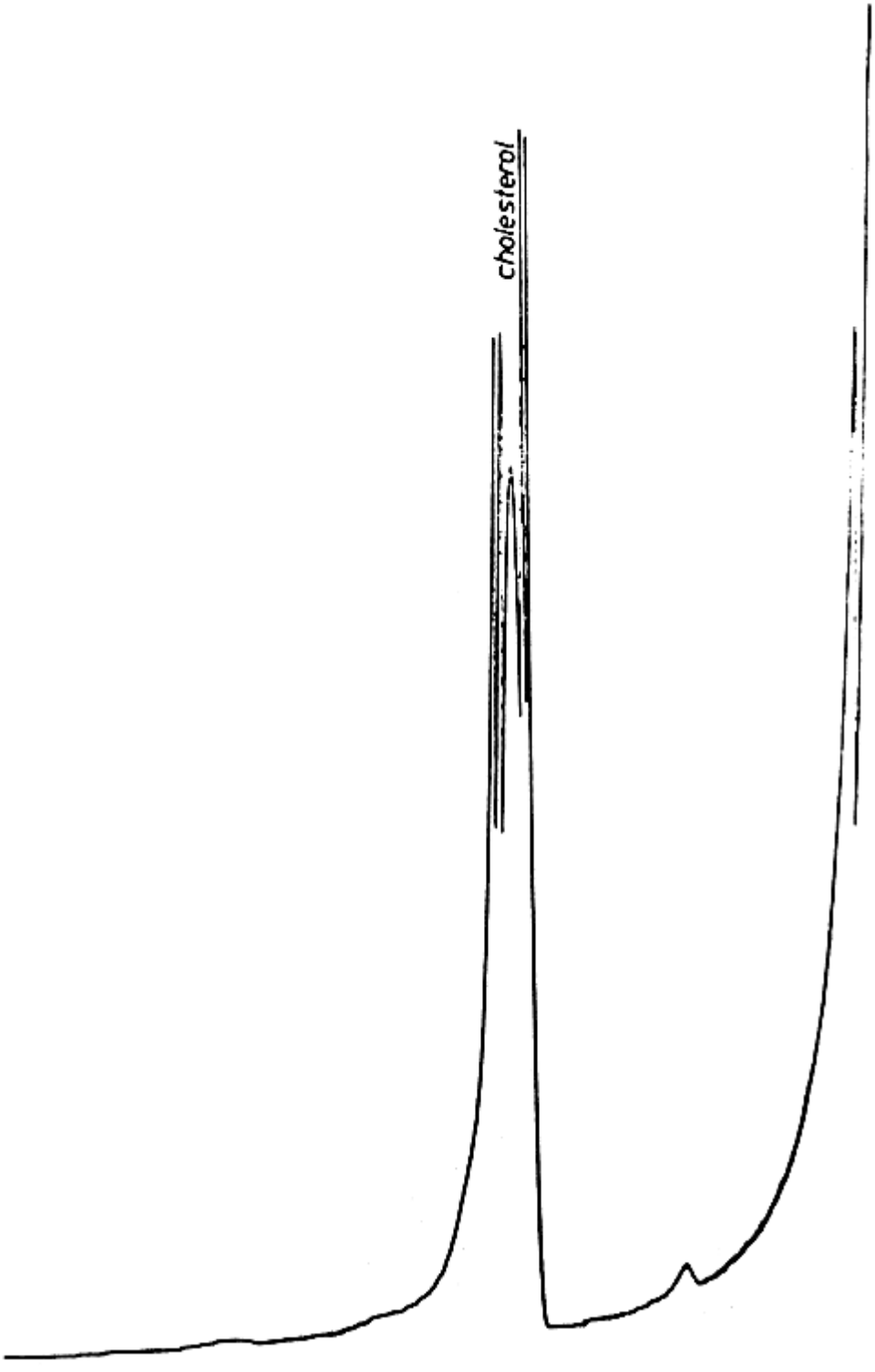


FIGURE 2

GLC of RAPE SEEDOIL STEROLS and CHOLESTEROL

CPG des STÉROLS DE L'HUILE DE COLZA ADDITIONNÉS DE CHOLESTÉROL

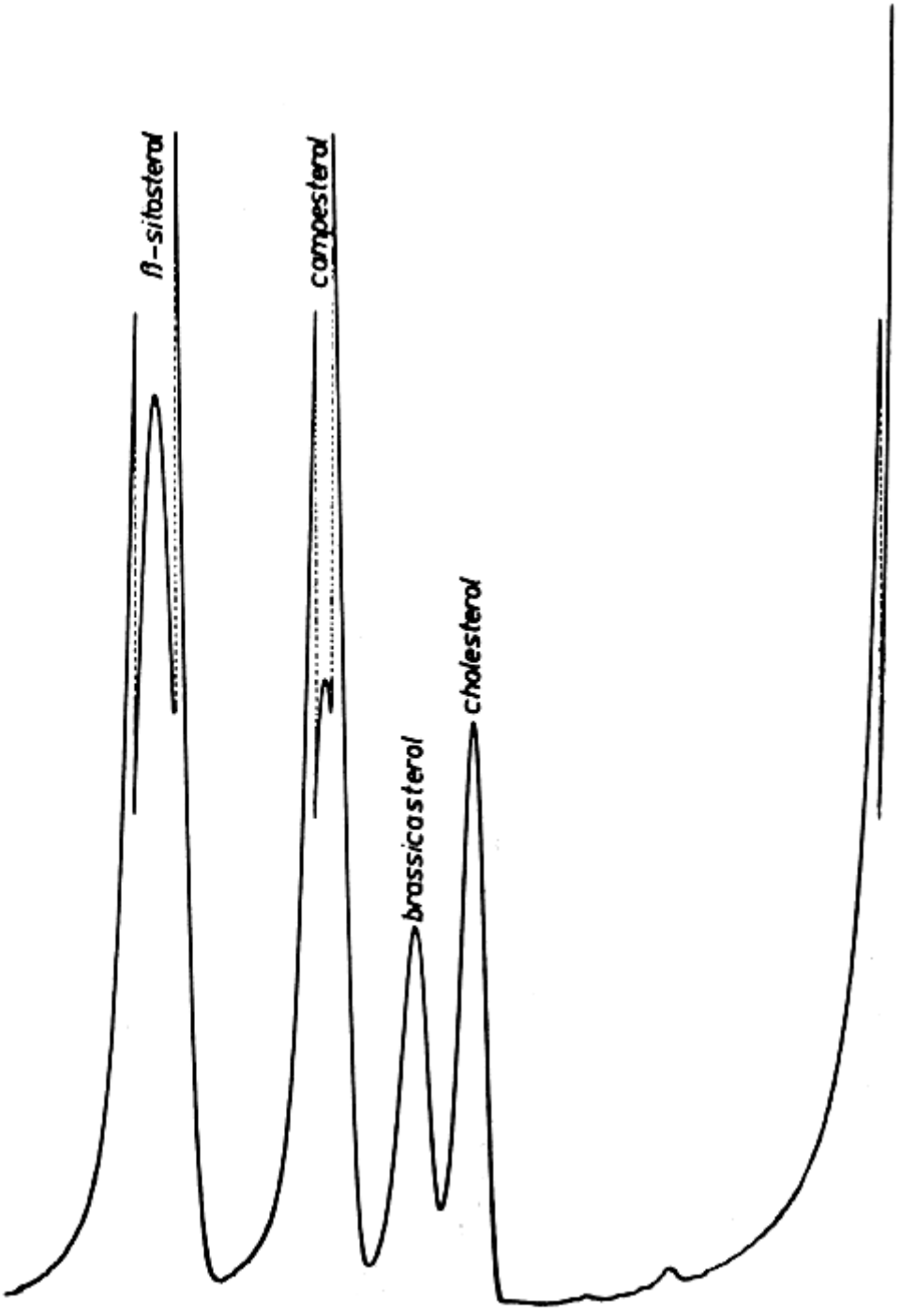
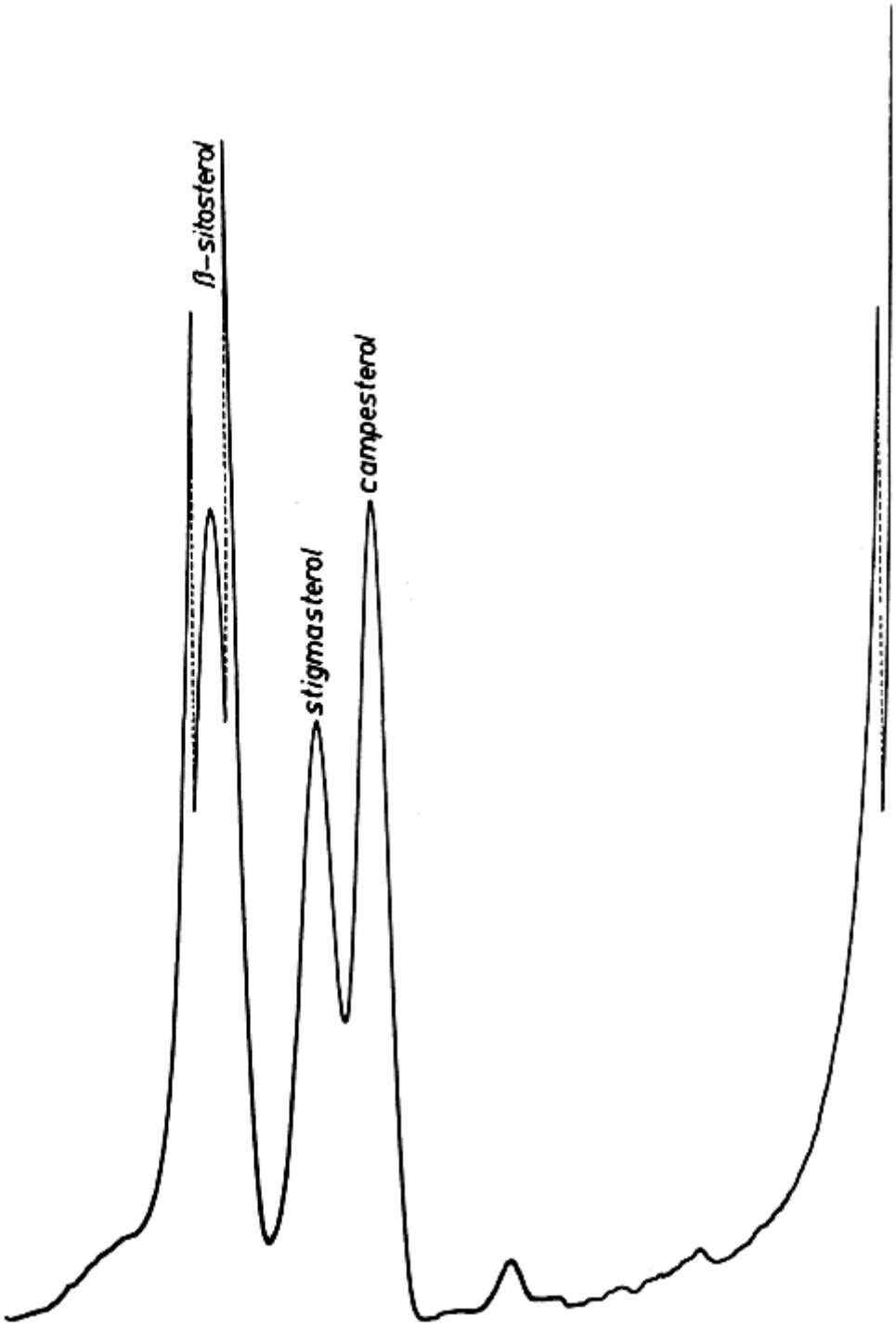


FIGURE 3

GLC of SOYABEAN OIL STEROLS CPG des STÉROLS DE L'HUILE DE SOJA



APPENDIX X-D
Step (d)

Submitted to governments for comments

JOINT IDF/ISO/AOAC PROPOSAL (*)
(IDF Standard FIL-IDF 32:1965)

(*) The present standard is the final outcome of the work done in this field over a period of years by an *ad hoc* IDF Working Party reporting to Commission V-Chemical Analysis. The standard was approved for publication at the Federation's meetings in July 1965.

Detection of VEGETABLE FAT IN MILK FAT by the phytosteryl acetate test

1. SCOPE

The method is intended for the detection of the presence of the more common vegetable fats in milk fat.

2. DEFINITION OF TOTAL STEROL CONTENT

The total sterol content of the fat means the content of compounds precipitable as digitonides, expressed in percent by mass, as determined by the procedure described below.

3. PRINCIPLE OF THE METHOD

3.1 The sterol content is determined gravimetrically after saponification of the fat and precipitation of the sterols by adding an alcoholic digitonin solution to the soap solution.

3.2 The melting point of the steryl acetate is determined after acetylating the sterol digitonides with acetic anhydride.

3.3 The crystal form of the sterols is microscopically examined after converting the steryl acetates into the sterols by saponification with an alcoholic potassium hydroxide solution.

4. REAGENTS

4.1 Potassium hydroxide solution (dissolve 400 g of potassium hydroxide in 600 g of distilled water).

4.2 Digitonin solution (dissolve 10 g digitonin in one litre of ethanol 95-96 % v/v).

4.3 Ethanol (95-96 % v/v).

4.4 Ethanol (80 % v/v).

4.5 Diethyl ether.

4.6 Acetic anhydride.

4.7 Pentane or light petroleum (boiling range 40-60 ºC).

4.8 Copper sulphate solution (dissolve 70 g of crystallized copper sulphate in 1 litre of water).

4.9 Anhydrous sodium sulphate.

(All reagents should be of analytical grade.)

5. APPARATUS

(Usual laboratory equipment is not mentioned.)

5.1 Conical flasks of 500 ml capacity with ground-in air condensors.

5.2 Micro-filtering device: cf. P. C. den Herder-*Neth. Milk and Dairy J.* 9 (1955),

p. 261 or Official *Methods of Analysis of the AOAC,* 9th Ed., 1960, p. 372.

5.3 Melting point apparatus.

5.4 Pyrex glass test tubes (diameter 12 mm; length 35 mm).

5.5 Melting point tubes (internal diameter 0.8 to 1.0 mm, length 50 mm).

5.6 Microscope slides and cover slips.

5.7 Ordinary or polarizing microscope (linear magnification 200 x).

6. SAMPLING

See International Standard FIL-IDF 2, 1958, Methods of sampling milk and milk products.

7. PROCEDURE

7.1 Preparation of test sample

7.1.1 Buffer

Melt about 50 g of the butter sample in an ordinary drying oven at a temperature below 50 ºC until the fat and water layers separate. Separate the fat layer by decantation and clarify the fat in the oven at a temperature of about 40 ºC by filtering it through a dry paper filter, taking care that no water slips onto the filter.

7.1.2 Milk and cream

Centrifuge the sample to obtain a cream of about 40 % fat. Churn the cream in a laboratory churn. Collect the butter lumps and proceed as described under 7.1.1.

7.1.3 Cheese

Rub the sample in a mortar with anydrous sodium sulphate until a granular mass is produced.

Extract the mass with pentane or light petroleum (a continuous extraction apparatus may be used) and evaporate the solvent in a boiling water-bath

7.1.4 Condensed milk, evaporated milk; ice-cream

Add to the sample twice its volume of boiling water and heat the mixture on a boiling water-bath until the temperature is 75 ºC. Add an amount of copper sulphate solution equal to one-tenth of the volume of the mixture and continue heating until the precipitate coagulates. Filter the precipitate through a paper filter and wash it with warm water until the filtrate is colourless. Carefully drain the precipitate, rub it in a mortar with anhydrous sodium sulphate and proceed as described under 7.1.3.

7.1.5 Dried milk

Rub the sample in a mortar with some water so as to obtain a clotted mass. Allow it to stand for about 15 minutes. Then add anhydrous sodium sulphate and rub again until a granular

mass is produced. Extract the mass with pentane or light petroleum (a continuous extraction apparatus may be used) and evaporate the solvent on a boiling water-bath.

7.2 Determination of the total sterol content

7.2.1 Weigh to the nearest 100 rag about 15 g of the fat in a conical flask of 500 ml capacity.

7.2.2 Add 10 ml of potassium hydroxide solution and 20 ml of ethanol (95-96 % v/v).

7.2.3 Place the air-cooled condensor on the flask, heat it on a boiling waterbath, with swirling, until the solution has become clear, and continue boiling for half an hour.

7.2.4 Add 60 rat of water and then 180 ml of ethanol (95- 96 % v/v), and raise the temperature to about 40 ºC.

7.2.5 Add 30 ml of the alcoholic digitonin solution (1 %), swirl and allow to cool. Place the flask in a refrigerator at about 5 ºC for about twelve hours or overnight.

7.2.6 Collect the precipitate of sterol digitonide by filtration through a medium *speed* paper filter in a Büchner funnel (diameter 8 cm).

7.2.7 Wash the precipitate with water at about 5 ºC until the filtrate stops foaming, then once with 25 50 ml of ethanol (95-96 % v/v) and once with 25-50 ml of diethyl ether.

7.2.8 Dry the filter paper with the precipitate on a watch- glass *in* a drying oven at 102 ± 2ºC for ten-fifteen minutes.

7.2.9 Fold the filter paper in two, allowing the precipitate to come off as a pellicle, transfer the precipitate into a weighing bottle and weigh.

7.3 Preparation of the steryl acetates and determination of the melting point.

7.3.1 Transfer 100 + 5 rag of the sterol digitonide to a test tube, add 1 ml of acetic anhydride, and heat the tube in a glycerol bath at 130-145 ºC until the precipitate has dissolved.

Do not use direct heat, since spattering may occur. Continue heating for two minutes and allow to cool to about 80 ºC.

7.3.2 Add 4 ml of ethanol (95-96 % v /v), mix, heat slightly to dissolve any steryl acetate which may tend to crystallize out.

7.3.3 Filter the still warm solution through a small medium speed paper filter impregnated with ethanol, and collect the filtrate in another teat tube.

7.3.4 Heat the filtrate in the test tube carefully until it boils gently.

7.3.5 Keep the solution boiling and add carefully while shaking vigorously, drop by drop from a pipette 1 to 1.5 ml of water until the steryl acetate is just about to precipitate but still remains in solution. Avoid superheating.

7.3.6 Add a few drops of ethanol (95-96 % v /v) to redissolve any precipitated steryl acetate.

7.3.7 Allow to cool in air for two hours and finally in ice- water for half-an-hour.

7.3.8 Filter the crystallized steryl acetates on a small disk of hardened fast speed filter paper by suction in a glass micro filtering device and rinse the crystals with 1 ml of ethanol (80 % v/v).

7.3.9 Redissolve the crystal cake by heating it over a micro burner in a short Pyrex glass tube with 1 ml of ethanol (95-96 % v/v).

7.3.10. Allow to cool first in air for 15 minutes and then in ice-water for five minutes. Filter the crystallized steryl acetates as described above (7.3.8).

7.3.11 Repeat the redissolving, recrystallization and filtration to obtain a third and occasionally a fourth or fifth recrystallization.

7.3.12 Dry the crystal cake on the paper in a drying oven first at about 30 ºC and then at 102 ± 2 ºC for ten- fifteen minutes.

7.3.13 Disintegrate the crystal cake, mix the crystals on a watch-glass and fill a melting point tube to a height of about 3 mm. Determine the melting point in the melting point apparatus raising the temperature in the last phase of the melting process at a rate of 0.5 ºC per minute. Take the reading on the thermometer, in tenths of a degree centigrade, at the moment that the last crystal grain has just disappeared, as the melting point.

7.4 Microscopical examination of the sterols

7.4.1 Dissolve about 10 mg of the steryl acetate in a small test tube in 1 ml ethanol (95-96 % v/v) and add one or two drops of potassium hydroxide solution.

7.4.2 Heat on a boiling water-bath until boiling begins and the steryl acetate dissolves.

7.4.3 Add 10 ml of distilled water, transfer the solution to a 125 ml separating funnel and shake with 25 ml diethyl ether.

7.4.3 After separation, drain and discard the aqueous layer.

7.4.5 Wash the ether layer with three 5 ml portions of distilled water.

7.4.6 Transfer the ether layer to a 50 ml beaker and evaporate to dryness.

7.4.7 Dissolve the residue in 10 ml ethanol (80 % v/v). Place a drop of the clear solution on a microscope cover slip, and let it spread over the slip. Wait until crystallization starts at the edges of the cover slip, then invert the slip and lay it on a microscope slide.

7.4.8 During further crystallization, examine the crystals under the microscope at about 200 X linear magnification.

8. EXPRESSION OF RESULTS

8.1 Calculate the total sterol content of the fat by means of the formula:

Total sterol content (%) = 0.25. (b /a). 100 where:

a = mass (in grammes) of fat sample,

b = mass (in grammes) of sterol digitonide.

Report the result rounded off to the second decimal place.

8.2 If the melting point of the steryl acetate is found to be between 114.0 and 115.5 ºC, the fat sample is not considered to contain vegetable fat.
If the melting point of the steryl acetate is found to be 117.0 ºC or higher, the fat sample is considered to contain vegetable fat.
If the melting point of the steryl acetate is found to be 115.5 ºC or higher but lower than 117.0 ºC, the fat sample is considered to contain vegetable fat only if the melting point increases after repeated recrystallization.

8.3 If, under the microscope, the sterol crystals are found to have only the form of a parallelogram with an obtuse angle of 100º, which is characteristic for cholesterol, the fat sample is not considered to contain vegetable fat.

If, under the microscope some of the sterol crystals show the elongated hexagonal form with an apical angle of 108º, which is characteristic for phytosterols, or if some of the crystals have a re-entry angle (swallow's tail), which is characteristic of mixtures of cholesterol and phytosterols, the fat sample is considered to contain vegetable fat. (See the figures.)

8.4 Sensitivity of the method

The sensitivity depends upon the nature of the vegetable fat, i.e. upon the content and composition of the phytosterol mixture present in it.

As a rule about 5 % of phytosterols can be detected in a cholesterol-phytosterol mixture.

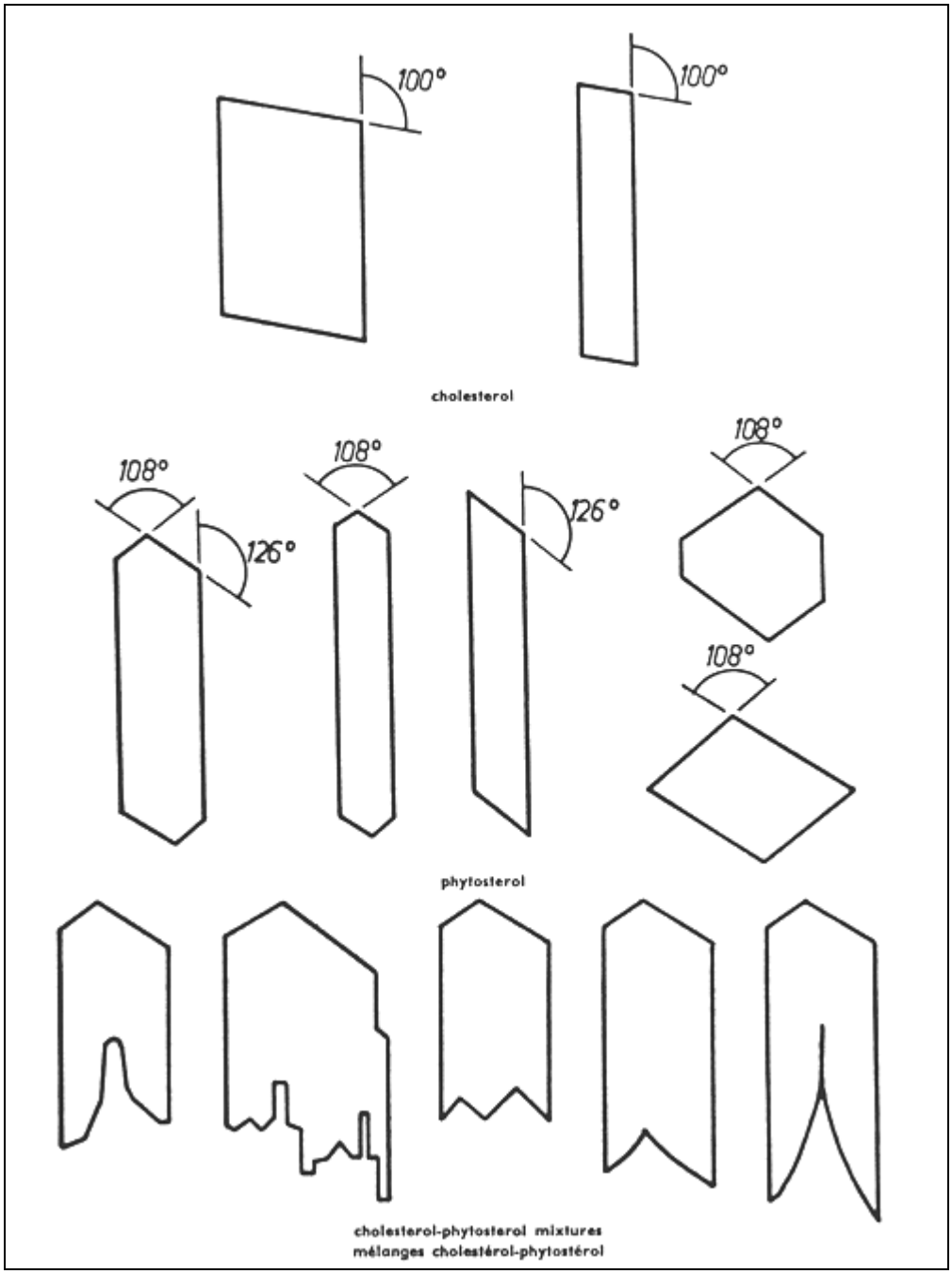
9. TEST REPORT

The test report shall state the total sterol content expressed as a percentage by weight, the melting point of the steryl acetate and the number of recrystallizations and a description of the microscopic appearance of the sterol crystals.

THE DETECTION OF VEGETABLE FAT IN MILK FAT
by the phytosteryl acetate test

DÉTECTION DES GRAISSES VÉGÉALES DANS LA GRAISSE DE LAIT
par le test à l'acétate de phytostérol

CRYSTAL SHAPES OF STEROLS
FORMES DES CRISTAUX DE STÉROLS



The following reports of earlier sessions in this series have been issued:

First session	Rome, Italy, 8-12 September 1958	(Meeting Report No. 1958/15)
Second session	Rome, Italy, 13-17 April 1959	(Meeting Report No. 1959/AN-2)
Third session	Rome, Italy, 22-26 February 1960	(Meeting Report No. AN 1960/2)
Fourth session	Rome, Italy, 6-10 March 1961	(Meeting Report No. AN 1961/3)
Fifth session	Rome, Italy, 2-6 April 1962	(Meeting Report No. AN 1962/3)
Sixth session	Rome, Italy, 17-21 June 1963	(Meeting Report No. AN 1963/5)
Seventh session	Rome, Italy, 4-8 May 1964	(Meeting Report No. AN 1964/4)
Eighth session	Rome, Italy, 24-29 May 1965	(Meeting Report No. AN 1965/3)
Ninth session	Rome, Italy, 20-25 June 1966	(SP-10/105 - 9th)
Tenth session	Rome, Italy, 25-31 August 1967	(SP-10/105- 10th)
Eleventh session	Rome, Italy, 10-15 June 1968	(Cx 5/70-11th)
Twelfth session	Rome, Italy, 7-12 July 1969	(Cx 5/70 - 12th)
Thirteenth session	Rome, Italy, 15-20 June 1970	(Cx 5/70 - 13th)
Fourteenth session	Rome, Italy, 6-11. September 1971	(Cx 5/70 - 14th)
Fifteenth session	Rome, Italy, 25-30 September 1972	(Cx 5/70 - 15th)

CODE OF PRINCIPLES CONCERNING MILK AND MILK PRODUCTS:

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