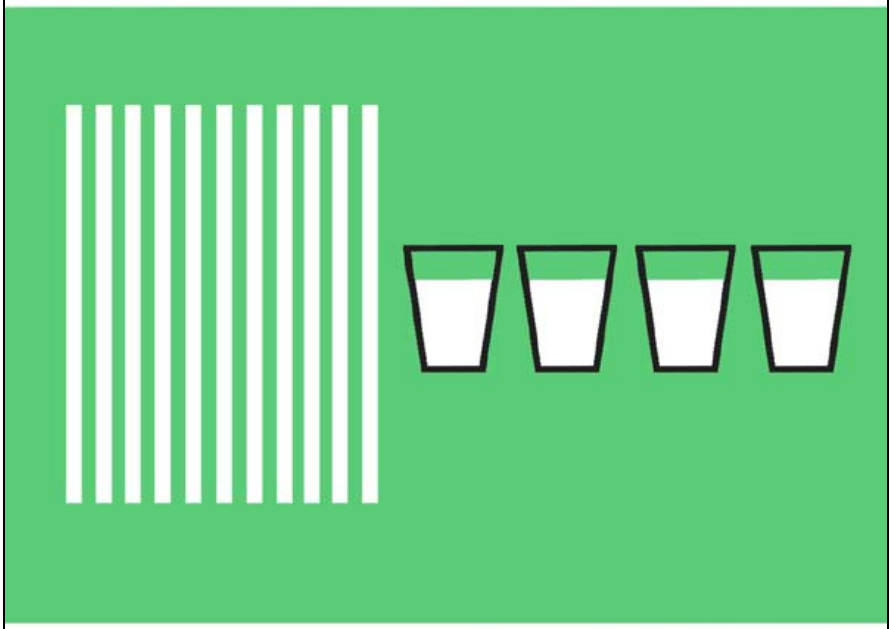
Joint FAO/WHO Food Standards Programme

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

Report of the Eighteenth Session

Held in Rome, Italy, 13-18 September 1976



FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
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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)

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(Cx 5/70 - 11th)

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(Cx 5/70 - 12th)

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(Cx 5/70 - 14th)

Fifteenth session, Rome, Italy, 25-30 September 1972
(Cx 5/70 - 15th)

Sixteenth session, Rome, Italy, 10-15 September 1973
(Cx 5/70 - 16th)

Seventeenth session, Rome, Italy, 14-19 April 1975
(Cx 5/70 - 17th)

CODE OF PRINCIPLES CONCERNING MILK AND MILK PRODUCTS:

First Edition	1960
Second Edition	1961
Third Edition	1962
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REPORT
of the
EIGHTEENTH SESSION

of the

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

Held at FAO Headquarters

Rome, Italy
13-18 September 1976

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SUMMARY OF POINTS FOR ACTION BY GOVERNMENTS

1. Governments are requested to make their comments available by 31 October 1977 at the latest. 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:

Redraft of the	
-General Standard A-8(a) for Named Variety Process (ed) Cheese and Spreadable process (ed) Cheese	- Governments to comment (See paras 25,36 and 37 of this Report and Appendices II-A, II-B, II-C).
-General Standard A-8(b) for "Process (ed) Cheese" and "Spreadable Process(ed) Cheese"	
-General Standard A-8(c) for Processed Cheese Preparations (Process (ed) Cheese Food and Process(ed) Cheese Spread)	
at Step 3 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, A-9, A-10, A-11 (a) and A-11 (b). Governments should bear in mind Decision No.5 (see 7th Edition of the Code of Principles and paras. 65 to 70 of the Report of the 17th Session).	
-Compositional Standards A-1 to A-5 and A-7, redrafts at Step 7 of the above Procedure	-Governments to continue to submit their acceptance or confirm their acceptances. (See 7th Edition of the Code of Principles).
-Compositional Standard A-10 for Cream Powder at Step 7 of the above Procedure	-Governments to continue to submit their acceptances. (See 7th Edition of the Code of Principles)
-Compositional Standard A-11 (a) for Yoghurt and Sweetened Yoghurt at Step 7 of the above Procedure	-Governments to continue to submit their acceptances. (See Report of the 17th Session, Appendix VII).
-Compositional Standard A-11 (b) for Flavoured Yoghurt at Step 7 of the above Procedure	-Submitted to Governments for acceptance (see paras 39 to 59 of the Report and Appendix III).
-Compositional Standard A-9 for Cream at Step 'i of the above Procedure	-Submitted to Governments for acceptance. (See paras 60 to 86 of this Report and Appendix IV).

-Compositional Standard A-12 for Edible Acid Casein at Step 7 of the above Procedure	-Submitted to Governments for acceptance. (See paras 87 to 96 of this Report and Appendix V).
-Compositional Standard A-13 for Edible Caseinate at Step 7 of the above Procedure	-Submitted to Governments for acceptance. (See paras. 97 to 110 of this Report and Appendix VI).
International Individual Cheese Standards	
-C-1 to C-25 and C-26 to G-34 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, Appendices VII-A to VII-E to the Report of the 15th Session and Appendices V-A to V-D to the Report of the 16th Session. See also para 111 of the Report of the 17th Session and paras 25 to 35 of this Report).
Standard Methods of Analysis	
-B-1 to B-8 and B-10 to B-15	-Governments to continue to submit their acceptances. (See 7th Edition of the Code of Principles).
-Milk Fat, Detection of Vegetable Fat by the Phytosteryl Test, Standard Method B-16	
-Milk Fat, Detection of Vegetable Fat by Gas-liquid. Chromatography of Sterols, Standard Method B-17	-Submitted to Governments for acceptance (Texts will be published in the 8th Edition of the Code of Principles).
-Cheese, Determination of Chloride Content, Standard Method B-18	
-Caseins and Caseinates, Determination of the Water Content	-Governments to comment (See Appendices VIII, IX-A, IX-B, IX-C, IX-D, IX-E, IX-F, X, XI, XII).
-Rennet Casein and Caseinates, Determination of Ash	
-Acid Casein, Determination of Ash	
-Caseins and Caseinates, Determination of Protein Content	
-Acid Casein, Determination of Free Acidity	
-Caseins, Determination of pH	
-Determination of Lactose in. the	

Presence of Other Reducing Substances -Milk Powder, Determination of Titratable Acidity -Cheese, Determination of Nitrate and Nitrate Contents	
-Anhydrous Milk Fat, Determination of the Peroxide Value	-Governments to comment, (See Appendix to MDS 76/12(a), March 1976).
-Determination of the Organochlorine Pesticide Residues Content of Milk and Milk Products, International Standard FIL-IDF75: 1975	-Governments to comment,(copies may be purchased from the International Dairy Federation, Square Vergote 41, 1040 Brussels, Belgium).
Acceptance Procedure for Milk Product Standards. Proposed guidelines to Governments, Acceptance Form.	-Governments to comment on the meaning of specified deviations in accepting standards for milk and milk products.(See paras 10 to 22 of this Report and Appendix VII).

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

Rome, 13-18 September 1976

INTRODUCTION

1. The Eighteenth Session of the Joint FAO/WHO Committee of Government Experts on the Code of Principles concerning Milk and Milk Products vas held at FAO headquarters in Rome, from 13-18 September 1976. The session was attended by 113 participants including representatives and observers from 31 countries, and observers from 7 organizations (see Appendix I for the List of Participants).

2. The Eighteenth Session of the Committee was convened by the Directors-General of FAO and WHO. The meeting was opened by Mr. G.O. Kermode, Chief, Food Standards and Food Science Service, Food Policy and Nutrition Division, who reviewed the programme of work of the Committee, the progress being made by the Codex Alimentarius Commission on standards and their acceptance by governments, by the International Scheme for the Coordination of Dairy Development (ISCDD), the activities of the FAO dairy training programme, and the Organization's activities concerning assistance to countries in food control. In his introductory statement, Mr. F.S. Anderson (U.K.), Chairman of the session, reminded delegates that to achieve progress in the work of international standardization, it was necessary for individual delegates to be prepared to surrender some measure of their individuality and substitute in its place a common drive to make progress as a Committee.

3. The Committee was presided over by its Chairman, Mr. F.S. Anderson (U.K.) and its two Vice-chairmen, Mr. T.L. Hall (New Zealand) and Mr. K.P. Andersen (Denmark). The Joint Secretaries were Dr. F. Winkelmann and Mr. W.L. de Haas of FAO.

Election of Officers

4. The Committee unanimously elected Mr. T.L. Hall (New Zealand) Chairman of the Committee, to serve from the end of the 18th Session until the end of the 19th Session. The Committee also unanimously elected Mr. K.P. Andersen (Denmark) and Dr.A. Farkhondeh (Iran) to be first and second Vice-Chairmen, respectively, both to serve from the end of the 18th Session until the end of the 19th Session. The Committee expressed its appreciation of the outgoing Chairman of the Committee and of the two Vice-Chairmen.

Adoption of Agenda

5. Following a request of the Association of the Processed Cheese industry of the EEC, the provisional agenda was adopted with some rearrangement in the order of items to be discussed. The Committee also agreed to consider the question of applications for those international individual cheese standards which had not yet been considered by the Committee, under the agenda item "General standard for Cheese" and the technological justification for the use of nitrates in cheese, under the agenda item "Miscellaneous".

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. Seventy-two governments had accepted the Code of Principles concerning Milk and Milk Products. The delegation suggested that countries at present listed in Group III should endeavour to change their acceptance to the type covered by Group I.

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

Redraft of Standard	Accepted by *
A-1 for Butter	- 11 countries: Belgium*, Bulgaria*, Canada*, Finland, F.R. of Germany*, Iran, Kenya, Netherlands*, New Zealand*, Norway*, Poland*.
A-2 for Butteroil	- 7 countries: Bulgaria*, Canada, Denmark*, Hungary, Netherlands*, Norway*, Poland*.
A-3 for Evaporated Milk	- 10 countries: Canada*, Denmark, Finland, F.R. of Germany*, Hungary, Iran, Kenya, Netherlands*, Poland*, Switzerland*.
A-4 for Sweetened Condensed Milk	- 12 countries: Belgium*, Bulgaria*, Canada*, Finland*, F.R. of Germany*, Hungary, Iran, Kenya, Netherlands*, New Zealand*, Poland*, Switzerland*
A-5 for Milk Powder	- 9 countries: Bulgaria*, Denmark, F.R. of Germany*, Iran, Kenya, Netherlands, Hew Zealand*, Poland*, Switzerland*
A-7 for Whey Cheese	- 10 countries: Bulgaria*, Canada*, Denmark, Finland, F.R. of Germany*, Hungary, Iran, Netherlands*, Norway, Poland*
A-8(a) - General Standard for Process(ed) -------- Cheese or ---------Process(ed)	- 9 countries: Bulgaria*, Canada*, Denmark*, Finland*, Iran, Kenya, Poland*, Switzerland*, United Kingdom*
A-8(b) - General Standard for "Process(ed) Cheese" and "Spreadable Process(ed) Cheese"	- 6 countries: Bulgaria*, Finland*, Iran, Kenya, Poland*, Switzerland*
A-8(c) - General Standard for Process(ed) Cheese Preparations	- 5 countries: Bulgaria*, Finland*, Iran, Kenya, Poland*
A-10 for Cream Powder	- 4 countries: Bulgaria*, Hungary,

		Iran, New Zealand* -
A-11(a) for Yoghurt and Sweetened Yoghurt	-	4 countries: Argentina*, France*, Iran, Poland

* "country" means acceptance with reservations of various kinds. Details of acceptances and remarks by governments will be published in the 8th edition of the Code of Principles concerning Milk and Milk Products. The Government of Malawi intends to accept the standards contained in the 7th edition of the Code of Principles after a period of five years (target acceptance).

8. The Commitee noted that the former version of these compositional standards, except the new standards A-8, A-10 and A-ll(a) 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 further noted the current position regarding acceptances by governments of international individual cheese standards C-l to C-34, which *is* given on page 3, and the standard methods of sampling and analysis which vas as follows:

Methods of Sampling and Analysis		Number of Acceptances
B-l	Sampling Methods for Milk and Milk Products	48
B-2	Determination of the Fat Content of Dried Milk	47
B-3	Determination of the Fat Content of Cheese and Processed Cheese Products	46
B-4	Determination of the Acid Value of Fat from Butter	45
B-5	Determination of the Refractive Index of Fat from Butter	46
B-6	Determination of the Fat Content of Milk	17
B-7	Determination of the Fat Content of Evaporated Milks and of Sweetened Condensed Milks	17
B-8	Determination of the Salt (Sodium Chloride) Content of Butter	18
B-10	Determination of the Fat Content of Whey Cheese	7
B-11	Determination of the Dry Matter Content in Whey Cheese	11
B-12	Determination of the Phosphorus Content of Cheese and Processed Cheese Products	11
B-13	Determination of the Citric Acid Content of Cheese and Processed Cheese Products	11
B-14	Polarimetric Determination of the Sucrose Content of Sweetened Condensed Milk	11
B-15	Determination of the Fat Content of Cream	7

DETAILS OP ACCEPTANCE OF
INTERNATIONAL INDIVIDUAL CHEESE STANDARDS

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

C-31 Cream Cheese					x	x				o							x						4
C-32 Blue-Veined						x				o							x						3
C-33 Camembert						o				o				x.			x						4
C-34 Brie						o				o				x			x						4

o – acceptance

x = acceptance with certain reservations

(**) = 'target acceptance' according to the codes and x) - any cheeee meeting the standard-concerned could be freely distributed in Trinidad and To bago

ACCEPTANCE PROCEDURE FOR MILK PRODUCT STANDARDS

10. The Committee had before it a document (MDS 76/3b) prepared by the Chairman of the Committee and containing a comparison of the acceptance procedure for milk product standards as provided for under the Code of Principles with the procedure presently in force for the acceptance of Codex Commodity Standards.

11. The Committee also took into consideration the written observations of the Governments of Canada, Denmark, Fed. Rep. of Germany, Norway, Switzerland,. United Kingdom and USA (MDS 76/3a, para 5 and MDS 76/Canada) on the subject of acceptance.

12. The Chairman of the Committee briefly outlined the problem at issue, namely the possibility of confusion in the light of the choice left to the individual governments to accept standards elaborated by the Committee either under the Code of Principles or under the General Principles of the Codex Alimentarius. In addition to full acceptance the former allowed for acceptances with more stringent requirements - the latter allowed for acceptance with specified deviation, which could in theory be either more or less stringent. It was noted that a number of countries had indicated that they would follow the Codex Procedure when considering milk product standards for acceptance.

13. The Secretariat indicated that the classification of acceptances under the Code or under the Codex General Principles did not pose much difficulty because, whilst acceptances under the Code of Principles was intended to apply to imports, exports and domestically consumed products, government acceptances in reality did not include products for export and therefore acceptance could be easily reclassified under the Codex Acceptance Procedure.

14. It was further pointed out that the acceptance procedure under the Code of Principles was not formal but more advisory by nature. Attention was also drawn to the statements made by some governments which expressed the view that fundamentally there existed no difference between standards for milk products and those elaborated by Codex Commodity Committees and thus for all commodities a single acceptance procedure should be applied, which would be the Codex Procedure. The possibility of obtaining substantial information on the measure of acceptance with specified deviations under the Codex Procedure was further considered to be an added advantage by some delegations.

15. It was suggested that one of the causes for concern could be found in the wording of Steps 9 and 10 of the Procedure for the Elaboration of Milk and Milk Product Standards where a distinction is made between publication in the Code of Principles and in the Codex Alimentarius depending on the number of acceptances received by the Codex Committee and the Codex Alimentarius Commission respectively.

16. The Secretariat held the view that for the moment this was a hypothetical issue as final publication of standards under either system had not yet been considered. For the time being the activities would be limited to seeking acceptances and the subsequent publication of responses from governments.

17. After further discussion it was agreed that the Committee should make a recommendation to Governments concerning acceptance under the General Principles of the Codex Alimentarius paying particular regard to the question of acceptances with specified deviations, be these more or less rigorous.

18. The delegation of the Netherlands expressed some concern about the relationship between the Codex Alimentarius Commission and the Code Committee. It felt that the work of the Code Committee would be affected adversely when from time to time the acceptance procedure was changed by the Codex Alimentarius Commission in particular because standards were drafted taking into account existing acceptance procedures.

19. The delegation proposed that any intended change in acceptance procedures should be sent by the Codex Alimentarius Commission to Commodity Committees in order to obtain the views of these Committees before taking a final decision.

20. A drafting Group on which the delegations of the Fed. Rep. of Germany, Ghana, France, Netherlands, Norway, Spain, Switzerland, United Kingdom and USA as well as IDF were represented was set up to consider the meaning of specified deviations in accepting standards for milk and milk products under the Code of Principles and/or the Codex Procedure.

21. The Chairman of the Group, Dr. R.W. Weik (USA), presented the conclusions of the working party to the Committee, pointing out that the matter had been dealt with in broad terms. The guidelines proposed by the group would be generally applicable to all standards but might need some adjustment in the case of specific standards, e.g. individual cheese standards.

22. The Committee expressed its appreciation for the work done by the group and decided with general agreement to append the Proposed Guidelines as well as an example of the Codex Acceptance Form to the Report of the present session for consideration by governments (Appendix VI).

Matters of interest arising from the 11thsession of the Codex Alimentarius Commission (ALINORM 76/44)

23. The Committee's attention vas drawn to the discussions of the commission on food additives, in particular to the need to be specific when proposing substances which interact with food or otherwise undergo changes in the food (para 48). It was noted that Principles Relating to a Carry-over of Additives into Food had been endorsed (para 121) as a guide to Commodity Committees. It also noted that general decisions of the Food Additives Committee with regard to substances already appearing in the standards sent out to governments for acceptance would be taken into account by the Secretariat when preparing new editions of the standards (para 122).

24. The Committee was informed of the changes to the terms of reference of the Codex Committee on Food Hygiene which implied that hygiene provisions in codes of practice would be subject to review (para 137). The attention of the Committee was drawn to the recommendation that Commodity Committees be represented at sessions of the Hygiene Committee when matters of interest to them were reviewed (para 138). The Committee noted that the Standard for Edible Ices and Ice Mixes had been advanced to Step 6 of the Procedure and would be discussed in Stockholm in October 1976 (para 365). It also noted that the Codex Committee on Food Additives had been requested to develop a standard for food grade salt (paras 399-407).

Amendments to and Revision of Certain Cheese Standards

25. At its 17th Session, the Committee had agreed to consider proposals from the Governments of

- Sweden to revise the standard C-21 Herrgårdsost,
- Norway to revise the standard C-23 Norvegia,
- the Netherlands to revise the standards C-4 Edam and C-5 Gouda,
- Switzerland to revise the standard C-31 Cream Cheese;

and a proposal from the Government of the Federal Republic of Germany to revise the

General Standard A-8(a) for Process(ed) _____ Cheese or _____ Process(ed) Cheese

General Standard A-8(b) for "Process(ed) Cheese" and "Spreadable Process(ed) Cheese"

General Standard A-8(c) for Process(ed) Cheese Preparations (Process(ed) Cheese Food and Process(ed) cheese Spread)

The proposals for amendments of the international individual cheese standards as outlined in MDS 76/9 were considered point by point and the Committee agreed that the standards concerned be amended as follows: C-21 Herrgårdsost:

26. Section 4.4.2 and the last line in sections 4.3.1 and 4.3.2 respectively should be deleted and section 4.4.1 should be changed to read: "Consistency: hard, resiliant, dry (paraffin)".

C-23 Norvegia

27. Sections 4.7 and 4.8 should be replaced by the following table (4.7):

	A Norvegia	B Norvegia 30%	C Norvegia 20%	D Norvegia 10%	E Baby Norvegia
Minimum fat content in dry matter %	45	30	20	10	45
Maximum moisture content %	44	48	52	55	47
Minimum dry matter content %	56	52	48	45	53

Section 4.9 becomes 4.8. The first sentence in the second paragraph under point 7 Marking and Labelling" should reads «The cheese mentioned under 4.3.1(b), 4.3.2(b) and 4.7(E) may be designated "Norvegia" provided that the designation is accompanied by the prefix "Baby"."

28. The delegation of Denmark informed the Committee that, while it was not opposed to the use of the same name for cheeses with different fat contents, Denmark would have to reconsider its acceptance of the standard, especially because of the inclusion of a cheese with 10% minimum fat content in the dry matter. C-4 Edam and C-5 Gouda

29. The proposal of the Government of the Netherlands to amend section 4.3.2(b) Weights to read "flat block (as under 4.2(b)) not less than 6 kg" (instead of 10 kg as in the original text) was changed to 5 kg following a suggestion made by the Polish delegation.

30. The delegation of Spain advised that, while Spain had changed its legislation to conform with the original version of the standard, it did not object to the proposal.

They would need to amend their national legislation accordingly and this might take time.

31. The Committee asked the Secretariat to submit the amendments to standards C-21, C-23, C-4 and C-5 to governments for acceptance.

C-31 Cream Cheese:

32. The Committee considered the proposal made by the Government of Switzerland to add to the title of the standard the French term "fromage frais à la crème" and a proposal to add the Spanish term "Queso Cremoso", in the light of its discussion on the subject during its 16th Session. The Committee noted that at that session it had rejected a proposal to use the term "Fresh cream cheese" instead of "Cream cheese" as large quantities of this cheese were traditionally sold under the name "Cream Cheese" and the term "fresh" might be misinterpreted. As regards the fact that the standard covered non-matured cheese only, the Committee recalled its decision to deal with this problem by inserting an appropriate reference in the labelling section of the standard.

33. Further the Committee discussed the Swiss proposal to include butter in the list of ingredients. This proposal was supported by some delegations and opposed by others.

34. Recalling its decision to leave standards unchanged for at least a period of five years, the Committee decided to postpone consideration of a revision until 1978. It was noted that in the meantime the depositing countries, with the assistance of the IDF, would draft a revised text for discussion at a later date.

35. One delegation expressed concern that some depositing countries had not accepted the individual cheese standards for which they had made applications. The Committee agreed that depositing countries would normally be expected to accept these standards!

General Standards A-8(a), A-8(b). A-8(c)

36. The Committee agreed to a proposal by the delegation of the Federal Republic of Germany to base the discussion concerning the amendments to the standards on the proposal of the IDF given in MDS 76/9 Appendix. The Committee noted that there were a number of details to be considered which could best be discussed by a small drafting group.

37. The group, which was composed of delegates from Australia, Belgium, France, Federal Republic of Germany, Switzerland, the United Kingdom, the U.S.A. and the representative of the IDF, met under the chairmanship of Dr. J.B. Stine, U.S.A., on Monday, 13 September. The Chairman of the drafting group reported to the Committee that the group had recommended the draft standards as prepared by the IDF, with the exception that it had added provisions in standard A-8(a) relating to national legislation under sections 5.2 Composition of a Named Variety Process(ed) Cheese and 5.3 Composition of a Named Variety Spreadable Process(ed) Cheese. These additions reads

"5.2.4 If national legislation differing from the above exists, the national legislation of the consuming country prevails."

"5.3.3 If national legislation differing from the above exists, the national legislation of the consuming country prevails."

Status of the Standard

38. The Committee agreed that the revised standards should be sent to governments for comments at Step 4 of the Procedure. The complete texts of the amended versions are given in Appendices II(a) , (b) and (C) to this Report for comments by governments.

Application of Decision No. 5 to the Standards for Yoghurt

39. The Chairman drew the attention of the Committee to the need for a decision whether Decision No. 5 should apply to the standards for Yoghurt. The Committee recalled that Decision No. 5 would apply to all milk product standards adopted under the Code of Principles unless the provisions of the standards provided otherwise or the Committee decided otherwise.

40. The Committee noted that it had applied Decision No. 5 to certain standards either in full or with a restriction. Application of Decision No. 5 in full meant that the product covered by the standard concerned could be made (i) from reconstituted milk or recombined milk or (ii) by reconstitution or recombining milk constituents.

41. In the case of the General Standard for Cheese - A-6, the Committee had decided that Decision No. 5 would apply only as far as cheese made from recombined or reconstituted milk was concerned (Report of the 15th Session, para 66).

42. In the course of the discussion it became apparent that a reference to recombined and reconstituted "milk" in the case of the standards for yoghurt [1/] was to be interpreted as including all the essential raw materials from which the product could be manufactured and which were listed under Section 2.3 of the Standard for Yoghurt and Sweetened Yoghurt No. A-11(a). The Committee concluded that Decision No. 5 was applicable to standards A-11(a) and A-11(b) as far as yoghurts were concerned which were made from the reconstituted or recombined raw materials listed under 2.3 in standard A-11(a). If made from reconstituted or recombined raw materials the products would have to be labelled in accordance with the provisions adopted at the 17th Session of the Committee.

[1/] The Secretariat is of the opinion that this would also apply to the General Standard for Cheese, i.e. the reference to "milk" in para 66 of the Report of the 15th Session should be interpreted as including all the raw materials listed in the "Definition" for cheese.

43. The Committee, however, agreed that an inclusion in the product of some or all of the optional additions listed under section 2.5 of the standard, which was mainly done for the purpose of standardization, would not require such labelling. The delegations of Italy and Spain objected to the application of Decision No. 5 to standards A-11(a) and A-11(b).

44. The Committee noted that the Secretariat would include in the 8th edition of the Code of Principles footnotes relating to the application of Decision No. 5 for the standards concerned as well as labelling provisions such as those listed in paragraphs 64 and 72 as appropriate of the Report of the 17th Session.

DRAFT STANDARD FOR FLAVOURED YOGHURT (FLAVOURED YOGURT) A-11(b)

45. The Committee reconsidered the above Draft Standard as contained in Appendix VIII to the Report of the 17th Session at Step 6 of the Procedure in the light of written government comments received (Doc. MDS 76/4 and MDS 76/Ireland, New Zealand, Argentina and Canada).

Definitions (1)

46. At the 17th Session the Committee had agreed to request governments to propose a suitable terminology for naming yoghurt heat-treated after fermentation. Although a large number of comments had been forthcoming some delegations considered that no particularly suitable designation had emerged.

47. During the ensuing discussion various delegations reiterated statements made at earlier sessions requesting the exclusion of the heat-treated product from the standard as they considered the yoghurt with viable and abundant microorganisms to be quite different from the product heat-treated after fermentation. Other delegations held the view that the two products had a great deal in common and thus should be covered by one standard; moreover in view of the increasing trade in the heat-treated product standardization of this product appeared desirable.

48. Suggestions were made to revise the standard by changing the title and adding a scope section providing for both products and to amend such provisions of the standard where a distinction between the products was necessary. The Committee agreed to request the delegations of the Fed. Rep. of Germany, Italy, Poland, Switzerland, United Kingdom and USA to examine the feasibility of the above proposals.

49. The Chairman of the Ad Hoc Working Group, Dr. G.F.Schubiger (Switzerland) in reporting to the Committee stated that an adjustment of conflicting opinions had been achieved. The Group had revised the standard on the basis of agreement on the following points:

- the product heat-treated after fermentation was a wholesome product;
- the difficulty ill dealing with the two products (heat-treated and not) in one standard was predominantly related to labelling;
- the standard should "be an entity in itself. References to the Standard for Yoghurt and Sweetened Yoghurt should be deleted and relevant provisions listed in full;
- a provision for flavours - similar to that in the Standard for Edible Ices and Ice Mixes would be introduced (by the Secretariat);
- a provision for "date marking" would be included.

50. The Committee congratulated Dr. Schubiger on the result of hi3 efforts and agreed with the principle that the naming of the product heat-treated after fermentation" should be left to national regulatory agencies.

51. The Committee noted the change in the title of the standard and the introduction of a scope section. After some re-arrangements in the Scope and Definitions Sections proposed by the delegation of Spain and supported by the delegation of Brazil, the Committee agreed unanimously to the various amendments proposed by the working group.

Food Additives (new 4)

52. The Committee noted the observations of the Committee on Food Additives' on the use of colouring and flavouring substances in the manufacture of flavoured yoghurt (ALINORM 76/12, paras 54-55).

Flavours (new 4.1)

53. It was agreed to revise the flavour provision and it was noted that the wording would be similar to that in the Draft Standard for Edible Ices (ALINORM 76/11, App.II). The question was raised whether "other harmless natural flavouring ingredients" listed under Optional Additions (2.2) were not also covered by the flavouring provision. It was pointed out, however, that the former referred to. solid or semi-solid substances, whereas the latter covered liquids.

Carry-over

54. The attention of the Committee was drawn to the fact that food colours and preservatives present in the end product were not directly added but were "carry-overs" from flavouring ingredients. To emphasize this point it was agreed to add to the sub-headings the words "which come exclusively from flavouring substances as a result of carry-over".

Food Colours (new 4.2)

55. Several delegations objected to the use of artificial colours in the product. It was stated that the use of colouring substances in fruit products was desirable to even out e.g. seasonal and regional differences. The Committee noted that the use of some substances had been endorsed by the Food Additives Committee, whereas others were still pending endorsement. It was agreed to retain the present list with the exception of Amaranth (Red 2).

Stabilizers (new 4.3)

56. The Committee agreed that stabilizers were required for suspension of the fruit whether the product was heat-treated or not, to promote an even distribution of fruit pieces through the product. Some delegations did not agree. Oat gum was deleted from the list of stabilizers.

Preservatives (new 4.4)

57. The text of the provision was revised to reflect clearly that the preservatives originated in the flavouring components and that levels in the final product were to be related to the maximum levels permitted by individual Codex Standards for fruit and fruit-based preparations or should not exceed a maximum of 50 mg/kg in the final product.

Labelling (new 5)

58. The labelling section was amended as proposed by the working group (see para 49) In the form of a footnote the governments would be asked to notify the specific names exclusively provided for the heat-treated products in their national legislation. The Committee also agreed to amend the date marking provision in the standard.

Status of the standard

59. The Committee agreed that the standard as amended could be advanced to Step 7 of the Procedure and be sent to governments for acceptance. The revised standard is contained in Appendix III to this Report.

DRAFT STANDARD FOR CREAM FOR DIRECT CONSUMPTION - A-9

60. The Committee considered the draft standard as contained in Appendix VI of the Report of the 17th Session at Step 6 of the Procedure in the light of the written comments received (MDS 76/5, MDS 76/Canada, MDS 76/Ireland, New Zealand, Argentina and MDS 76/Sveden).

Scope

61. The Committee briefly considered a proposal to include fermented creams in the standard. It vas agreed that such products were too different from the products presently specified in the standard to be covered by one standard.

62. The Committee noted that clotted cream - a high fat unfermented cream concentrated by evaporation with heat in an open pan - would be covered by the provision for double cream. The Committee adopted proposals to amend the wording of the scope section to read: "This standard applies to cream, half cream, whipping cream, whipped cream and double cream subjected to pasteurization, sterilization, UHT or ultra pasteurization".

Definitions (2)
Raw materials (2.1)

63. It was proposed to change the heading Raw Materials which did not list raw materials, to read "Product Definitions" and to delete the reference to the various products. This was agreed.

64. The Commitee discussed the correct terminology to describe the form of emulsion of cream. A suggestion to replace the term "emulsion of the fat-in-skimmed milk type" by "fat-in-water type" or "fat in skimmed milk" was considered and it was agreed that the last mentioned version was to be preferred. The Committee adopted a proposal to allow specifically for the standardization of the product by the addition of milk or skimmed milk.

Treatments (2.2)

65. With regard to the definition of pasteurization, sterilization and UHT the Committee recalled its earlier discussion on the lack of internationally agreed definitions for these processes and noted the suggestion of some delegations that it would be desirable if such definitions could be now established. The Committee concurred with the proposal to consider this matter further under "Other Business".

66. The Committee agreed to change the heading to read "Process Definition" and to amend sections 2.2.1, 2.2.2 and 2.2.3 by replacing the "... products are products which" by " ..... creams". A similar amendment was made in the provision for "Forms" (2.3).

Essential Composition and quality Factors (3)

67. The Committee recalled its thorough discussions on the fat levels for the different types of cream and decided not to re-open the discussion on the subject. It adopted an editorial amendment of the term "whipped cream" (min. fat content 35% m/m) to read "whipped heavy cream". In line with its decision not to re-open the discussion on fat contents the Committee rejected a proposal made by the delegation of Denmark to change the designations for "whipping and whipped cream" (min. fat content 28% m/m) and "heavy whipping and whipped heavy cream" (min fat content 35% m/m) to read "light whipping" and "light whipped cream" and "whipping and whipped cream" respectively.

Optional Additions (3.6)

68. When considering proposals for amending this section, the Committee adopted a suggestion to renumber the whole section 3. Essential Composition and Quality Factors in order to distinguish more clearly between the different creams (new numbers 3.1 creams, 3.1.1 cream, 3.1.2 half cream, etc.) and the optional additions (new number 3.2).

69. The Committee agreed to delete the maximum level for sugar and also to list milk-solids-not-fat and caseinates up to maximum levels of 2% and 0.1% respectively as alternatives. The Committee noted that caseinates were regarded as foods by the Codex Committee on Food Additives as the Committee had proposed standards for the caseinates. The delegations of Denmark and Norway wanted to have put on record their objection to the use of milk-solids-not-fat in light creams as they feared that this might mislead the consumer with regard to the fat content of the product. Other delegations pointed out that the consumer would be properly informed if the labelling of the fat content was mandatory.

70. The Committee agreed that the section would read:

"3.2 Optional additions	Maximum level
Sugar (in whipping and whipped cream only)	GMP
Milk solids not fat, or	2%
Caseinates	0.1%

Food Additives (4)

71. When the need for the use of certain food additives was considered by the Committee, the delegation of Argentina, supported by the delegation of Poland, expressed the view that the discussion had a tendency to give priority to the needs of the industry rather than to the interests of the consumer. Other delegations, however, voiced the opinion that the use of safe and harmless additives improved the quality of the products concerned and were thus to the advantage of the consumer. Stabilizers (4.1)

72. The Committee considered a proposal to permit the use of stabilizers in all creams, i.e. also for pasteurized cream. The delegation of Argentina did not agree to the use of stabilizers. A number of delegations stated that while they had no objection to the use of stabilizers in sterilized and UHT treated cream, their legislation did not permit the use of stabilizers in pasteurized cream.

73. On the other hand the Committee noted that in many countries the addition of stabilizers to pasteurized cream was considered necessary (i) to restore the salt balance within milk during certain parts of the year; and (ii) when the cream was subjected to very high pasteurization temperatures. In the light of this information, the Committee agreed to delete the phrase "not for use in pasteurized cream" from section 4.1.

Thickeners (4.2)

74. The Committee considered proposals (i) to restrict the use of thickeners to UHT and sterilized creams intended for whipping, (ii) to allow their use also for pasteurized (already) whipped creams, and (iii) to permit them also in pasteurized creams intended for whipping. The Committee noted that some of these agents were used to prevent serum separation from pasteurized whipped cream prior to consumption. Some

delegations expressed the view that-their use in pasteurized cream intended for whipping should be permitted.

75. The Committee decided to replace the phrase in brackets reading "not for use in pasteurized creams" with "For use only in whipped pasteurized cream, or in UHT cream and sterilized cream intended for whipping".

76. After discussing the technological need for thickeners the Committee agreed to delete benzoin gum, tragacanth gum and ammonium alginate from the list in section 4.2 and accepted a proposal by the delegation of Switzerland to add microcrystalline cellulose to the list of thickeners. The delegations of Argentina and the Federal Republic of Germany recorded their objections to the inclusion of microcrystalline cellulose.

77. The heading of section 4.3 Harmless Gases was amended to read "Harmless Gases (for creams packaged under pressure and whipped creams only)".

Labelling (5)

Name of the Food (5.1)

78. The committee adopted a proposal to permit the use of alternative terms to "heavy" and "double" in addition to alternative terms to "half" already permitted in the designation of the creams concerned and requested the Secretariat to redraft section 5.11 accordingly.

79. The Committee agreed to delete the designation "Sterilized Cream" in section 5.1.1 as this was no longer applicable after the deletion of a compositional specification for such cream during the last session.

80. The Secretariat proposed the following wording:

"5.1.1 - The name of the product shall be (a) "Cream", • (b) "Half Cream", (c) "Whipped Cream", (d) "Whipping Cream", (e) "Whipped Heavy Cream", (f) "Heavy Whipping Cream", or (g) "Double Cream", as appropriate. The use of appropriate alternative qualifying terms in place of "Half", "Heavy" and "Double" is permitted!"

81. Section 5.1.3 was editorially amended by deleting the phrase "....which have been heat-treated as specified in Section 2.2...".

82. The Committee noted that the Codex Committee on Food Labelling wanted the inclusion of provisions relating to lot identification and date-marking in the labelling section of commodity standards preferably with a restriction to a single date-mark, for example, "date of minimum durability" possibly with storage instructions, or "date of manufacture" or "sell by date".

Date Marking (new)

83. The Committee discussed the respective advantages and disadvantages of the various possibilities for date-marking the different creams as an aid to the consumer and agreed on the following wording: "There shall be a clear indication of the minimum durability date". (5.6)

Lot Identification (new)

84. The Committee also agreed to include a provision in the labelling section for mandatory lot identification on the container. (5.7)

Status of the Standard

85. The Committee agreed that Decision No. 5 would apply to the Standard and that the labelling provisions should he in accordance with the relevant decision of the 17th Session.

86. The Committee adopted the Standard as amended at Step 6 of the Procedure for the elaboration of the milk product standards and requested the Secretariat to send it to governments for acceptance at Step 7. The revised standard is contained in Appendix IV to this Report.

DRAFT STANDARD FOR EDIBLE ACID CASEIN - A-12

87. The Committee considered the above standard as contained in Appendix IV of the Report of the 17th Session at Step 6 of the Procedure in the light of government comments received (MDS 76/6, MDS 76/Ireland, New Zealand, Argentina and MDS 76/Canada).

Definition (1)

88. The Committee agreed to delete the reference to buttermilk in the definition. It considered providing for the use of buttermilk as an optional ingredient - with or without a maximum limit - but decided against this as serum protein might form a precipitate in addition to casein. Such a product - a coprecipitate - could not be regarded as casein as defined in the standard.

Essential Composition and Quality Factors (2)
Minimum protein content (2.1)

89. The Committee again considered a proposal to increase the minimum protein content from 90% to 94% or 95%, which several delegations thought to be more in line with present commercial practice. It was also pointed out that IDF had provided for an extra quality casein of 95% and a standard quality of 90% min. The Committee decided not to make any change.

Contaminants (3)
Maximum Lead Content (3.2)

90. Governments had been asked to comment specifically on the level proposed (2 mg/kg) After some discussion, the Committee agreed to retain this level in the standard, since sulphuric acid was used for precipitation in some countries and the proposed level was apt to be approached.

Food Additives (4)

91. The Committee agreed to add a clause to the heading, stating that the additives listed were "for use for coagulation only" and should be "food grade". There was some discussion with regard to a proposal to allow for the use of sour whey as acidification could take place by natural fermentation, by ion exchange, or by the addition of acids. It was agreed to add to the list of acids, citric acid, acetic acid and lactic fermented whey (all GMP). Labelling (5) Bulk Containers

92. As no final recommendation from the Codex Committee on Food Labelling on the labelling of bulk containers was available, it was decided not to make any reference to bulk containers for the time being.

Lot Identification (new)

93. It was agreed to include a provision for Lot Identification as recommended by the Labelling Committee. It was noted that the Labelling Committee would, at its next session, endeavour to define "lot" Hygienic Requirements

94. In view of the discussions on hygienic requirements for milk and milk products to take place later during the session, it was agreed not to discuss this subject at this point.

Decision No. 5

95. The Committee agreed that Decision No. 5 was not applicable to this standard.

Status of the Standard

96. The Committee agreed that the standard as amended could be advanced, to Step 7 of the Procedure and be sent to governments for acceptance. The revised standard is contained in Appendix V to this Report.

DRAFT STANDARD FOR EDIBLE CASEINATES - A-13

97. The Committee considered the above standard as contained in Appendix V to the Report of the 17th Session at Step 6 of the Procedure in the light of government comments received (MDS 76/6 and MDS 76/Canada).

Definition (1)

98. It was pointed out that in the definition, the word "combining" in relation to edible casein and neutralizing agents might be misunderstood to mean that dry casein and neutralizing agents could be mixed. It was agreed to use the words "reaction of" instead. essential Composition and Quality Factors (2) Minimum Protein Content (2.1)

99. The Committee considered briefly the desirability of raising the minimum protein content from 88% to 90% as well as a suggestion from the delegation of Uruguay to lower it to 87%. It was finally decided not to make any change and retain the figure of 88%.

Maximum Milkfat Content in Dry Matter (2.3)

100. The Committee agreed to raise the upper limit for maximum milkfat content in the dry matter from 1.5% to 2.0% to bring it more into line with the level allowed for casein.

pH Value (2.6)

101. The Committee agreed with a proposal to establish different upper limits for pH values, depending on the cation used for neutralization: calcium and magnesium caseinate, not higher than 7.5; all other caseinates not higher than *7.* As the solubility of the product was related to the pH value, a proposal to set ranges rather than upper limits only for the pH values was discussed. In view of the variations possible in results of analysis, the Committee decided that setting upper limits only would be preferable.

Maximum lactose content (new)

102. A new provision for an upper limit of 1% lactose - in line with the limit for casein - was included in the section.

Maximum ash

103. A proposal for setting a limit for the ash content of caseinates (6%) was considered. However, as, in addition to neutralizing agents, buffering agents were (at a later stage during the discussion) provided for, which might result in ash contents higher than 6%, no limit was set.

Contaminants (3)

Maximum Lead Content (3.2)

104. The Committee agreed to the proposed limit of 2 mg/kg.

Maximum iron content (3.4 - new)

105. The Committee agreed to a limit for iron of 20 mg/kg in spray dried caseinates in addition to the existing provision for the roller-dried product.

Food Additives (4)

106. As for casein the Committee agreed to add to the heading the term "food grade". The Committee agreed to allow for the use of certain buffering agents: sodium carbonate, sodium bicarbonate and the sodium, calcium and potassium salts of citric, lactic and acetic acid. The list of hydroxides was expanded by the inclusion of magnesium and was given the heading "optional neutralizing agents".

Labelling (5)

Lot Identification (new)

107. As recommended by the Food Labelling Committee, a provision for lot identification was included in the section.

Methods of Sampling and Analysis

108. The Committee noted that the IDF/ISO/AOAC working group was developing methods for use in connection with the analysis of caseinates.

Decision No. 5

109. The Committee agreed that Decision No. 5 was not applicable to this standard.

Status of the Standard

110. The Committee agreed that the standard as amended could be advanced to Step 7 of the Procedure and be sent to governments for acceptance. The revised standard is contained in Appendix VI to this Report.

HYGIENIC REQUIREMENTS FOR MILK AND MILK PRODUCTS

111. The Committee had before it the draft of a code of practice for dried milk which had been prepared by the Government of Australia (MDS 76/10).

112. To facilitate the discussion, the representative of WHO highlighted past and present activities of WHO with regard to the development of codes of practice and microbiological specifications for food products.

Statement by WHO Representative

113. Since 1972, when the Codex Committee on Food Hygiene decided to intensify its activities in the field of food microbiology, steps have been taken to come to an agreement between the various expert bodies in this field on common internationally

acceptable methodologies for identification and enumeration of microbiological agents of hygienic importance.

114. Based on this work, the first joint FAO/WHO Expert Consultation on Microbiological Specifications for Foods was held in 1975. This consultation discussed the various aspects related to setting microbiological specifications for foods and made specific recommendations for egg products on sampling, microbiological methods and microbiological limits for inclusion in the relevant code of hygienic practice under preparation.

115. The Codex Committee on Food Hygiene had since considered the recommendations made and agreed to advance these to Step 5 of the Procedure and to request the Commission that Steps 6 and 7 be omitted.

116. In discussions leading to the proposal for including microbiological end product specifications in the code of hygienic practice for egg products, particular attention was paid to the fact that codes of this kind were only advisory in nature (guidelines) and that they were not intended to form a part of mandatory legislation. In fact, it had been suggested that to make this point clear, the title of the codes of this kind might preferably read "codes of recommended practice".

117. With reference to the draft code of practice for dried milk prepared by Australia, the attention of the Committee was drawn to a meeting of the Working Group for Revision of the Recommended International Code of Practice - General Principles of Food Hygiene, to be held in October 1976, and to the benefit that might be derived from an interchange of information between this group and the Australian group working on the code for dried milk.

118. The second Joint Expert Consultation on Microbiological Specifications for Foods was planned to be held in February-March 1977 in Geneva. This Consultation would consider and possibly draft recommendations for internationally acceptable guiding principles for the establishment and application of microbiological specifications for foods, bearing in mind the recommendation of the ISO Sub-Committee 9 of TC 34, which had expressed concern that in many instances microbiological specifications were not based on sound principles when set for certain foods. The outcome of this consultation would therefore seem to be useful background information for further work on microbiological end product specifications related to the Code of hygienic practice for dried milk.

119. The delegation of Australia, in introducing the draft for a code, reviewed the deliberations of the Committee at earlier sessions and in particular the 17th session, which had led to the development of the present code. The delegation stressed that the code took full account of the document prepared by IDF for the 16th Session of the Committee and the Code of Practice - General Principles of Food Hygiene. A relevant document for USDA - Approved Plants, had also been taken into consideration. The Codex Format had been adhered to.

120. In view of the fact that the General Principles of Food Hygiene were to be revised, the Australian delegation proposed that the draft code prepared by its country be redrafted for consideration by this Committee at its next session. Any amendments made by an ad hoc working group of the Committee on Food Hygiene, set up to revise the General Principles of Food Hygiene (which would meet in October 1976) would be taken into account.

121. The representative of the IDF stated that during the 1975 annual session in Salzburg the respective commissions of IDF had considered the report of the 17th Session of this Committee as far as the code of hygienic practice was concerned.

122. Due to the fact that IDF had already developed a Code of Hygienic Practice for the manufacture of dried milk including end product specifications, which had been appended to the Report of the 16th Session of this Committee and sent by IDF to governments for comments, and taking into account the request of this Committee to the Australian Government at its Seventeenth Session to prepare a new version of the code for dried milk, the following decisions were taken at the Salzburg meetings

(i) to await the new draft of the FA0/WHO Code of Hygienic Practice for dried milk and to comment on it, if necessary, after discussion of the document and its aims and objectives. The comments on the code would be considered during the 13th session of this Committee - thus avoiding overlapping and duplication of work.

(ii) to set up an IDF Expert Group to deal with the merits of end product specifications where appropriate for the various products in the light of the discussions of this Committee. The Group would have its first meeting in December 1976 and would consider in addition to microbiological requirements, the possible inclusion of limits for pesticide residues, heavy metals, antibiotics, as applicable to individual products.

123. The IDF representative further pointed out that with regard to methods of control for these end product specifications, the Joint IDF/ISO/AOAC Committee, on Analytical Standards was already preparing the necessary material. As set out in. the report of the Joint Committee to this Committee, work was progressing well. One of the methods, detection of organochlorine residues, would be transmitted to the Committee at Step C. Other methods, such as enumeration of coliforms, total colony count, pathogens as well as determination of heavy metals and detection of mycotoxins, were in the drafting stage.

124. The Committee took note of the different reports and thanked the delegation of Australia for the work done in preparing the present Code. In the discussion, several delegations expressed some misgivings concerning the possible use of the code. They held the view that the risk existed that importing countries would require that imported products conformed with the requirements of the code, even though the clear intention of the code was to be advisory. A number of the requirements were very detailed and general compliance with the code was not thought possible. The delegation of Poland made a number of comments on the Draft Code of Practice and agreed to transmit these to the delegation of Australia.

125. The U.S. delegation joined with other delegations in expressing sincere appreciation for the extensive work done by Australia in preparing the draft code of practice for dried milk. The delegation recognized the value of hygienic practices in the manufacture of all dairy products. However, after carefully reviewing the Australian draft, the delegation of the U.S.A. had arrived at the conclusion, supported by other delegations, that the paper, by its detailed treatment of many points, went beyond what was needed.

126. The Australian delegate asked delegations to send their comments on the Australian draft by 1 January 1977 (with copies to the Secretariat). It was agreed that the revised draft, prepared by Australia would be reproduced as a paper for distribution at the next Committee session.

127. The Committee noted that the IDF had agreed to keep the Committee informed on its work on consideration of end product specifications and that if any report were available Australia could take this into account when redrafting the code.

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

128. The Committee was informed of the work in the field of sampling and analysis done by the representatives of IDF/ISO/AOAC, during their traditional meeting prior to the present session of the Committee, by the Chairman, Dr. R.W. Weik (AQAC). The Committee accepted ten joint IDF/ISO/AOAC standards submitted to it at Step (c), and one standard at Step (G). It was noted that, following a decision by the Committee , on the elaboration of quality, hygienic requirements and microbiological specification's, a number of selected subjects would be related to the Code of Principles.

129. The Committee was further informed (i) that microbiological aspects would again be looked at in 1977 by the three Cooperative bodies during a second microbiological week; (ii) that at the request of the edible Ices Committee, methods of analysis were reviewed and (iii) that the cooperative bodies would try to hold an interim meeting before the usual meeting prior to the next session of the Code Committee.

130. The Committee accepted the report and expressed its thanks to the IDF, ISO and AOAC for their helpful contribution to the elaboration of code standards.

IMITATION MILKS

131. The Committee had before it document MDS 76/11 on imitation milk and substitute milk products, prepared by the Government of Switzerland. The Chairman introduced the subject, suggesting that the Committee should deal first with the question of whether the Committee wanted to elaborate standards for products imitating the composition and properties of milk or milk products, mainly by the substitution of non-milk fats and/or proteins for lactic fats and/or protein. He pointed out that only when this question had been dealt with could the Committee consider the question of whether it should deal with substitute products intended to have the same use and/or appearance as milk or milk products, although essentially of different composition.

132. In introducing their paper, the Swiss delegation stressed that the paper was intended to classify broad categories of milk product substitutes and that the purpose of the proposed classification for such products was to avoid terms such as "filled" milk, which were regarded as misleading within the meaning of Article 4 of the Code of Principles.

133. In the ensuing discussion, the following views were put forward:
- The matter of milk product imitation was of great concern not only to developing countries but also to countries with a developed dairy industry, as imitation products competed to a considerable extent with milk products both in developing and developed countries.

- The establishment of international standards might have a rather limited impact on the growing trade in this type of product since the elaboration of standards tends to take time and it was easy to manufacture products of a type not covered by any standard which might be elaborated.

- There was some concern that the elaboration of such standards might encourage the manufacture of products which at present were not permitted under the national legislation of a number of countries.

- Rather than developing compositional standards for specific products, a set of general rules in a general standard might be established, covering general rules of composition and labelling for products sold at retail sale as well as wholesale leyel. Such provisions should follow the principles laid down in the Recommended International General Standard for the Labelling of Prepackaged Foods, and Article 4 of the Code of Principles.

- Such standards - if a decision were reached to develop them - would be appropriate for elaboration by the Committee of Government Experts on the Code of Principles concerning Milk and Milk Products.

134. In this context, the Committee took note of a comment from the Secretariat which drew attention to the growing importance in international trade of such products and the problems a number of developing countries were facing due to the lack of an internationally agreed standards which would provide guidelines for the protection of their consumers and milk industry against imitation products inadequately labeled and which enjoyed much greater freedom from legislative restrictions than the milk products they imitated. The Committee further noted that there was no other Codex Committee which would be likely to deal with such products and it would be unlikely that the Codex Alimentarius Commission would set up another Committee for the purpose. The Committee assumed, however, that there was the possibility that the Codex Committee on Foods for Special Dietary Uses and the Codex Committee on Fats and Oils could assist, as appropriate, in establishing such standards if the Committee decided to embark upon the elaboration of standards.

135. The delegation of Ghana supported the views expressed by the Secretariat and suggested that delegates to the Committee should ask their Governments to consider the question of the development of standards for imitation products bearing in mind the interests of consumers in countries where these products were consumed.

136. The Committee decided that governments should be given a further opportunity to consider the question before reaching a decision whether standards for imitation milk products as referred to above should be developed.

137. The Secretariat was asked to check the' relevant documentation available from other bodies working in this field and prepare a working document for the next session of the Committee setting out the comments of governments on this subject.

138. The Committee agreed that the question of developing standards for "substitute" products based on other than milk constituents as referred to above would not be considered until a decision had been reached on products of which the main constituents were derived from milk.

THE TECHNOLOGICAL JUSTIFICATION FOR THE ADDITION OF NITRATE IN THE MANUFACTURE OF CERTAIN CHEESES AND PUBLIC HEALTH IMPLICATIONS

139. The Committee considered a paper prepared by the delegation of the Netherlands outlining the technological need for the addition of nitrate during the manufacture of certain cheeses of the "brine-salted" type (MDS 76/Misc). The paper also contained references to aspects of public health related to the use of nitrate.

140. The delegation of the Netherlands reviewed earlier discussions of the Committee on the use of nitrate in the manufacture of cheese and referred to the conclusions of the Codex Committee on Food Additives that in the cheese standards a maximum level for nitrate in the cheese should be specified rather than a level for nitrate in the milk used.

141. The delegate of the Netherlands proposed that the nitrate residue in cheese should be limited to 50 mg/kg of cheese. To support these views the delegation had provided copies of two NIZO publications: "On the occurrence of nitrosamines and the use of nitrate in) the production of Gouda and Edam cheese" NOV 470, and "The use of nitrate in cheesemaking. Its effect on the nitrate and nitrite content of Gouda cheese" NOV 520.

142. The delegation of Denmark supported the views presented by the Netherlands and stated that it considered the use of nitrate as an additive to milk for cheese making was technologically justified for varieties of cheeses defined as follows:

(i) Ripened cheese, except mould ripened cheese, containing not more than 63% moisture in the fat-free cheese, where the lactic acid fermentation and salting was finalized later than 12 hours after the coagulation of the milk and where the cheese was salted in brine;

(ii) notwithstanding (i) hermetically canned mould cheeses.

The quantity added should not exceed 20 g/100 kg. cheese milk. This would result in residual amounts not exceeding 50 mg/kg final product.

143. A number of delegations supported the views expressed with regard to the technological need for the use of nitrate. Other delegations (Canada, New Zealand and USA) stated that whereas in their countries regulations prohibited the use of nitrate in cheese manufacture, they considered that for certain cheeses at certain times of the year there could be a technological need for this particular additive. Still other delegations held the view that there was not technological justification for nitrate in the manufacture of cheese and that therefore no provision for this additive should be made on the standard.

144. Some delegations expressed the view that it was a question of maintaining proper hygienic conditions; others felt that the inherent health risks associated with the use of nitrate were such that no provision should be made for this substance.

145. The Committee noted that nitrate appeared on the additive list of a large number of individual cheese standards and decided to request the Committee on Food Additives to consider the provision for the use of nitrate in these cheeses in the light of the NIZO documents and the points made by the delegation of Denmark.

146. The delegations of Argentina, Australia, Brazil, Chile, France, Italy, Iran, Poland and Switzerland asked that their opposition to the provision for the use of nitrate be recorded. Some delegations proposed that the Committee should come back to the question of the use and technological need of nitrate when the result of further research both with regard to satisfactory alternatives as well as health hazard factors in relation to nitrosamine formation became available.

147. The Secretariat informed the Committee that it would regard the limit of 50 mg/kg final product as a guide as in the Recommended Individual Cheese Standards maximum levels for nitrate were provided in relation to the quantities of milk used.

148. The Committee noted that if the Food Additives Committee did not endorse the use of nitrate the appropriate provisions would need to be deleted from the standards.

REDRAFT OF GENERAL STANDARD FOR CHEESE - A-6

149. The Committee considered the General Standard for Cheese A-6 as contained in Appendix II to the 17th Session Report in the light of government comments (MDS 76/7)

and discussed in detail the definitions proposed by the U.K. in their written comments, with amendments suggested by the delegation of the U.S.A. Alternative proposals were made by the delegation of France. Because of its concern that the U.K./U.S.A. definition might allow "recombined" cheese, the delegation of the Netherlands proposed a further amendment to the U.K./U.S.A. text.

150. The U.K./U.S.A. version reads:

"Cheese is the fresh or matured solid or semi-solid product obtained:

a) by coagulating any or a combination of milk, skimmed milk, partly skimmed milk, cream, whey cream or buttermilk by partially draining the whey resulting from such a coagulation, or

b) by alternative processing of any combination of the materials listed in (a) with or without other materials obtained from milk and which give an end-product which has the same essential physical, chemical and organoleptic characteristics as the product defined under (a).

151. The Netherlands version reads:

"b) by coagulating other materials obtained from milk than those listed under (a), with or without the materials listed under (a) and the removal of whey resulting from such a coagulation, provided that the end-product has ..... etc."

152. The French version reads:

"2.1 Cheese is the product fresh or cured, solid or semi-solid, obtained by coagulation of the raw materials in 2.2 hereafter, by the agents in 2.3, this coagulation being followed by the partial elimination of whey by draining lor other suitable physical means.

2.2 Raw Materials

2.2.1 Milk, cream, skimmed or partly. skimmed milk, buttermilk.

2.2.2 Not for use singly but in combination with 2.2.1:

- whey, concentrated or not

- proteins other than casein, obtained by physical means, e.g. ultrafiltration, reverse osmosis, heating, combined or not with an acidifration either natural or by acids of which the nature and purity will be defined.

These proteins can also be contained in co-precipitates (In cheese the ratio between proteins other than casein and casein should not exceed the ratio existing in the milk).

2.3 Coagulating agents

Rennet and other harmless coagulating enzymes, the latter not coming from the stomach of young ruminants, or a mixture of rennet and those other enzymes.

2.4 Restrictions for cheeses with standards

The definition of these cheeses can allow for raw materials cited in 2.2.2 as far as their utilization gives a final product the main characteristics of which are the same as those of the defined cheese.

2.5 Flavouring agents etc.

153. Lack of time prevented the Committee from reaching a conclusion. It was however agreed that Dr. E. Green (UK) would undertake to act as the coordinator for a group of delegates to prepare a redraft of the standard based on the discussionssof the Committee during its present session and on comments in MDS 76/7. It was proposed to take advantage of the IDF Session in Canada in October 1976 for that purpose. Dr. Green would submit the redraft to the Secretariat for issue to governments and and discussion at the next session of the Committee.

154. The delegation of Denmark expressed the view that para (a) of the U.K./U.S.A. definition, on which general agreement had been reached, should remain unchanged. The delegation of France reserved its position on this point.

FUTURE WORK

155. It was noted that the Committee would have to consider at its next session:

- The redraft of the General Standard for Cheese A-6 at Step 6 of the Procedure.
- The Draft Standard for Extra Hard Grating Cheese at Step 6.
- The redrafts of the General Standards for Processed Cheeses A-8(a), A-8(b) and A-8(c) at Step 4
- The revised draft Code of Recommended Practice for Dried Milk.
- The question of imitation milk products.
- Priorities for the future work of the Committee including the question of applications for international individual cheese standards which had not yet been dealt with. The Committee agreed to ask governments which had submitted applications to provide the Secretariat with up-to-date production and export figures for the cheese varieties concerned, to submit revised texts of the standards if so required and to inform the Secretariat about the national legislation covering these varieties. The Committee would also consider proposals from countries for new individual or group standards.
- Consideration of government comments on the Meaning of Specified Deviations in Accepting Standards for Milk and Milk Products under the Code of Principles and/or the Codex Procedure (Appendix VII).
- A draft standard for co-precipitated edible casein which the IDF had prepared and would submit to the Secretariat.
- Definitions of pasteurization, sterilization and UHT processes.

DATE AND PLACE OF NEXT SESSION

156. The Committee was informed that the next session was tentatively planned for 1978. A request to take account of the timing of the IDF sessions - scheduled for 19-30 June 1978 in Paris - was noted.

APPENDIX I

LIST OP PARTICIPANTS*
LISTS DES PARTICIPANTS
LISTA DE PARTICIPANTES

* The Heads of Delegations are listed first; Alternates, Advisers and Consultants are listed in alphabetical order.

Les chefs de délégations figurent en tête; les suppléants, conseillers, consultants sont énumérés par ordre alphabétique.

Figuran en primer lugar los Jefes de las delegaciones; los Suplentes, Asesores y Consultores aparecen por orden alfabético.

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Submitted to Governments for comments

RECOMMENDED GENERAL STANDARD FOR NAMED VARIETY PROCESSED) CHEESE AND SPREADABLE PROCESS(ED) CHEESE

Standard A-8 (a)

1. DEFINITION

Named variety process(ed) cheese and spreadable process(ed) cheese is made by grinding, mixing, melting and emulsifying with the aid of heat and emulsifying agents one or more varieties of cheese, with or without the addition of foodstuffs in accordance with paragraph 2.

2. OPTIONAL INGREDIENTS

2.1 Cream, butter and butter-oil may be added in quantities to ensure compliance with the minimum fat requirements.

2.2 Salt (sodium chloride).

2.3 Spices and other vegetable seasonings in sufficient quantity to characterize the product.

2.4 For the purposes of flavouring the product, foods other than sugars, properly cooked or otherwise prepared, may be added in sufficient quantity to characterize the product provided these additions, calculated on the basis of dry matter, do not exceed one sixth of the weight of the total solids of the final product.

2.5 Cultures of harmless bacteria and enzymes.

3. FOOD ADDITIVES

3.1 Necessary Food Additives

3.1.1	Emulsifiers	**Maximum level**
3.1.1.1	Sodium, sodium-aluminium, potassium and calcium salts of the mono, di- and polyphosphoric acids.	4% m/m singly or in combination calculated as anhydrous substances but mono-, di- and polyphosphates not to exceed 3% m/m
3.1.1.2	Sodium, potassium and calcium salts of citric acid.	
3.1.1.3	Citric acid and/or phosphoric acid with sodium hydrogen carbonate and/or calcium carbonate.	

3.2 Optional Food Additives

3.2.1	Colours	**Maximum level**
	Annatto (1)	Not limited
	Beta-carotene	"
	Chlorophyll	"
	Riboflavin	"
	Oleoresin of paprika (1)	"
	Curcumine (1)	"
3.2.2	Acidifiers	**Maximum level**
	Vinegar	

	Citric acid Phosphoric acid Acetic acid Lactic acid	Within the limits specified in 3.1.1
3.2.3	Preservatives	**Maximum level**
3.2.3.1	Either sorbic acid and its sodium and potassium salts, or	3000 mg/kg
	Propionic acid and its sodium and calcium salts.	3000 mg/kg
3.2.3.2	Nisin	**Maximum level** 12.5 mg of pure nisin per kg
3.2.4	Other Additives Calcium Chloride Sodium hydrogen carbonate and/or calcium carbonate	**Maximum level** within the limits specified in 3.1.1

(1) Temporarily endorsed by the Codex Committee on Food Additives (CCFA).

4. HEAT TREATMENT

During their manufacture, products conforming to the definition of the standard shall be heated to a temperature of 70 C. for 30 seconds, or any other equivalent or greater time/temperature combination.

5. COMPOSITION AND DESIGNATION

5.1 Designation

5.1.1 When a variety name is used to describe Processed Cheese or Spreadable Processed Cheese, the cheese blend from which the product is made must contain at least 75% of the cheese variety mentioned. The remaining cheese must be of similar type.

5.1.2 Where more variety names are used to describe a product, only those varieties may be used in the manufacture of the product.

5.1.3 In this connection, it should be noted that Gruyere and Emmental are interchangeable.

5.2 Composition of a Named Variety Process(ed) Cheese.

5.2.1 The minimum milkfat content in the dry matter shall be not less than that prescribed in the international individual natural cheese standard for the variety mentioned and in the case where two or more varieties are mentioned not less than the arithmetic average of the fat contents in dry matter prescribed in the standards concerned.

5.2.2 The minimum dry matter content shall not be more than *4%* lower than the minimum dry matter content prescribed in the international standard for the variety and in the case of two or more varieties shall not be more than *4%* lower than the arithmetical average. Process(ed) Gruyere, Emmental or Appenzeller cheese will be exempt from this requirement; in these cases the minimum dry matter content shall be 50%.

5.2.3 In the case of varieties for which no international standards exist the minimum dry matter content will be related to the fat in dry matter content as prescribed in the table below

Milk Fat in Dry Matter (FDB) %	Dry Matter %
65	53
60	52
55	51
50	50
45	48
40	46
35	44
30	42
25	40
20	38
15	37
10	36
less than 10	34

5.2.4 If national legislation differing from the above exists, the national legislation of the consuming country prevails.

5.3 Composition of a Named Variety Spreadable Process(ed) Cheese

5.3.1 The fat on a dry basis shall not be less than that prescribed for the variety in the international standard for the natural cheese.

5.3.2 The minimum dry matter content shall be in accordance with the following table.

Fat in Dry Matter (FDB) %	Dry Matter %
65	45
60	44
55	44
50	43
45	41
40	39
35	36
30	33
25	31
20	29
15	29
10	29
less than 10	29

5.3.3 If national legislation differing from the above exists, the national legislation of the consuming country prevails.

6. LABELLING

The following provisions in respect of the labelling of the products and abject to endorsement by the Codex Committee on Food 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:

6.1 The Name of the Food

6.1.1 The name of a product made according to 5.1.1 shall he 'Pincessled) Cheese" or" Processed) Cheese" or "Spreadable Process(ed)------Cheese" or "—Spreadable Process(ed) Cheese" (the blank being filled with the name of the variety of cheese used).

6.1.2 The name of a product made according to 5.1.2 shall be "Process(ed)____ and _____Cheese" or '_____ and_____Process(ed) Cheese" or "Spreadable Process(ed)_.....and____Cheese" or "_____and ——Spreadable Process(ed) Cheese", in descending order of proportion.

6.1.3 In case the named variety process(ed) cheese or the named variety spreadable process(ed) cheese include spices according to 2.3 or natural foodstuffs, according to 2.4, the name of the product shall be the one applicable according to 6.1.1 and 0.1.2 followed by the term "with_____", the blank being filled with the common or usual name or names of the spices or natural foodstuffs used, in order of predominance by weight.

6.1.4 The milk fat content in the dry matter shall be declared on the label in multiples of 5% (the figures used being that of the 5% multiple immediately below the actual composition). Processed) cheese or spreadable process(ed) cheese which carries the name of a single variety of cheese covered by an international individual natural cheese standard is exempt from the declaration of the fat content.

6.2 List of Ingredients

A complete list of ingredients shall be declared on the label in descending order of proportion, in accordance with par. 3.2 (c) of the. General Standard for the labelling of prepackaged foods (ref. No, CAC/ RS 1-1969).

6.3 Net Contents

The net contents, except on individual portions not intended for separate sale, 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 food is sold.

6.4 Name and Address

The name and address of the manufacturer packer, distributor, importer, exporter or vendor of the product shall be declared, except on individual portions not intended for separate sale, in which case the declaration may be replaced by a trademark or other indication of the manufacturer, or importer, or teller.

6.5 Country of Manufacture

The name of the producing country shall be declared (fur export only).

7. METHODS OF SAMPLING & 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"

7.3 Phosphorus Content: according to FAO/WHO Standard B-12 "Determination of the Phosphorus Content of Cheese and Processed Cheese Products".

7.4 Citric Acid Content: according to FAO/WHO Standard B-13 "Determination of the Citric Acid Content of Cheese and Processed Cheese Products".

Submitted to Governments for comments

RECOMMENDED GENERAL STANDARD
FOR
"PROCESS(ED) CHEESE" AND "SPREADABLE PROCESS(ED) CHEESE"
Standard A-8(b)

1. DEFINITION

'Process(ed) cheese and spreadable process(ed) cheese are made by grinding, mixing, melting and emulsifying with the aid of heat and emulsifying agents one or more varieties of cheese, with or without the addition of milk components and/or other foodstuffs in accordance with paragraph 2,

2. OPTIONAL INGREDIENTS

2.1 Cream, butter and butter-oil may be added.

2.2 Other dairy products may be added to a maximum lactose content in the final product of 5 *%.*

2.3 Salt (sodium chloride).

2.4 Spices and other vegetable seasonings in sufficient quantity to characterize the product.

2.5 For the purposes of flavouring the product, foods other than sugars, properly cooked or otherwise prepared, may be added in sufficient quantity to characterize the product provided these additions, calculated on the basis of dry matter, do not exceed one sixth of the weight of the total solids of the final product.

2.6 Cultures of harmless bacteria and enzymes.

3. FOOD ADDITIVES

3.1 Necessary Food Additives

3.1.1	Emulsifiers	**Maximum level**
3.1.1.1	Sodium, sodium-aluminium, potassium and calcium salts of the mono-, di- and poly phosphoric acids.	4% m/m, singly pr in combination calculated as anhydrous
3.1.1.2	Sodium, potassium and calcium salts of citric acid.	substances but mono-, di- and polyphosphates
3.1.1.3	Citric acid and/or phosphoric acid with sodium hydrogen carbonate and/or calcium carbonate	not to exceed 3% m/m

3.2 Optional Food Additives

3.2.1	Colours	**Maximum level**
	Annatto (1)	Not limited
	Beta-carotene	"
	Chlorophyll	"
	Riboflavin	"
	Oleoresin of paprika (1)	"
	Curcumine (1)	"
3.2.2	Acidifiers	**Maximum level**
	Vinegar	Within the limits
	Citric acid	specified in 3.1.1

	Phosphoric acid Acetic acid Lactic acid	
3.2.3	Preservatives	
3.2.3.1	Either sorbic acid and its sodium and potassium salts, or	3000 mg/kg as the acid
	Propionic acids and its sodium and calcium salts	3000 mg/kg as the acid
3.2.3.2	Nisin	12.5 mg of pure nisin per kg
3.2.4	For products in transparent packs exclusively: Anti-oxidants	
		Maximum level
	a) Tocopherols	
	b) Gallates of the propyl, octyl and dodecyl alcohols	100 mg/kg of milk fat (as propyl gallate)
	c) Butyl hydroxy anisole	200 mg/kg of milk fat
	d) Butyl hydroxy toluene	200 mg/kg of milk fat
	Mixtures of b, c and d are permitted .provided the total content does not exceed 200 mg/kg of milk fat and the content of propyl gallate does not exceed 100 mg/kg of milk fat.	
3.2.5	**Other Additives**	**Maximum level**
	Calcium chloride Sodium hydrogen carbonate and/or calcium carbonate	within the limits specified in 3.1.1

4. HEAT TREATMENT

During their manufacture, products conforming to the definition of the standard shall be heated to a temperature of 70 °C for 30 seconds, or any other equivalent or greater time/temperature combination.

5. COMPOSITION AND DESIGNATION

5.1 Products conforming to this standard may not be designated by a cheese variety name in connection with the names "Process(ed) Cheese ' or "Spreadable Process(ed) Cheese but mention may be made fen the label of the name of a cheese variety which gives a characteristic flavour to the product (e.g. process(ed) cheese with _____).

5.2 Process(ed) cheese and Spreadable Process(ed) Cheese shall have a minimum dry matter content related to the declared minimum milk fat in dry matter content, as follows:

Milk fat in dry matter (FDB)%	Dry matter % Process(ed) cheese	Dry matter % Spreadable Process(ed) Cheese
65	53	45
60	52	44
55	51	44
50	50	43
45	48	41

40	46	39
35	44	36
30	42	33
25	40	31
20	38	29
15	37	29
10	36	29
Less than 10	34	29

(1) Temporarily endorsed by the Codex Committee on Food Additives (CCFA).

6. LABELLING

The following provisions in respect of the labelling of the products are subject to endorsement by the Codex Committee on Food Labelling. In addition to Sections 1, 2, 4 and 6 of the General Standard for the Labelling or Prepackaged Foods (Ref. CAC/RS 1-1969), the following specific provisions apply:

6.1 The Name of the Product.

6.1.1 The name of the product shall be Process(ed) Cheese or Spreadable Process(ed) Cheese as applicable.

6.1.2 In case the Process(ed) Cheese or Spreadable Process(ed) Cheese above includes spices according to 2.4 or natural foodsstuffs, according to 2.5 the name of the product shall be the one applicable above followed by the term "with_____". the blank being filled with the common or usual names of the spices or natural foodstuffs used, in order of predominance by weight.

6.1.3. The milk fat content in the dry matter shall be declared on the label in multiples of 5%, the figure used to be that of the 5% multiple below the actual composition.

6.2 List of Ingredients

A complete list of ingredients shall be declared on the label in descending order of proportion, in accordance with par. 3.2 (c) of the General Standard for the labelling of prepackaged foods (ref. No CAC/ RS 1-1969).

6.3 Net Contents

The net contents, except on individual portions, not intended for separate sale, 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 food is sold.

6.4 Name and Address

The name and address of the manufacturer, packer, distributor, importer, exporter or vendor of the product shall be declared, except on individual portions not intended for separate sale, in which case the declaration may be replaced by a trademark or other indication of the manufacturer, or importer, or seller.

6.5 Country of Manufacturer

The name of the producing country shall be declared (for export only).

7. METHODS OF SAMPLING & 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".

7.3 Phosphorus Content: according to FAO/WHO Standard B-12 "Determination of the Phosphorus Content of Cheese and Processed Cheese Products".

7.4 Citric Acid Content: according to FAO/WHO Standard B-13 "Determination of the Citric Acid Content of Cheese and Processed Cheese Products".

Submitted to Governments for comments

RECOMMENDED GENERAL STANDARD FOR PROCESS(ED) CHEESE PREPARATION PROCESS(ED) CHEESE FOOD AND PROCESS(ED) CHEESE SPREAD)

Standard A-8 (c)

1. DEFINITION

Process(ed) cheese food or process(ed) cheese spread is made by grinding, mixing, melting and emulsifying with the aid of heat and emulsifying agents one or more varieties of cheese with any selection of ingredients or additives mentioned in paragraphs 2 and 3 below.

2. INGREDIENTS

2.1 Cream, butter, butter-oil and other dairy products may be added.

2.2 Salt (sodium chloride).

2.3 Spices and other vegetable seasonings in sufficient quantity to characterize the product

2.4 For the purposes of flavouring. the products foods properly cooked or otherwise prepared, may be added in sufficient quantity to characterize the product provided these additions, calculated on the basis of dry matter, do not exceed one sixth of the weight of the total solids of the final product.

2.5 Sugars (any carbohydrate sweetening matters).

2.6 Cultures of harmless bacteria and enzymes.

3. FOOD ADDITIVES

3.1 Necessary Food Additives

	3.1 1 Emulsifiers	**Maximum level**
3.1.1.1	Sodium, sodium-aluminium, potassium and calcium salts of the mono-, di- and polyphosphoric acids.	4% m/m singly or in combination calculated as anhydrous
3.1.1.2	Sodium, potassium and calcium salts of citric acid.	substances, but mono-, di- and polyphosphates
3.1.1.3	Citric acid and/or phosphoric acid with sodium hydrogen carbonate and/or calcium carbonate.	not to exceed 3% m/m

3.2 Optional Food Additives

3.2.1 Colours	**Maximum level**
Annatto (1)	Not limited
Beta-carotene	"
Chlorophyll	"
Riboflavin	"
Oleoresin of paprika (1)	"
Curcumine (1)	"

3.2.2 Acidifiers	**Maximum level**
Vinegar	Within the limits
Citric acid	specified in 3.1.1

	Phosphoric acid	
	Acetic acid	
	Lactic acid	
3.2.3	Preservatives	Maximum level
3.2.3.1	Hither sorbic acid and its sodium and potassium salts, or	3000 mg/kg
	Propionic acid and its sodium and calcium salts	3000 mg/kg
3.2.3.2	Nisin	12.5 mg of pure nisin per kg
3.2.4.1	**Anti-oxidants & synergists**	**Maximum level**
	a) Tocopherols	
	b) Gallates of the propyl, octyl and dodecyl alcohols	100 mg/kg of milk fat (as propyl gallate)
	c) Butyl hydroxy anisole	200 mg/kg of milk fat
	d) Butyl hydroxy toluene	200 mg/kg of milk fat
	Mixtures of b, c and d are permitted providing the total content does not exceed 200 mg/kg of milk fat and the content of propyl gallate does not exceed 100 mg/kg of milk fat.	
	e) Ascorbyl palmitate	100 mg/kg milk fat (as ascorbic acid)
3.2.4.2	**Taste intenatfiers**	
	Sodium glutamate	
3.2.5	**Other Additives**	**Maximum level**
3.2.5.1	Calcium chloride	Within the limits specified in 3.1.1
	Sodium hydrogen carbonate and/or calcium carbonate	
3.2.5.2	Arabic gum (2)	**Maximum level**
	Locust (carob) bean gum (2)	
	Karaya gum (2)	
	Guar gum (1)	
	Oat gum (2)	
	Tragacanth gum (2)	
	Agar-agar	
	Carrageenan	0.8 % m/m singly or in combination
	Sodium carboxymethylcellulose (cellulose gum)	
	Sodium, potassium, calcium and ammonium salts of alginic acid	
	Propylene glycol ester of alginic acid (1)	
	Pectin	
	Gelatine	

(1) Temporarily endorsed by the Codex Committee on Food Additives(CCFA)

4. HEAT TREATMENT

During their manufacture products conforming to the definition of the standard shall be heated to a temperature of 70 °C. for 30 seconds, or any other equivalent or greater time/temperature combination.

5. COMPOSITION AND DESIGNATION

5.1 Products conforming to this standard may not be designated by a cheese variety name in connection with the name process(ed) cheese food or process(ed) cheese spread but mention may be made of the name of a cheese variety on the label in close proximity to the label declarations required under paragraph 6.2.

5.2 Process(ed) cheese food and Process(ed) cheese spread shall have a minimum dry matter content related to the declared minimum milk fat in dry matter, as follows:

(1) Temporarily endorsed by the Codex Committee on Food Additives (CCFA)
(2) Not (yet) endorsed by the CCFA

Fat in Dry Matter (FDB) %	Dry Matter %
65	45
60	44
55	44
50	43
45	41
40	39
35	36
30	33
25	31
20	29
15	29
10	29
less than 10	29

At least 51% of the dry matter of the finished product shall be derived from cheese.

6 LABELLING

The following provisions in respect of the labelling of the products are subject to endorsement by the Codex Committee on Food 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:

6.1 The Name of the Product.

6.1.1 The name of the product shall be "Processed cheese preparation" or where national regulations distinguish between "process(ed) cheese food" and process(ed) cheese spread", these names will apply.

6.1.2 In case the products include spices and natural foodstuffs as provided for under 2.3 and 2.4, the name of the product shall be the one applicable above followed by the term "with", the blank being filled in with the common or usual name or names of the spices or foodstuffs used, in order of predominance by weight.

6.1.3 The minimum milk fat content in the dry matter shall be declared on the label in multiples of 5% the figure used to be that of the 5% multiple below the actual composition.

6.2 List of Ingredients

A complete list of ingredients shall be declared on the label in descending order of proportion, in accordance with par.3.2 (c) of the General Standard for the labelling of prepackaged foods (ref.N.CAC/RS 1-1969).

6.3 Net Contents

The net contents, except on individual portions not intended for separate sale, shall' be declared by weight in either the metric ("Systeme International" units) or avois-dupois or both systems of measurement as required by the country in which the food is sold.

6.4 Name and Address

The name and address of the manufacturer, distributor, importer, exporter or vendor of the product shall be declared, except on individual portions not intended for separate sale, in which case the declaration may be replaced by a trademark or other indication of the manufacturer, or importer, or seller.

6.5 Country of Manufacture

The name of the producing country shall be declared (for export only).

7 METHODS OF SAMPLING AND ANALYSIS

7.1 Sampling according to FAO/WHO Standard B-1 "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."

7.3 Phosphorus Content: according to FAO/WHO Standard B-12 "Determination of the Phosphorus Content of Cheese and Processed Cheese Products".

7.4 Citric Acid Content: according to *FAO/WHO* Standard B-13 "Determination of the Citric Acid Content of Cheese and Processed Cheese Products."

Submitted to Governments for Acceptance

STANDARD FOR FLAVOURED YOGHURT AND PRODUCTS HEAT-TREATED AFTER FERMENTATION

1. SCOPE

This standard applies to flavoured yoghurt and the products heat-treated after fermentation.

2. DEFINITIONS

2.1 Flavoured Yoghurt is a coagulated milk product obtained by lactic acid fermentation through the action of Lactobacillus bulg. end Strep, thermophilus from milk products as listed in 3.3.1, to which have been added, flavouring foods or other flavouring ingredients as listed in 3.3.2 with or without optional ingredients. The microorganisms in the final product must be viable and abundant.

2.2 Products heat-treated after fermentation are products as described under 2.1 which have been submitted to a heat-treatment after fermentation. They need not contain viable and abundant micro-organisms.

2.3 "Sugars" mean any carbohydrate sweetening matter.

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 The milk part of flavoured yoghurts shall comply with the requirements for yoghurts as specified under 3.2.

3.2 Yoghurts

3.2.1 Yoghurt

Minimum milkfat content:	3.0% m/m
Minimum milk solids non-fat content:	8.2% m/m

3.2.2 Partially 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:	8.2% m/m

3.2.3 Skimmed yoghurt

Maximum milkfat content:	0.5% m/m
Minimum milk solids non-fat content:	8.2% m/m

3.3 Essential raw materials

3.3.1 -Pasteurized milk or concentrated milk, or

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

3.3.2 -Natural flavouring ingredient s 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 foods.

3.4 Essential additions

-Cultures of Lactobacillus bulgaricus and Streptococcus thermophilus.

3.5 Optional additions

-Sugars
-Milk powder, skimmed milk powder, unfermented buttermilk, concentrated whey, whey, powder, whey proteins, whey protein concentrate, water-soluble milk proteins, edible casein, caseinates, manufactured from pasteurized products.

-Cultures of suitable lactic acid producing bacteria in addition to those in 3.4.

-Harmless natural colouring ingredients. 4. FOOD ADDITIVES

4.1 Flavours

The terns below are defined in the "List of Additives Evaluated for their Safety-in-use in Food", CAC/FAL 1-1973 and Supp. 1.

4.1.1 Natural flavours and flavouring substances.

4.1.2 Natural identical flavouring substances.

4.1.3 Artificial flavouring substances appearing in the Codex List, CAC/FAL 1-1973 and Supp. 1.

4.2 Food Colours (which come exclusively from flavouring Substances as a result of carry-over)

	COLOUR INDEX (1971) NUMBER	MAXIMUM LEVEL (mg/kg)
Tartrazine	19140	18
Sunset Yellow FCF or Orange Yellow S	15985	12
Cochineal or Carminic Acid*	75470	20
Carmoisine or Azorubine	14720	57
Ponceau 4R or Cochineal Red A	16255	48
Erythrosine BS	45430	27
Indigo Carmine or Indigotine	73015	6
Green S or Acid Brilliant Green BS or Lissamine Green*	44090	2
Caramel Colours3	-	150
Black PN or Brilliant Black BN	28440	12
Beetreet Red or Betanin	-	250
Chocolate Brown FB*	-	30
Red 2 G	18050	30
F.D. and C. Blue No. 1 (Brilliant Blue FCF)	42090	-
Other Colouring ingredients extracted from natural fruit and vegetable sources*	-	-

4.3 Stabilizers

Furcellaran Xanthan gum Arabic gum Locust (Carob) bean gum* Karaya gum Guar gum*	5000 mg/kg

Tragacanth gum*	
Agar-agar	
Carrageenan	
Sodium carboxymethylcellulose (cellulose gum)	
Sodium, potassium, calcium and ammonium alginates (Algin)	
Propylene glycol alginate	
Pectins	10 g/kg
Gelatine	10 g/kg
Starches and modified starches appearing in the Codex List (CAL/FAL 1-1973) and supplement[1]	10 g/kg

* not yet cleared toxicologically

1/ endorsed by the Codex Committee on Food Additives

4.4 Preservatives (which come exclusively from flavouring substances as a result of carry-over)

Sorbic acid and its sodium, potassium and calcium salts, sulphur dioxide, benzoic acid at levels in the final product resulting from those permitted in individual Codex standards for fruits and fruit based products, or within a maximum of 50 mg/kg (singly or in combination) in the final product.

5. LABELLING

In addition to Sections 1, 2, 4 and 6 of the Recommended International General Standard for the Labelling of Prepackaged Foods (Ref. No. CAC/RS 1-1*969),* the following specific provisions apply:

5.1 The name of the food

5.1.1 The name of the product shall be Flavoured Yoghurt, subject to the following provisions:

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

5.1.1.2 For yoghurt with less than 3.0% milkfat but with more than 0.5% milkfat the designation shall include partly skimmed, low fat or any other suitable qualifying description. Accompanying the name of the food shall be a milk fat statement in multiples of 0.5%, e.g. 1.0%, 1.5%, 2.0$ etc. whichever is closest to the actual milk rat content of the yoghurt.

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

5.1.2 The name of the product heat-treated after fermentation shall be that specified in national regulations, subject to provisions 5.1.1.1, 5.1.1.2 and 5.1.1.3.*

* The governments are requested to notify the specific names exclusively provided in their national regulations for the products heat-treated after fermentation.

5.1.3 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.

5.2 List of Ingredients

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

5.3 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.

5.4 Name and Address

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

5.5 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.

5.6 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 or minimum durability date.

5.7 Lot identification*

Each container shall be permanently marked in code or in clear to identify the producing factory and the lot.

* Provision proposed to be included in the Standard by the Secretariat in line with the decision taken by the Committee for other standards discussed at the 18th Session (see paras 84, 93 and 107) and in accordance with the recommendation of the Codex Committee on Food Labelling.

Submitted, to Governments for Acceptance

STANDARD FOR CREAM FOR DIRECT CONSUMPTION

1. SCOPE

This standard applies to cream, half cream, whipping cream, whipped cream and double cream subjected to pasteurization, sterilization, UHT or ultra pasteurization.

2. DEFINITIONS

2.1 Product Definition

Cream is the milk product comparatively rich in fat separated from milk which takes the form of an emulsion of fat-in-skimmed milk. The final composition may be adjusted by the addition of milk or skimmed milk.

2.2 Process Definitions

2.2.1 Pasteurized creams have been subjected to the process of pasteurization by a recognized heat treatment, or which have been manufactured from pasteurized milk.

2.2.2 Sterilized creams have been subjected to a process of sterilization by recognized heat treatment in the container in which they are supplied to the consumer.

2.2.3 Ultra heat-treated creams (UHT) or ultra pasteurized creams have been subjected to a process of UHT or ultra pasteurization in continuous flow by a recognized heat treatment and have been packaged aseptically.

2.3 Forms

Air spray (aerosol) creams have been packaged under pressure in rigid containers (atomizers) made of materials suited to their use and containing an appropriate gas and permitting the distribution, by use of a valve, of the product contained in the atomizer.

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 Creams

3.1.1 Cream

Minimum milk fatcontent :	18% m/m

3.1.2 Half Cream

Minimum milk fat content :	10% m/m
Maximum milk fat content :	less than18% m/m

3.1.3 Whipping and Whipped Cream

Minimum milk fat content :	28% m/m

3.1.4 Heavy Whipping and Whipped Heavy Cream

Minimum milk fat content :	35% m/m

3.1.5 Double Cream

Minimum milk fat content :	45% m/m

3.2	Optional additions	Maximum level
	Sugar (in whipping and whipped cream only)	GMP
	Milk solids not fat, or	2%
	Caseinates	0.1%

4. FOOD ADDITIVES [1/]

4.1	Stabilizers	Maximum level
	Sodium, potassium and calcium salts of:	
	hydrochloric acid citric acid carbonic acid orthophosphoric acid polyphosphoric acid	0.2% m/m singly 0,3% m/m in combination expressed as anhydrous substances

4.2 Thickening and modifying agents (for use only in whipped pasteurized creams or in UHT cream and sterilized cream intended for whipping)

Carrageenan Alginates, Na, K, Ca Gelatine Lecithin Pectins Carboxymethylcellulose, sodium Microcrystalline cellulose Mono- and diglycerides Preparations of rennin Agar agar Vegetable gums: Acacia gum Guar gum Locust bean gum Xanthan gum	0.5% m/m singly or in combination

4.3	Harmless gases (for creams packaged under pressure and whipped creams only)	
	Carbondioxide (CO_2)	
	Nitrous oxide (N_2O)	GMP

4.4	Flavours	
	Vanilla extracts Vanillin Ethyl vanillin	GMP

5. LABELLING

In addition to Sections 1,2, 4 and 6 of the Recommended International General Standard for the Labelling of Pre-packaged Foods (Ref. Ho. CAC/RS 1-1969), the following specific provisions apply:

5.1 The name of the Food

5.1.1 The name of the product shall be (a) "Cream" (b) "Half Cream" (c) "Whipped Cream" (d) "Whipping Cream" (e) «Whipped Heavy Cream" (f) "Heavy Whipping

Cream", or (g) "Double Cream" as appropriate. The use of appropriate alternative qualifying terms in place of "Half", "Heavy" and "Double" is permitted.

5.1.2 The addition of sugar and flavouring agent(s) as listed under 4.4 shall be declared in association with the name of the product.

5.1.3 Creams should, in addition to the designations listed in 5.1.1 and 5.1.2 have a declaration of the heat treatment i.e. "pasteurized", or "sterilized" or "ultra heat-treated" or "UHT" or "ultra-pasteurized".

5.1.4 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.

[1/] Subject to endorsement by the Codex Committee on Food Additives.

5.1.5 The percentage by weight of the milkfat content shall be declared on the label.

5.2 List of ingredients

A complete list of ingredients shall be declared on the label in descending order of proportion.

5.3 Net contents

The net contents shall be declared by weight in either the metric ("Système international" units) or avoirdupois or both systeras 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,

5.4 Name and address

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

5.5 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.

5.6 Date marking

There shall be a clear indication of the minimum durability date.

5.7 Lot identification

Each container shall be permanently marked in code or in clear to identify the producing factory and the lot.

NOTE: Decision No. 5 applies to the products covered by this standard.

APPENDIX V

Submitted to Governments for Acceptance

STANDARD FOR EDIBLE ACID CASEIN

1. DEFINITION

Edible acid casein is the product obtained by separating, washing and drying the 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	2.25% 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, extracted at 20 C	0.27 ml of 0. 1 N/NaOH/g
2.7	Maximum lactose content	1 % m/m
2.8	Maximum ash (including P_2O_5)	2.5% 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

4. FOOD ADDITIVES [1] (for use for coagulation only - food grade)

Lactic acid	GMP
Citric acid	GMP
Acetic acid	GMP
Hydrochloric acid	GMP
Sulphuric acid	GMP
Phosphoric acid	GMP
Lactic fermented whey	GMP

1/ Subject to endorsement by the Codex Committee on Food additives.

5. LABELLING

This section will be revised in the light of recommendations to be made by the Codex Committee on Food Labelling on the Labelling of Bulk Containers.

5.1 The name of the food

The name of the product shall be edible acid casern.

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 goods sold within the country of manufacture need not declare the country of manufacture.

5.5 Lot identification

Each container shall be permanently marked in code or in clear to identify the producing factory and the lot.

6. METHODS OF SAMPLING AND ANALYSIS

6.1 Sampling: according to FAO/WHO Standard B-1, "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.

Note Decision No. 5 does not apply to the product covered by this Standard.

APPENDIX VI

Submitted to Governments for Acceptance

STANDARD FOR EDIBLE CASEINATES

1. DEFINITION

Edible caseinate is the dry product obtained by reaction of edible casein or fresh edible casein curd with food grade neutralizing agents and which has been subjected to an appropriate heat treatment.

2. ESSENTIAL COMPOSITION AND QUALITY FACTORS

Minimum protein content in the dry matter (Protein Nitrogen x 6. 38)

2. 1	Minimum protein content in the dry matter (Protein Nitrogen x 6. 38)	88% m/m
2.2	Maximum moisture content	8% 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 spray dried 32. 5 mg in 10 g roller dried
2.5	Foreign matter (such as particles of wood, hairs or fragments of insects)	none in 25 g
2. 6	pH value - calcium and magnesium caseinate	not higher than 7.5
	other caseinates	not higher than 7.0
2.7	Maximum lactose content	1 % m/m
2.8	Flavour and odour: not more than slight foreign flavours and odours. The product must be free from offensive flavours and odours.	
2. 9	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 in spray dried 50 mg/kg in roller dried

4. FOOD ADDITIVES (foodgrade) [1]

[1] Subject to endorsement by the Codex Committee on Food Additives.

4. 1	Optional neutralizing agents	
	Sodium, potassium, calcium, magnesium and amonium hydroxide	GMP
4.2	Optional buffering agents	
	Sodium carbonate, sodium bicarbonate, sodium, calcium and potassium, salts of citric, lactic and acetic acid	GMP

5. LABELLING

This section will be revised in the light of recommendations to be made by the Codex Committee on Food Labelling on the Labelling of Bulk Containers.

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.

5.5 Lot identification

Each container shall be permanently marked in code or in clear to identify the producing factory and the lot.

6. METHODS OF SAMPLING AND ANALYSIS

6.1 Sampling: according to FAO/WHO Standard B-1, "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.

Note Decision No. 5 does not apply to the products covered by this standard.

APPENDIX VII

THE MEANING OF SPECIFIED DEVIATIONS IN ACCEPTING STANDARDS FOR MILK AND MILK PRODUCTS UNDER THE CODE OF PRINCIPLES AND/OR THE CODEX PROCEDURES

Proposed Guidelines to Governments

The Committee considered the effect of the new Codex Acceptance Procedure in relation to standards for milk products elaborated under the Code of Principles. Since the Code of Principles Preamble states in part:

"The purpose of this Code Principles is to protect the consumer of milk and milk products and to assist the dairy industry on both the national and international levels by:

> ENSURING the precise use of the term "milk" and the terms used for the different milk products; ...
>
> ESTABLISHING (a) definitions and designations; (b) minimum standards of composition, ..."

it is very unlikely that the Committee would consider as "accepted" under any qualification the acceptance statement of a government with less than the minimum compositional requirements (less stringent requirements) for a standard.

The Committee agreed to recommend to governments that when acceptance of standards was being considered any deviation from the requirements in the standard relating to Definitions, Essential Composition and the provisions relating to the name of the food shall not be considered as specified deviations relative to acceptance of the standards except in very special circumstances not in conflict with the Code of Principles.

The Committee also recommended that governments use the forms for acceptance provided by the FAO Secretariat to transmit notices of acceptance. (See Annex on page 55).

Annex to Appendix VII

codex alimentarius commission

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

WORLD HEALTH ORGANIZATION

JOINT OFFICE: Via delle Terme di Caracalla 00100 ROME: Tel. 5797 Cables Foodagri

form for the
declaration of acceptance or non-acceptance of the

recommended codex standard

for _____

ref. no. cac/rs:_____

by country _____

This form is intended to assist FAO and WHO to compile an Official Register of Government Declarations of Acceptance or Non-Acceptance of Recommended Codex Standards. Details of the Acceptance Procedure for Codex Commodity Standards are given in the Fourth Edition of the Procedural Manual under the section General Principles of the Codex Alimentarius, paragraph 4. Governments wishing to notify their acceptance or otherwise of the Recommended Codex Standard should complete and return this form to the Chief, Joint FAO/WHO Food Standards Programme, FAO, 00100 - Rome, Italy.

Form 1

DECLARATION OF ACCEPTANCE OR NON-ACCEPTANCE

Methods of Acceptance

1. Please indicate the form of acceptance or non-acceptance which your country gives to the Recommended Codex Standard for **.....** **.....** Ref. No. CAC/RS **.....** by marking the appropriate box below:

(a) Full Acceptance ☐

(b) Target Acceptance ☐

(c) Acceptance with Specified Deviations ☐

(d) Non-Acceptance ☐

2. In addition to the above statement, please reply to the following questions:

(a) Has your country national laws, regulations and/or a national standard for the product covered by the Recommended Codex Standard?

Yes	No

(b) If the answer to 2(a) above is "yes", please indicate whether the national laws, regulations and/or the national standard are the same in all respects as the Recommended Codex Standard insofar as substance is concerned.

Yes	No

(c) If the national laws, regulations and/or the national standard are substantially different from the Recommended Codex Standard, please indicate the differences giving, if possible, the reasons for them (page 4, Part I).

Target Acceptance

3. If Target Acceptance is given to the Recommended Codex Standard, please indicate when your country expects to give Full Acceptance to the Recommended Codex Standard.

Date

Acceptance with Specified Deviations

4. If Acceptance with Specified Deviations is given to the Recommended Codex standard, please specify the deviations in detail and give reasons for them on page 4, Part II, and also indicate below:

(a) whether your country expects to be able to give Full Acceptance to the Recommended Codex Standard and, if so, when;

Yes	No
When	

(b) whether products fully conforming to the Recommended Codex Standard may be distributed freely within the territorial jurisdiction of your country in accordance with paragraph 4.A(i) of the General Principles of the Codex Alimentarius; or

Yes	No

(c) whether the product will be permitted to be distributed freely only if it complies with the specified deviations from the Recommended Codex Standard.

Yes	No

Non-Acceptance

5. If the Recommended Codex Standard cannot be accepted by your country in any of the three ways set forth in the General Principles of the Codex Alimentarius, please indicate whether products conforming to the Recommended Codex Standard may be distributed freely within the territorial jurisdiction of your country.

Yes	No

Signed by:

Name: _____

Official Title: _____

Address: _____

_____

_____

Date: _____

Part I: (see paragraph 2(c), page 2)

Part II; (see paragraph 4, page 3)

Part III; Other Observations

APPENDIX VIII

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 10 September 1976 to discuss progress on collaboration between IDF, ISO and AOAC especially in connection with analytical standards for the Code of Principles concerning Milk and Milk Products.

Present:

Dr. R. W. Weik (Chairman)	AOAC
Mrs. M. Tuinstra-Lauwaars	AOAC
Mr. E. T. McGarrahan	AOAC
Ir. J. B. Roos	ISO
Mr. S. Boelsma	ISO
Dr. H. Kay	IDF
Dr. H. Mair-Waldburg	IDF
Mr. P. Staal	IDF
[1]Mr. F. S. Anderson	Chairman, Committee of Government Experts
[1]Mr. T.L. Hall	1st Vice-Chairman, Committee of Government Experts
[1]Mr. K. P. Andersen	2nd Vice-Chairman, Committee of Government Experts
[1]Dr. F. Winkelmann	FAO
[1]Ir. W. L. de Haas	FAO

[1/] Present for part of the session only

2. Joint IDF/ISO/AOAC Standards submitted to the 18th Session of the Committee of Government Experts

2.1 Water in casein - submitted to the Committee at Step (c).

2.2 Ash in acid casein

Ash in rennet casein and caseinates Protein in casein and caseinates Free acidity in caseins pH in caseins submitted to the Committee at Step (c).

2.3 Organochlorine pesticides - submitted to the Committee at Step (ç).

2.4 Lactose in the presence of other reducing substances - submitted to the Committee at Step (c).

2.5 Titratable acidity in dried milk - new draft submitted to the Committee at Step (c).

2.6 Peroxide value re-submitted to the Committee at Step (g).

3. Present Status of Standards 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 18th Session, the Committee does decide to develop such standards, the following subjects marked with an asterisk will be related to the Code of Principles:

*3.1 Conforms - work is in progress.

*3.2 Antibiotics - work is in progress.

*3.3 Psychrotrophs - work is in progress.

*3.4 Colony count - work is in progress.

*3.5 Coagulase positive staphylococci - work is in progress.

*3.6 Yeasts and moulds - work is in progress.

3.7 Mycotoxins - work is in progress.

*3.8 Pathogens - work is in progress.

3.9 Moisture in milk and milk products - a method for determination of water in casein submitted to the Committee at Step (c).

3.10 Lactic acid, lactates and neutralizers in dried milk - work is in progress.

3.11 Foreign fat in milk fat - work is in progress.

3.12 Analysis of casein-methods for:

- ash in acid casein
- ash in rennet casein and caseinates
- protein in caseins and caseinates
- free acidity in caseins
- pH in caseins

will be submitted to the Committee at Step (c).

3.14 TBA value - work is in progress.

3.15 Heavy metals - work is in progress.

3.16 General Röse-Gottlieb method for fat determination - work is in progress.

*3.17 Water dispersion in butter - work is in progress.

*3.18 pH of butter - work is in progress.

3.19 Detection of added water in milk - work is in progress.

3.20 Sampling methods (Revision of Standard B-1) - work is in progress.

3.21 Characterization of dried milk according to heat treatment and usages - work is in progress.

3.22 Phosphorus in processed cheese (Revision of Standard B-12) - work is in progress.

3.23 Lactose in the presence of other reducing substances - a method is submitted to the Committee at Step (c).

3.24 Protein in milk (instrumental dye-binding method) - work is in progress.

3.25 Numerical selection of samples - to be referred back to the relevant Joint Group of Experts for reconsideration in the light of government's comments. A final version should be submitted to the Committee in advance of its 19th Session.

4. Other business

4.1 The group noted that a successful microbiological week was held in 1976 and another such session is planned for 1977.

4.2 The group considered a request from the Codex Committee on Edible ices to develop methods of analysis for edible ices. The IDF/ISO/AOAC group agreed to accept this request and developed a preliminary procedure for developing the requested methods in the context of existing joint groups of experts.

The procedure will be finalized before the next meeting of the Codex Committee on Edible Ices.

5. Date and place of next meeting

An attempt will be made to have an interim session of this group between the 18th and 19th Sessions. A meeting will also be held prior to the 19th Session.

APPENDIX IX –A
Step(d)

Submitted to Governments for comments

JOINT IDF/ISO/AOAC PROPOSAL

CASEINS AMD CASEINATES: DETERMINATION OF THE WATER CONTENT

(Reference method)

1. SCOPE

This standard describes a reference method for the determination of the water content of all types of casein and caseinates.

2. DEFINITION

The water content of casein and caseinates is defined as the loss of mass expressed as the percentage by mass, as determined by the procedure described below.

3. PRINCIPLE OF METHOD

Gravimetric determination by heating the test portion in a drying oven, at 102 - 1 C until constant mass.

4. REAGENTS

Nil

5. APPARATUS

5.1 Analytical balance capable of weighing to 0.1 mg.
5.2 Drying oven, well ventilated, thermostatically controlled at 102- 1 C.
5.3 Flat bottomed dishes of non-corrodible material (for example: aluminium or stainless steel) of at least 50 an (preferable 75 mm) diameter and at least 25 mm deep, fitted with tight-fitting lid which can readily be removed.
5.4 Sieve with 0.5 mm apertures.
5.5 Appropriate device for grinding casein sample.
This device should be such that no undue heat will be developed and that hardly any loss or absorption of moisture takes place in its use.
5.6 Desiccator with suitable drying agent, e.g. indicating silica gel.

6. SAMPLING

See FAO/WHO Standard B-1 "Sampling Methods for Milk and Milk Products".

7. PROCEDURE

7.1 Preparation of the sample
7.1.1 Samples which (nearly) pass a sieve with 0.5 mm apertures should be mixed by transferring 50 g of the sample to a container of a capacity of about twice the volume of the powder and repeatedly shaking and inverting the closed container.
7.1.2 Samples which do not pass a sieve with 0.5 mm apertures should be ground till they pass such a sieve. Grind approximately 50 g of the sample and transfer to an air-tight container.
7.1.3 The analysis should be carried out on the same day if possible.

7.2 Determination

7.2.1 Heat the uncovered dish with lid (5.3) in the oven (5.2) for at least 1 hour.

7.2.2 Place the lid on the dish and transfer the covered dish to the desiccator (5.6), allow to cool to the temperature of the balance room and weigh to 0.1 mg.

7.2.3 Put 3-5g of the sample into the dish, cover with the lid and weigh to 0.1 mg.

7.2.4 Uncover the dish and place it with its lid in the oven (5.2) for 4 hours.

7.2.5 Replace the lid on the dish, transfer to the desiccator, allow to cool to the temperature of the balance room and weigh to 0.1 mg.

7.2.6 Uncover the dish and heat it again, with its lid in the oven for 1 hour. Then repeat operation 7.2.5.

7.2.7 If the mass obtained in 7.2.6 is less than the mass obtained in 7.2.5 by more than 1 mg, repeat 7.2.6. Take in case of an increase of mass the lowest mass. Total drying time should normally not exceed 6 hours.

8. EXPRESSION OF RESULTS

8.1 Method of calculation

The result of each determination, as percentage by mass, corrected to the second decimal place, is equal to :

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

where

m_0 - mass, in grams, of dish with lid (7.2.2;
m_1 - mass, in grams, of dish with test portion and lid (7-2.3)
m_2 - mass, in grams, of dish with test portion and lid (7.2.6 or 7.2.7).

Take as the result the arithmetic mean of the two determinations, expressed to the first decimal place, provided that the requirement of 8.2 is satisfied; if it is not, repeat the duplicate determinations.

8.2 Repeatability

The difference between the results of duplicate determinations, carried out simultaneously or in rapid succession by the same analyst, should not exceed 0.10 g water per 100 g of the sample.

APPENDIX IX-B

Submitted to Governments for comments

Step (d)

JOINT IDF/ISO/AOAC PROPOSAL

RENNET CASEIN AND CASEINATES - DETERMINATION OF ASH(Reference method)

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a reference method for the determination of the ash of casein obtained by rennet precipitation and of caseinates.

NOTE — For the determination of the ash of mixtures with acid casein, see ISO 5544.

2 REFERENCE

See FAO/WHO Standard B-1 "Sampling Methods for Milk and Milk Products."

3 DEFINITION

ash of rennet casein or of caseinates : The substances determined by the procedure described in this International Standard and expressed as a percentage by mass.

4 PRINCIPLE

Incineration of a test portion at 825 ± 25 °C. Weighing of the residue.

5 APPARATUS

5.1 Analytical balance.

5.2 Silica or platinum dish, about 70 mm diameter and about 25 mm deep

5.3 Electrical furnace with air circulation, capable of being controlled at 825 * 25 -C.

5.4 Desiccator containing an effective desiccant,

5.5 Suitable device for grinding casein.

This device shall not heat the sample unduly during grinding.

6 SAMPLING

See FAO/WHO Standard B-1 "Sampling Methods for Milk and Milk Products."

7 PROCEDURE

7.1 Preparation of the test sample

Grind 50 g of the laboratory sample until it all passes through a sieve with 0,5 mm apertures. Store the ground sample in an air-tight container until the analysis, which should be carried out on the same day. If delay is inevitable, take all precautions to ensure proper conservation of the sample.

7.2 Determination

Heat the dish (5.2) in the electrical furnace (5.3), controlled at 825 ± 25 °C, for 30 min. Allow the dish to cool to the temperature of the balance room and weigh to the nearest 0,1 mq.

Weigh. to the nearest 1 mg, directly in or by difference into the prepared dish, approximately 3 g of the test sample (7.1). Heat the dish with its contents on a low flame until the casein is completely charred taking care that it does not burst into flame.

Transfer the dish to the electrical furnace (5.3), controlled at 825± 25 "C. and heat until all carbon has disappeared from the dish. Allow the dish to cool in the desiccator (5.4) to the temperature of the balance room and weigh to the nearest 0,1 mg.

Repeat the operations of heating in the electrical furnace (5.3), cooling and weighing, Until the results of successive weighings do not differ by more than 1 rag;

8 EXPRESSION OF RESULTS

8.1 Method of calculation and formula

The ash of the sample, as a percentage by mass, is equal to

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

where

m_0 is the mass, in grams, of the test portion;
m_1 is the mass, in grams, of the dish containing the ash;
m_2 is the mass, in grams, of the prepared dish.

8.2 Repeatability

The difference between the results of two determinations, carried out simultaneously or in rapid succession by the same analyst, should not exceed 0,1 g of ash per 100 g of product.

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 necessary for complete identification of the sample.

APPENDIX IX - C

Submitted to Governments for comments

Step (d)

JOINT IDF/ISO/AOAC PROPOSAL

Acid Casein - Determination of Ash (Reference Method)

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a reference method for the determination of the ash of casein obtained by acid precipitation or lactic fermentation and of mixtures of acid casein with rennet casein and with caseinates.

2 REFERENCE

See FAO/WHO Standard B-1 "Sampling Methods for Milk and Milk Products."

3 DEFINITION

ash of acid casein : The substances determined by the procedure described in this International Standard and expressed as percentage by mass.

4 PRINCIPLE

Incineration of a test portion at 825 ± 25 °C in the presence of magnesium acetate to bind all organic phosphorus. Weighing of the residue and subtraction of the mass of ash originating from the magnesium acetate.

5 REAGENT

5.1 Magnesium acetate tetrahydrate[$Mg(CH_3CO_2)3\ 4H_2O$]. 120 g/l solution.

6 APPARATUS

6.1 Analytical balance.

6.2 Pipette, 5 ml.

6.3 Silica or platinum dishes, about 70 mm diameter and about 25 mm deep.

6.4 Drying oven, capable of being controlled at 102 ± 2 °C.

6.5 Electrical furnace with air circulation, capable of being controlled at 825 ± 25 °C.

6.6 Boiling water bath.

6.7 Desiccator, containing an effective desiccant.

6.8 Suitable device for grinding casein.

This device shall not heat the sample unduly during grinding.

7 SAMPLING

See FAO/WHO Standard B-1 "Sampling Methods for Milk and Milk Products."

8 PROCEDURE

8.1 Preparation of the test sample

Grind 50 g of the laboratory sample until it all passes through a sieve with 0,5 mm apertures. Store the ground sample in an airtight container until the analysis, which

should be carried out on the same day If delay is inevitable, take all precautions to ensure proper conservation of the sample.

8.2 Determination

Heat two dishes (6.3) in the electrical furnace (6.5), controlled at 825±25ºC, for 30 min. Allow the dishes to cool to the temperature of the balance room and weigh to the nearest 0,1 mg.

Weigh, to the nearest 1 mg, directly in or by difference into one of the prepared dishes (A) approximately 3 g of the test sample (8.1) Add with the pipette (6.2) 5 ml *of* the magnesium acetate solution (5.1) and allow to stand for 20 min.

In the other prepared dish (B), add with the pipette (6.2) 5 ml of the magnesium acetate solution (5.1).

Evaporate the contents of both dishes (A and B) to dryness on the boiling water bath (6.6).

Place both dishes in the oven (6.4), controlled at 102 - 2 C, for 30 min.

Heat dish A with its contents on a low flame until the casein is completely charred, taking care that it does not burst into flame.

Transfer both dishes (A and B) to the electrical furnace (6.5), controlled at 825± 25ºC, and heat until all carbon has disappeared from dish A. Allow both dishes to cool in the desiccator (6.7) to the temperature of the balance room and weigh to the nearest 0,1 mg.

Repeat the operations of heating in the electrical furnace (6.5), cooling and weighing, until the results of successive weighings do not differ by more than 1 mg.

9 EXPRESSION OF RESULTS

9.1 Method of calculation and formula

The ash of the sample, including phosphorus, as a percentage by mass, is equal to

$$\frac{(m_1 - m_2) - (m_3 - m_4)}{m_0} \times 100$$

where

m_0 is the mass, in grams, of the test portion;

m_1 is the mass, in grams, of dish A containing the ash of casein and of magnesium acetate;

m_2 is the mass, in grams of the prepared dish A;

m_3 is the mass, in grams, of dish B containing the ash of magnesium acetate;

m_4 is the mass, in grams of the prepared dish B.

9.2 Repeatability

The difference between the results of two determinations, carried out simultaneously or in rapid succession by the same analyst, should not exceed 0,1 g of ash per 100 g of product.

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 necessary for complete identification of the sample.

APPENDIX IX--D

Submitted to Governments for comments

JOINT IDF/ISO/AOAC PROPOSAL

Step (d)

Caseins and Caseinates -Determination of Protein Content (Reference method)

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifics a reference method for the determination of the protein content of all types of casein and caseinates.

2 REFERENCE

See FAO/WHO Standard B-1 "Sampling Methods for Milk and Milk Products."

3 DEFINITION

protein content of caseins and caseinates : The total nitrogen content as determined by the procedure described in this International Standard, multiplied by a conventional factor and expressed as a percentage by mass.

4 PRINCIPLE

Digestion of a test portion with sulphuric acid. in the presence of copper(11) sulphate as catalyst, to convert organic nitrogen into ammoniacal nitrogen. Distillation and absorption of the ammonia in boric acid solution. Titration with standard volumetric hydrochloric acid solution Multiplication of the result by the conventional factor 6,38. In the case of the presence of ammonium salts in the sample, a correction must be applied [1)]

[1)] To test for ammonium caseinate or other ammonium compounds, add to 1 g of sample in a small conical flask. 10 ml of water and 100 mg of magnesium oxide. purse down any magnesium oxide adhering to the walls and close the flask with a cork stopper, inserting a piece of red litmus paper between the stopper and the neck of the ask. Mix the contents of the flask carefully and heat the flask in a water bath at 60 to 65 If the litmus paper colours blue within 15 min, ammonia is present.

5 REAGENTS

All reagents shall be of analytical reagent quality. The water used shall be distilled water or water of at least equivalent purity.

5.1 Sulphuric acid, concentrated, p_{20} 1.84 g/ml,

5.2 Potassium sulphate, anhydrous (K_2SO_4).

5.3 Copper(ll) sulphate pentahydrate ($CuSO_4$ $5H_2O$).

5.4 Sucrose ($C_{12}H_{22}O_{11}$).

5.5 Boric acid, 40 g/l solution.

5.6 Sodium hydroxide, concentrated aqueous solution, 40 % (m/m).

5.7 Hydrochloric acid, 0,2 N standard volumetric solution, standardized against sodium tetraborate solution.

5.8 Mixed indicator.

Mix equal volumes of a 2 g/l solution of methyl red in 96 % (V/V) ethanol and a 1 g/l solution of methylene blue in 96 % (V/V) ethanol.

6 APPARATUS

6.1 Analytical balance,

6.2 Kjeldahl flask, 500 ml capacity.

6.3 Digestion apparatus to hold the Kjeldahl flask (6.2) in an inclined position and with a heating device which will not heat the part of the flask above the surface of the liquid contents.

6.4 Liebig condenser with straight inner tube.

6.5 Outlet tube with safety bulb connected to the lower end of the condenser (6.4) by a ground glass joint.

6.6 Splash head connected to the Kjeldahl flask (6.2) and to the Liebig condenser (6.4) by soft rubber stoppers.

6.7 Conical flask. 300 ml capacity.

6.8 Graduated cylinders, 50 ml and 100 ml capacity.

6.9 Burette, 50 ml capacity, graduated in 0,1 ml

6.10 Boiling aids.

6.10.1 For the digestion : small pieces of hard porcelain, or glass beads.

6.10.2 For the distillation : freshly calcined pieces of pumice.

6.11 Suitable device for grinding casein.

The device shall not heat the sample unduly during grinding.

7 SAMPLING

See FAO/WHO Standard B-1 "Sampling Methods for Milk and Milk Products."

8 PROCEDURE

8.1 Preparation of the test sample

Grind 50 g of the laboratory sample until it all passes through a sieve with 0,5 mm apertures. Store the ground sample in an air-tight container until the analysis, which should be carried out on the same day. If delay is inevitable, take all precautions to ensure proper conservation of the sample.

8.2 Blank test

At the same time as the determination of the nitrogen content of the sample, perform a blank determination using 0,5 g of the sucrose (5.4) instead of the test portion, using the same apparatus, the same quantities of all reagents and the same procedure as described in 8.3. If the result of the blank determination exceeds 0,2 mg of nitrogen, the reagents shall be checked and the impure reagent or reagents purified or replaced.

8.3 Determination

8.3.1 Successively transfer to the Kjeldahl flask (6.2) a few pieces of procelain or a few glass beads (6.10.1), about 15 g of the anhydrous potassium sulphate (5.2) and approximately 0,5 g of the test sample (8.1), weighed to the nearest 0,1 mg.

Add 0,2 g of the copper(ll) sulphate (5.3) and wash down the neck of the flask with water. Add 20 ml of the concentrated sulphuric acid (5.1). Mix the contents of the flask.

Heat gently on the digestion apparatus (6.3) until any frothing has ceased. Boil gently until the solution is clear and colourless. During heating, shake the flask from time to time.

Continue the boiling, regulating the heating so as to condense the vapours in the middle of the flask neck. Continue the heating for 90 min, avoiding local overheating.

Allow to cool to room temperature. Add about 250 ml of water and a few pieces of pumice (6.10.2). Mix and cool again.

8 3 2 Transfer into the conical flask (6.7) 50 ml of the boric acid solution (5.5) and 4 drops of the indicator (5.8). Mix. Place the conical flask under the condenser (6.4) so that the tip of the outlet tube (6.5) is immersed in the boric acid solution. Using a graduated cylinder (6.8), add to the Kjeldahl flask 60 ml of the sodium hydroxide solution (5.6). During this operation, hold the flask in an inclined position so that the sodium hydroxide solution runs down the side of the flask to torna bottom layer.

Connect the Kjeldahl flask to the condenser by means of the splash-head (6.6)

Gently rotate the Kjeldahl flask to mix its contents. Boil gently at first, avoiding any frothing. Continue the distillation, so that 150 ml of distillate are collected in approximately 30 min. About 2 min before the end of the distillation, lower the conical flask so that the tip of the outlet tube is no longer immersed in the acid solution and rinse the tip with a little water Stop heating, remove the outlet tube and rinse its outer and inner walls with a little water, collecting the washings in the conical flask.

8.3.3 Titrate the distillate in the conical flask, using the standard volumetric hydrochloric acid solgtion-(5.7)

9 EXPRESSION OF RESULTS

9.1 Method of calculation and formula

9.1.1 Total nitrogen content

Calculate the total nitrogen content of the sample, expressed as a percentage by mass, by means of the formula

$$\frac{(V_1 - V_2) \times 0,28}{m}$$

where

V1 is the volume, in millilitres, of the standard volumetric hydrochloric acid solution (5.7) used in the determination (8.3);

V2 is the volume, in millilitres, of the standard volumetric hydrochloric acid solution (5.7) used in the blank test (8.2);

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

9.1.2 Protein content

Multiply the total nitrogen content of the sample, calculated as in 9.1.1, by the factor 6,38.

9.2 Repeatability

The difference between the results of two determinations carried out simultaneously or in rapid succession by the same analyst should not exceed 0,005 g of nitrogen per 100 g of product.

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 necessary for complete identification of the sample.

APPENDIX IX-E

Submitted to Governments for comments

Step (d)

JOINT IDF/ISO/AOAC PROPOSAL

ACID CASEIN - DETERMINATION OF FREE ACIDITY
(Reference method)

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a reference method for the determination of the free acidity in casein obtained by acid precipitation or lactic fermentation.

2 REFERENCE

See FAO/WHO Standard B-1 "Sampling Methods for Milk and Milk Products."

3 DEFINITION

free acidity of acid casein; The volume, in millilitres, of a 0,1 standard volumetric sodium hydroxide solution required to titrate an aqueous extract of 1 g of the product, under the conditions described in this International Standard.

4 PRINCIPLE

Aqueous extraction of a test portion at 60 C. Filtration. Titration of the filtrate with a standard volumetric sodium hydroxide solution, using phenolphthalein as indicator.

5 REAGENTS

All reagents shall be of analytical reagent quality. The water used shall be distilled water of at least equivalent purity.

5.1 Sodium hydroxide, 0,1N standard volumetric solution.

5.2 Phenolphthalein, 10g/l ethanolic solution.

6 APPARATUS

6.1 Analytical balance.

6.2 Beaker, 500 ml capacity, with a clock glass.

6.3 Graduated pipette, 100 ml capacity.

6.4 Conical flask, 250 ml capacity.

6.5 Burette, graduated in 0,1 ml.

6.6 Suitable filter.

6.7 Suitable device for grinding casein.

This device shall not heat the sample unduly during grinding.

7. SAMPLING

See FAO/WHO Standard B-1 "Sampling Methods for Milk and Milk Products."

8 PROCEDURE

8.1 Preparation of the test Sample

Grind 50 g of the laboratory sample until it all passes through a sieve with 0,5 nun apertures. Store the ground sample in an air-tight container until the analysis, which should be carried out on the same day. If delay is inevitable, take all precautions to ensure proper conservation of the sample .

8.2 Determination

Into the beaker (6.2), transfer 200 ml of freshly boiled water, previously heated to 60 C.

Weigh about 10 g of the test sample (8.1) to the nearest 10 mg and transfer it to the beaker containing the water at 60 C.

Cover the beaker with the clock glass and allow the mixture to stand for 30 min. Shake the beaker at intervals of about 10 min.

Filter, and cool the filtrate to about 20°C. The filtrate must be clear.

Pipette 100 ml of the cooled filtrate into the conical flask (6,4), add 0,5 ml of the ethanolic phenolphthalein solution (5.2) and titrate with the standard volumetric sodium hydroxide solution (5-1), until the appearance of a faint pink colour.

9 EXPRESSION OF RESULTS

9.1 Method of calculation and formula

The free acidity of the casein is equal to

$$\frac{2\ V}{m}$$

where

V is the volume, in millilitres, of the 0,1 N standard volumetric sodium hydroxide solution used;

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

9.2 Repeatability

The difference between the results of two determinations, carried out simultaneously or in rapid succession by the same analyst, should not exceed 0,10 ml of 0,1 N sodium hydroxide solution per gram of product.

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 necessary for complete identification of the sample.

APPENDIX IX-F

Submitted to Governments for comments

Step (d)

JOINT IDF/ISO/AOAC PROPOSAL

CASEINS - DETERMINATION OF PH
(Reference Method)

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a reference method for the determination of the pH of all types of casein.

2 REFERENCE

See FAO/WHO Standard B-1 "Sampling Methods for Milk and Milk Products.»

3 DEFINITION

pH of caseins . The pH, at 20 °C, of an aqueous extract of the product determined by the procedure described in this international Standard.

4 PRINCIPLE

Electrometric determination of the pH of an aqueous extract of a test portion, using a pH meter.

5 REAGENTS

5.1 Buffer solutions, for calibration of the pH meter (6.2).

6 APPARATUS

6.1 Conical flask, 100 ml capacity, with ground glass stopper.

6.2 pH meter with a minimum sensitivity of 0,05 pH unit.

6.3 Glass electrodes

6.4 Suitable device for grinding casein.

This device shall not heat the sample unduly during grinding.

7 SAMPLING

See FAO/WHO Standard B-1 "Sampling Methods for Milk and Milk Products."

8 PROCEDURE

8.1 Preparation of the test sample

Grind 50 g of the laboratory sample until it passes through a sieve with 0,5 mm apertures. Store the ground sample in an air-tight container until the analysis, which should be carried out on the same day. If delay is inevitable, take all precautions to ensure proper conservation of the sample

8.2 pH measurement

8 2.1 First calibrate the pH meter (6.2) with the required buffer solutions (5.1).

8 2.2 Weigh, to the nearest 0,1 g, into the conical flask (6.1), 5 g of the test sample (8.1) and add 30 ml of distilled water, freshly boiled and cooled to 20 °C.

Stopper the flask, shake by hand for 10 s and allow to stand for 20 min at 20 °C.

Decant the supernatant liquid and immediately determine the pH of this liquid, using a glass electrode (6.3) and the pH meter (6.2).

9 EXPRESSION OF RESULTS

9.1 Recording of pH

Record, as the pH of the aqueous extract, the value read from the dial of the pH meter

9.2 Repeatability

The difference between the results of two determinations, carried out simultaneously of in rapid succession by the same analyst, should not exceed 0,10 pH unit

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 necessary for complete identification of the sample.

Submitted to Governments for comments

JOINT IDF/ISO/AOAC PROPOSAL STEP (D)

DETERMINATION OF LACTOSE IN THE PRESENCE OF OTHER REDUCING SUBSTANCES

1. SCOPE AND FIELD OF APPLICATION

1.1 Scope

This standards describes an enzymatic method for the determination of lactose in the presence of other reducing substances.

1.2 Field of application

The method is suitable for dairy products and for many food stuffs containing added dairy products. The glucose content of the, sample is determined simultaneously with the lactose, but care should be exercised when using the method for products containing excessive amounts of glucose, as this may decrease the accuracy of the method.

2. DEFINITION

Lactose content is the lactose (anhydrous) content obtained by the procedure specified and is expressed as a percentage by mass of the sample.

3. PRINCIPLE OF THE METHOD *)

*) *This method is mainly based on the following publications:*

- *Bahl, R.K., "An Enzymic Method for the Determination of Slimmed milk powder in Raw Sausages" Analyst, 96 (1971), 88-92.*
- *Bahl, R.K., "An Enzymic Method for the Determination of Lactose in Milk including Human Milk" Analyst, 97(1972), 559-561.*

A purified extract of the sample is treated with the following enzymes and biochemica' substances, added simultaneously but acting in sequence:

3.1 ß -galactosidase (EC 3.2.1.23) **) to split lactose into glucose and galactose.

**) *The EC number refers to the Enzyme Classification number as given in:*

- *The International Union of Biochemistry, "Enzyme Nomenclature", Elsevier Publ. Co Amsterdam J 965.*

3.2 Hexokinase (EC 2.7.1.1) and adenosine triphosphate (ATP) to phosphorylate glucose, both that origini-nally present and that liberated by step 3.1, to glucose-6-phosphate (G-6-P).

3.3 Glucose-6-phosphate dehydrogenase (G-6-PD, EC 1.1.1.49) in the presence of nicotinamide-adenine dinucleotide phosphate (NADP*) to oxidise G-6-P to 6-phosphogluconate (6-GP) and to convert NADP* to NADPH.

3 4 The extinction at 340 nm of the sample solution, relative to a blank solution (3.1 omitted), is measured, from which the concentration of NADPH in the sample solution and hence the lactose content of the sample are calculated.

Note: The blank compensates, infer alia, for any glucose originally present in the sample (6).

4. REAGENTS

Where not otherwise specified the reagents should be of analytical grade. Water used in the preparation of enzym solutions shall be of at least doubly glass-distilled purity and water used for other purposes shall be glass-distilled or of at least equal purity.

4.1 Iron solution

Dissolve 162 g of Iron (HI) chloride hexahydrate ($FeCI_3$. $6H_2O$) in 500 ml of water. Finally make up to 1 litre with water.

(Note: "Dialyzed iron solution " with 5% iron, as marketed, may be used for convenience).

4.2 Sodium sulphate solution

Dissolve 200 g of sodium sulphate decahydrate (Na_2SO_4. 10 H_2O) in water and make up to 1 litre.

4.3 ß -galactosidase suspension (in $(NH_4)_2SO_4$ -solution; as supplied by many manufacturers, or a corresponding preparation)

The specific activity of the *(ß* -galactosidase suspension should amount to at least 150 U/ml and the activity of the suspended solid ß -galactosidase should amount at least to 30 U/mg. Stored in a refrigerator, that preparation will have sufficient strength to be used up to 12 months. When used the vessel with the enzyme should be kept immersed in crushed ice (see 4.5,4.6 and 4.7).

(Note: the ß -galactosidase should not contain more titan 0,01% each of galactose dehydrogenase, a -galactosidase, glucose dehydrogenase, a -glucosidase or invertase and not more than 0,1 % of lactate dehydrogenase calculated'in terms of the specific activity of the enzyme).

4.4 Sodium phosphate buffer

0,2 M sodium phosphate, pH 7,5, 1 mM Mg S04. Dissolve 4,2 g sodium dihydrogen phosphate mono-hydrate (NaH_2 PO_4. H_20), 30,2 g disodiumhydrogen phosphate dihydrate (N_2 $HP0_4$. $2H_2O$) and 0,25 g magnesium sulfate hepahydrate (Mg $S0_4$. $7H_2O$) in ca 700 ml water. Check the pH (desired pH 7,5). Dilute to 1000 ml with water.

The solution should be stored at 4 °C.

4.5 Sulfuric acid, analytical grade, density 1.84 g/ml (95-97%).

4.6 $NADP^+$-solution *)

(12 mM in water)

Stored in refrigerator it will keep for 3 weeks. When the solution is in use the vessel should be kept immersed in crushed ice.

**) see note under 4.7.*

4.7 ATP-solution *)
(80 mM in water)

Stored in refrigerator, it will keep for 3 weeks. When the solution is in use the vessel should be kept immersed in crushed ice.

**) (Note: NADP* and ATP may be purchased in a variety of forms, like free acid, monosodium salt, disodium salt, disodium salt and potassium salt, and with various assay values. Depending on supply any type with sufficient purity may be used. Each laboratory can then easily calculate current weight corresponding to the specified number of millimoles).*

4.8 Hexokinase/G-6-P-D (as supplied by many manufacturers)

A solution in water of hexokyiase fréfrr baker's yeast (crystallized and lyophilized) and glucose-6-phosphate dehydrogenase from baker's yeast (crystallized, lyophilized, sulfate free) containing at least 100 units of hexokinase and 50 units of glucose-6-phosphate dehydrogenase per ml. The solution should be stored in refrigerator to prevent bacteria growth. This preparation will have sufficient strength to be used y to 12 months. It is advisable to treat this and the other enzyme solutions in the same manner as reagiits 4.6 and 4.7 when used.

(Note I : this reagent may be obtained commercially as a ready-made mixture, where the ratio of hexokinase to G-6-P-D activity is 2:1).

(Note 2: the reagents 4.4, 4.6 4.7and 4.8 may be obtained commercially in kits).

4.9 Mixed enzyme reagent for 7.4.6.2

100 parts of	4.4	(Sodium phosphate buffer)
5 "	" 4.6	($NADP^+$)
5 "	" 4.7	(ATP)
1 "	" 4.8	(Hexokinase-glucose-6-phosphate dehydrogenase).

This reagent is stable for 12 hours at 25 ° and for 4 days at 4 °.

(Note: this reagent may be used for convenience in routine determinations. The use of the individual reagents 4.4, 4.6, 4.7 and 4.8 is preferable in non-routine work).

5. APPARATUS

5.1 Balance of 0.1 mg sensitivity.

5.2 Pipettes of 2 ml, 1 ml, 100 µl and 20 µl capacity.

5 3 Graduated cylinders 250 ml and 25 ml.

5.4 Filter paper, 15 cm m diameter, of the grade whatman no 4 or equivalent.

5.5 Filtration funnels, diameter 10 cm.

5.6 Spectrophotometer permitting the measurement of extinction at a wave length of 340 nm, and cells of I cm light path.

5.7 Test tubes suitable for mixing sample and reagents and for subsequent incubation. 100 x 10 mm tubes are suggested as suitable.

5.8 High speed numerating equipment or other suitable mixing device.

5.9 Centrifuge capable of handling 50 ml vessels and producing at least 500 g. Centrifuge tubes suitable for step 7.4.4.

5.10 Waterbath, maintained at 30 ° +.0.5 °, for incubation of the sample-enzyme mixtures in the test tubes.

6. SAMPLING

See IDF Standard 50: "Standard methods for sampling milk and milk products" or other appropriate inter nationally standardized method.

7. PROCEDURE

7.1 Preparation of the sample

If necessary, the sample should be adequately mixed before analysis so that the analyzed portion is representative of the sample taken.

7.2 Water content of the sample

To permit accurate addition of water at step 7.4.2 the water content of the sample must be known.

7.3 Blank test

This blank test is used to compensate for any glucose originally present and for the optical properties of the reagents. It is carried out as described in clause 7.4 except that 20 µl of water instead of reagent 4.3 (0 - galactosidase) is added (sec 7.4.7). The solution is used as an optical blank in the photometric measurement as described in 7.4.9.

7.4 Determination

7.4.1 Weigh accurately an amount of sample that contains from 0.2 to 0.6 g of lactose.

If the sample is sticky weigh the sample on a piece of wax paper or filter paper, and let the paper follow the sample in *74.2*

7.4.2 Add the sample to the macerating' equipment together with 20 ml of reagent 4.1 (iron solution) and 20 ml of reagent 4.2 (sodium sulphate) as well as an amount of water that due to the water content of the sample makes a total of 250 ml.

(Note: Due to fat, protein and other substances present, the total volume of the dispersion is more than 2.10 ml).

7.4.3 Macerate the sample avoiding excessive loam formation. Check the pH of the suspension. If it is above 5.0, add a few drops of concentrated sulfuric acid to adjust the pH within 4.8 - 5.0.

(Note: as usually not more than 2 - 4 drops of acid are required, their volume is negligible in comparison with the volume of 250 ml).

7.4.4 Centrifuge the dispersion for 15 minutes at at least 500 g. If necessary filter the supernatant.

7.4.5 Depending on the expected lactose content, use 1 ml of the filtrate for the determination Or dilute a suitable aliquot of the filtrate to 100 ml and use 1 ml of that dilution for the determination.

7.4.6 Enzyme addition

7.4.6.1 The case of one single sample or only a few samples.

In sequence, transfer by pipette to each of two test tubes:

- 1 ml of filtrate of diluted filtrate 7.4.5
- 2 ml of reagent 4.4 (sodium phosphate buffer)
- 100 µl of reagent 4.6 ($NADP^+$)
- 100 µl of reagent 4.7 (ATP)
- 20 µl of reagent 4,8 (hexokinase-glucose-6-phosphate dehydrogenase).

Mix the content of each test tube.

7.4.6.2 The case of many samples.

Transfer by pipette to each of two test tubes:

- 1 ml of filtrate or diluted filtrate 7.4.5
- 2 ml of reagent 4.9 (mixed enzyme reagent)

Mix the contents of each test tube.

7.4.7 Add 20 µl or reagent 4.3 *(ß* -galactosidase) to each test tube acting as the sample tube and 20 µl of water to the test tube acting as the blank mix.

7.4.8 Incubate the test-tubes at 30 ° for 30 minutes and transfer the contents to 2 photometer cells (5.6'

7.4.9 Measure the extinction at 340 nm of the sample solution against the blank solution.

8. EXPRESSION OF RESULTS

8.1 Calculation

Since E =ecd

Where E is extinction of sample solution (7.4.9);

e is molar extinction coefficient of NADPH at 340 nm, i.e. 6.22 x 103 litre mol -1 cm-1

c is concentration, in moles per litre, of NADPH in sample solution (7.4.9);

d is light path of cell in cm, i.e. l;

then

$$c = \frac{E}{6,22 \times 10^3} = \text{moles lactose per litre sample solution}$$

The lactose (anhydrous) content of the laboratory sample in % (m/m) is therefore obtained by using the following formula:

$$L = \frac{E \times 342,30 \times V_1 \times 250 \times 100}{6,22 \times 10^3 \times 1000 \times 1 \times V_2 \times m}$$

or

$$L = 1,376 \times \frac{E \times V_1}{m \times V_2}$$

where L is grams lactose (anhydrous, MW = 342.30) per 100 g sample

V_1 is volume, in millilitres, of sample solution (7.4.7), i.e. 3.24 (7.4.6.1) or 3.02 (7.4.6.2)

V_2 is volume, in millilitres, of undiluted filtrate (7.4.5) in step 7.4.6.1, used either in its undiluted form (V2 = 1 ml) or its diluted form (V2 =less than 1 ml);

M is mass, in grams, of (test portion (7.4.1).

(Note: The content of a -lactose monghydrate is obtained from the amount of anhydrous lactose by multiplication of the latter by the factor 1,0526).

8.2 Repeatability

The difference between the results of 2 determinations, carried out simultaneously or in rapid succession by the same analyst, using the same apparatus, should not exceed 0.10 g of lactose per 100 g of sample.

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 XI

Submitted to Governments for comments

JOINT IDF/ISO/AOAC PROPOSAL

Step (d)

DRAW STANDARD METHOD FOR THE DETERMINATION OF TITRATABLE ACIDITY IN MILKPOWDER

(Reference method)

1. Scope

This standard specifies a reference method for the determination of the titratable acidity of all types of milkpowder. In an annex a routine method is given.

2. Definition

The titratable acidity of milkpowder is defined as the number of millilitres of a 0.1 N sodium hydroxide solution required to titrate a quantity of the reconstituted sample corresponding to 10 g of fat free dry milk solids to the pH of 8.3

3. Principle of method

The test sample is reconstituted in water and titrated with a 0.1 N sodium hydroxide solution until the pH of 8.3.
The amount of sodium hydroxide solution required is determined by the natural buffering substances of the milk constituents, by developed or added acid or alkaline substances.

4. Reagents and auxiliaries

All reagents should be of analytical reagent quality.

4.1 Solution of sodium hydroxide standardized to 0.1 N ± 0.0002.

4.2 Distilled or deionized water, freed from carbon dioxide by boiling for 10 min before use.

4.2 Nitrogen.

5. Apparatus and glassware

5.1 Balance, 0.01 g or better sensitivity.

5.2 pH meter, with a glass electrode and a suitable reference electrode, calibrated using buffers with known pH of about 6 and 9.

5.3 Magnetic stirrer.

5.4 Burette, graduated to 0.1 ml and with an accuracy of 0.05 ml.

5.5 Graduated cylinders of 50 ml capacity.

5.6 Conical flasks with ground glass stoppers, 100 ml or 150 ml capacity.

6. Procedure

6.1 Preparation of the sample.
Transfer the milkpowder to a clean, dry container (provided with an air-tight lid) of a capacity about twice the volume of the milkpowder. Close the container immediately and thoroughly mix the milkpowder by

repeatedly shaking and inverting the container. During the preparation of the sample, exposure of the milkpowder to the atmosphere should be avoided as far as possible to minimize adsorption or water.

6.2 Determination.

6.2.1 Weigh g ± 0.01 g of the test sample into a conical flask (5.6);

a = the fat free dry milk solids content of the sample.

6.2.2 Add 50 ml water (4.2) of about 20°C.

6.2.3 Reconstitute thoroughly by vigorous agitation and allow to stand for about 20 min.

6.2.4 Titrate the content of the conical flask by adding the sodium hydroxide solution while stirring until the pH has reached the value 8.3. Absorption of carbon dioxide from the air should be avoided by flushing the conical flask with nitrogen.
The titration should be carried out within one min.
Record the number of millilitres of sodium hydroxide solution used to the nearest 0.05 ml.

7. Calculation

Titratable acidity = 2 x V

where:

V = the number of millilitres of 0.1 N sodium hydroxide solution recorded under 6.2.4.

Results should be reported to one decimal place.

8. Repeatability of results

The difference between results of duplicate determinations (results obtained simultaneously or in rapid succession by the same analyst) should not exceed 0.4.

9. Test report

The test report shall show the method used and the result obtained. It shall 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 test report shall include all details required for the complete identification of the sample.

APPENDIX XII

Submitted to the Committee for Approval

JOINT IDF/ISO/AOAC PROPOSAL Step (g)

CHEESE- DETERMINATION OF NITRATE and NITRITE CONTENTS

(Reference method)

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a reference method for the determination of the nitrate and nitrite contents of cheese.

The method is suitable for hard, semi-hard and soft cheeses of various ages and for processed cheese.

2 REFERENCE

See FAO/WHO Standard B-1 "Sanroling Methods for Milk and Milk Products."

3 DEFINITIONS

Nitrate and nitrite contents of cheese: The contents of substances determined by the procedure described in this International Standard and expressed respectively as milligrams of nitrate (NO_3) and of nitrite (NO_2)/ per kilogram (parts per million).

4 PRINCIPLE

Extraction of the cheese with warm water, precipitation of the fat and proteins and filtration.

Reduction of the extracted nitrate, in a portion of the filtrate, to nitrite, by copperized cadmium.

Development of a red colour, in portions of both unreduced filtrate and of the reduced solution, by addition of sulphanilamide and N-l-naphthyl-ethylenediamine dihydrochloride, and photometric measurement at a wavelength of 538 nm.

Calculation of the nitrite content of the sample and of the total nicrice content after reduction of nitrate, by comparing the measured absorbances with those of a -series of standard sodium nitrite solutions; calculation of the nitrate content from the difference between these two contents.

5 REAGENTS

All reagents shall be of analytical quality. The water used shall be distilled or deionized, free from nitrite and nitrate.

NOTE - In order to avoid a possible inclusion of small gas bubbles in the copperized cadmium column (6.10), the distilled or deionized water used for the preparation of the column (8.1), for checking the reducing capacity of the column. (8.2), and for reconditioning of the column (S.3) should preferably be freshly boiled and afterwards cooled to room temperature.

5.1 Cadmium granules, diameter u,

5.2 Copper (II) sulphate solution.

Dissolve 20 g of copper(II) sulphate pentahydrate ($CuSO_4.5H_20$) in water and dilute to. 1000 ml.

5.3 Buffer solution, pH 9,6 to 9,7.

Dilute 50 ml of concentrated hydrochloric acid (p_{20} 1,19 g/ml) with 600 ml of water. After mixing, add 100 ml of concentrated ammonia solution (p_{20} 0,88 g/ml). Dilute to 1000 ml with water and mix. Adjust the pH to 9,6 to 9,7 if necessary.

5.4 Hydrochloric acid solution, about 2 N.

Dilute 160 ml of concentrated hydrochloric acid (p_{20} 1,19 g/ml) to 1000 ml with water.

5.5 Hydrochloric acid solution, about 0,1 N.

Dilute 50 ml of 2 N hydrochloric acid solution (5.4) to 1000 ml with water.

5.6 Solutions for precipitation of proteins and fat.

5.6.1 Zinc sulphate solution.

Dissolve 53,5 g of zinc sulphate heptahydrate ($ZnS0_4.7H_2O$) in water and dilute to 100 ml.

5.6.2 Potassium hexacyanoferrate(II) solution.

Dissolve 17,2 g of potassium hexacyanoferrate(II) - trihydrate ($K,Fe(CN)_6.3H_2O$) in water and dilute to 100 ml.

5.7 EDTA solution. Dissolve 33,5 g of the disodium salt of ethylenedinitrilotetraacetic acid, ($Na_2C_{10}H_{14}N_2O_8.2H_2O$) in water and dilute to 1000 ml.

5.8 Sodium nitrite standard solution. Dissolve in water 0,150 g of sodium nitrite ($NaNO_2$), dried to constant mass at 110 to 120°C, dilute to 1000 ml with water in a one-mark volumetric flask and mix well.

Dilute, on the day of use, 10 ml of this solution with 20 ml of the buffer solution (5.3) and dilute further to 1000 ml with water in a one-mark volumetric flask. Mix well.

1 ml of this final dilution contains 1,00 µg of NO^-_2.

5.9 Solutions necessary for colour development.

5.9.1 Solution I

Dissolve, by heating on a water bath, 0,5 g of gulphanilamide ($NH_2C_6H_4SO_2NH_2$) in a mixture of 75 ml of water and 5 ml of concentrated hydrochloric acid (P_{20} P,19 g/ml). Cool to room temperature and dilute, to 100 ml with water. Filter if necessary.

5.9.2 Solution II

Dilute 450 ml of concentrated hydrochloric acid (p20 1,19 g/ml) to 1000 ml with water.

5.9.3 Solution III

Dissolve 0,1 g of N-1-naphthyl-ethylenediamine dihydrochloride ($C_{10}H_7NHCH_2CH_2NH_2.2HCl$) in water. Dilute to 100 ml with water. Filter if necessary.

Store the solution in a well-stoppered brown bottle in a refrigerator, for not longer than one week.

5.10 Potassium nitrate standard solution.

Dissolve in water 1,468 g of potassium nitrate (KN03), dried to constant mass at 110 to 120°C, and dilute to 1000 ml with water in a one-mark volumetric flask.

Dilute, on the day of use, 5 ml of this solution with 20 ml of the buffer solution (5.3) and dilute further to 1000 ml with water in a one-mark volumetric flask. Mix well.

1 ml of this final dilution contains 4,50 µg of NO_3^-.

6 APPARATUS

All glassware shall be thoroughly cleaned and rinsed with distilled water to ensure that it is free from nitrate and nitrite.

6.1 Analytical balance.

6.2 Appropriate grinding device.

6.3 Suitable laboratory mixer/homogenizer with glass containers of 250/400 ml capacity.

6.4 Conical flasks of 250 ml capacity.

6.5 Volumetric flasks of 100, 500 and 1000 ml. capacity, complying with ISO/R 1042, Class B.

6.6 Pipettes, to deliver 2, 4,. 5, 6, 8, 10, 12, 20, 25 and 50 ml, complying with ISO/R 648, Class A, or ISO/R 835.

NOTE -Where appropriate, burettes may be used instead of pipettes.

6.7 Graduated cylinders of 5, 10, 25, 100, 250, 500 and 1000 ml capacity.

6.8 Glass funnels, diameter about 7 cm, with short stem.

6.9 Filter paper, medium grade, diameter about 15 cm, nitrate and nitrite free.

6.10 Reduction column (for example, as shown in the figure).

6.11 Photoelectric colorimeter or spectrophotometer, suitable for making readings at a wavelength of 538 nm, with cells of 1 to 2 cm optical path length.

7 SAMPLING

7.1 See FAO/WHO Standard B-1 "Sampling Methods for Milk and Milk Products."

7.2 Store the sample in such a way that deterioration and change in composition are prevented.

8 PROCEDURE

8.1 Preparation of the copperized cadmium column

8.1.1 Transfer the cadmium granules (5.1) (approximately 40 to 60 g for each column) into a 250 ml conical flask.

8.1.2 Add sufficient 2 N hydrochloric acid solution (5.4) to cover the cadmium. Swirl for a few minutes.

8.1.3 Decant the solution and wash the cadmium in the flask with water, until it is free from chloride.

8.1.4 Copperize the cadmium granules by adding copper(II) sulphate solution (5.2) (about 2,5 ml per gram of cadmium) and swirling for 1 min.

8.1.5 Decant the solution and wash the copperized cadmium immediately with water, taking care that the cadmium is continuously covered with water. Terminate the washing when the wash water is free from precipitated copper.

8.1.6 Fit a glass wool plug to the bottom of the glass column intended to contain the copperized cadmium (see figure). Fill the glass column with water.

8.1.7 Transfer the copperized cadmium into the glass column with minimum exposure to air. The height of the copperized. cadmium should be 15 to 20 cm.

NOTES - 1 Avoid trapping air bubbles between the copperized cadmium granules.

2 Take care not to allow the level of the liquid to fall below the top of the copperized cadmium.

8.1.8 Condition the newly prepared column by running through it a mixture of 750 ml of water, 225 ml of standard potassium nitrate solution (5.10), 20 ml of buffer solution (5.3) and 20 ml of EDTA solution (5.7), at a flow rate not exceeding 6 ml/min. Then wash the column with 50 ml of water.

8.2 Checking the reducing capacity of the column

Carry out this checking at least twice a day, at the beginning and at the end of a series of determinations.

8.2.1 Pipette, 20 ml of standard potassium nitrate solution (5.10) into the reservoir on top of the column. Immediately add 5 ml of buffer solution (5.3) to the contents of the reservoir. Collect the effluent in a 100 ml volumetric flask. The flow rate shall not exceed 6 ml/min,

8.2.2 When the reservoir has nearly run empty, wash the walls of the reservoir with about 15 ml of buffer solution (5.3) and, when this has run off, repeat the same treatment with another 15 ml portion of buffer solution. After this second portion of buffer solution has run into the column as well, completely fill the reservoir with buffer solution and allow it to pass through the column at maximum flow rate.

8.2.3 After nearly 100 ml of effluent has been collected, remove the volumetric flask, make up to the mark with water and mix well.

8.2.4 Pipette 10 ml of the eluate into a 100 ml volumetric flask. Add water to obtain a volume of about 60 ml. Proceed as specified in 3.9.2, 3.9.3 and 8.9.4-

8.2.5 If the nitrite concentration of the diluted eluate (8.2.4), as determined from the calibration curve (8.10), is below 0,063 µg of N02 per millilitre (i.e. 95% of theoretical value), the column should be reconditioned.

8.3 Reconditioning of the column

After use at the end of every day and if the reduction efficiency of the column is reduced during use, it must be reconditioned as follows.

8.3.1 Add about 5 ml of EDTA solution (5.7) and 2 ml of 0,1 N hydrochloric acid solution (5.5) to 100 ml of water. Run the mixture through the column at a flow rate of about 10 ml/min.

8.3.2 When the reservoir has run empty, wash the column with water, 0,1 N hydrochloric acid solution and water successively.

8.3.3 If the column still does not show a satisfactory efficiency, repeat the procedure specified in 8.1.8.

8.4 Preparation of the test sample

Prior to analysis, remove the rind or smear or mould surface layer of the cheese, in such a way as to provide a sample representative of the cheese as it is usually consumed. Grind the sample by means of an appropriate device ; mix the ground mass quickly, and if possible grind a second time and again mix thoroughly. If the sample cannot be ground, mix it thoroughly by intensive stirring and kneading.

Transfer the test sample to an air-tight container to await analysis, which should be carried out as soon as possible after grinding. If delay is unavoidable, take all precautions to ensure proper preservation of the sample and to prevent condensation of moisture on the inside surface of the container. Ground cheese showing unwanted mould growth or beginning to deteriorate should not be examined.
Clean the device after grinding each sample.

8.5 Test portion

Weigh 10 g of the test sample to the nearest 1 mg and transfer it quantitatively into the glass container of the mixer/homogenizer (6.3).

8.6 Extraction and deproteination

8.6.1 Add gradually 164 ml of warm water (50 to 55°C) to the test portion. Mix in the mixer/homogenizer until the cheese is well suspended.

8.6.2 Add, in the following order, 6 ml of zinc sulphate solution (5.6.1), 6 ml of potassium hexacyanoferrate(II) solution (5.6.2) and 20 ml of buffer solution (5.3) to the cheese suspension, swirling thoroughly after each addition.

8.6.3 After 3 min, filter through a filter paper (6.9),. collecting the filtrate in a 250 ml conical flask.

NOTE - It is necessary to obtain a clear filtrate. For this purpose, if well-natured cheeses are analysed, 'it might be necessary to use a larger quantity of precipitation reagents.

8.7 Reduction of nitrate to nitrite 8.7.1 Pipette 20 ml of the filtrate (8.6.3) into the reservoir on top of the reduction column. Add 5 ml of buffer solution (5.3) to the contents of the reservoir. Collect the effluent in a 100 ml volumetric flask. The flow rate shall not exceed 6 ml/min.

8.7.2 When the reservoir has nearly run empty, wash the walls of the reservoir with about.15 ml of buffer solution and, when this has run off, repeat the same treatment with another 15 ml portion of buffer solution-. After this second portion of buffer solution has run into the column as well, completely fill the reservoir with buffer solution and allow it to flow through the column at maximum flow rate.

8.7.3 After nearly 100 ml of effluent has been collected, remove the volumetric flask, make up to the mark with water and mix well.

8.8 Preparation of solution for determination of nitrite in sample.
Pipette 20 ml of the filtrate (8.6.3) into a 100 ml volumetric flask, make up to the mark with water and mix well.

8.9 Determination

8.9.1 Pipette equal aliquots (for example 25 ml) of the diluted filtrate (8.8) and of the eluate (8.7.3) into separate 100 ml volumetric flasks. Add water to each to obtain a volume of about 60 ml. Then treat the contents of each flask as in 8.9.2, 8.9.3 and 8.9.4.

8.9.2 Add 5 ml of solution I (5.9.1) and then 6 ml of solution II (5.9.2).

Mix carefully and leave the solution for 5 min at room temperature, protected from direct sunlight.

8.9.3 Add 2 ml of solution III (5.9.3). Mix carefully and leave the solution for 5. min at room temperature, protected from direct sunlight. Make up to the mark with water and mix well.

8.9.4 Measure the absorbance of the solution against that of a reagents blank (8.10) at a wavelength of 538 nm.

8.9.5 Carry out two determinations on the same diluted filtrate (8.8) and two determinations on the same eluate (8.7.3).

8.10 Blank test

Carry out a reagents blank test using all reagents and 4 ml of water instead of the test portion.

8.11 Calibration curve

8.11.1 Pipette 0, 2,4,6, 8, 10, 12, 16 and 20 ml of the standard sodium nitrite solution (5.8) into separate 100 ml volumetric flasks. Add water to each volumetric flask to obtain volumes of about 60 ml.

8.11.2 Carry out the procedure described in 8.9.2 and 8.9.3.

8.11.3 Measure the absorbances of the solutions against that of the first solution (containing no sodium nitrite) at a wavelength of 538 nm.

8.11.4 Plot the absorbances obtained in 8.11.3 against the added amounts of nitrite, in micrograms, per millilitre.

9 EXPRESSION OF RESULTS

9.1 Nitrite content

9.1.1 Method of calculation

Calculate the nitrite content of the sample, expressed as milligrams of nitrite NO_2^-(5X) per kilogram, using the formula:

$$NO_2^-(5\times) = \frac{100\,000\ c_1}{m \times V}$$

where

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

c_1 is the concentration, in micrograms ofNO-2(5X) per millilitre, read from the calibration curve, that corresponds with the measured absorbançe (8.9.4) of the solution obtained using the diluted filtrate (8.8);

V is the volume, in millilitres, of the aliquot taken (8.9.1) from the diluted filtrate (8.8).

Take as the result the arithmetic mean of the two determinations (8.9.5). Report the result to the nearest 0,1 mg/kg.

9.1.2 Repeatability

The difference between the results of a determination in duplicate (results obtained almost simultaneously or in rapid succession by the same analyst) shall not exceed 1 mg/kg. 9.2 Nitrate content 9.2.1 Method of calculation

Calculate the nitrate content of the sample, expressed as milligrams of nitrate NO-2(2X) per kilogram, using the formula:

$$NO_3^- (2\times) = 1,35\left(\frac{100000 \times c_2}{m \times V} - NO_2 (5\times)\right)$$

where

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

c2 is the concentration, in micrograms of No 2 per millilitre, read from the calibration curve, that corresponds with the measured absorbance (8.9.4) of the solution obtained using the eluate (8.7.3);

V is the volume, in millilitres, of the aliquot taken (8.9.1) from the eluate (8.7.3);

NO-2(5X) is the nitrite content of the sample, expressed as milligrams per kilogram, calculated as described in 9.1.1.

Take as the result the arithmetic mean of the two determinations (8.9.5). Report the result to the nearest 1 mg/kg,.

9.2.2 Repeatability

The difference between the results of a determination in duplicate (results obtained almost simultaneously or in rapid succession by the same analyst) shall not exceed 3 mg/kg if the nitrate content is lower than 30 mg/kg and shall not exceed 10% of the arithmetic mean of the results if the nitrate content exceeds 30 mg/kg.

10 TEST REPORT

The test report shall show the method used and the results 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 results.
The report shall include all details necessary for complete identification of the sample.

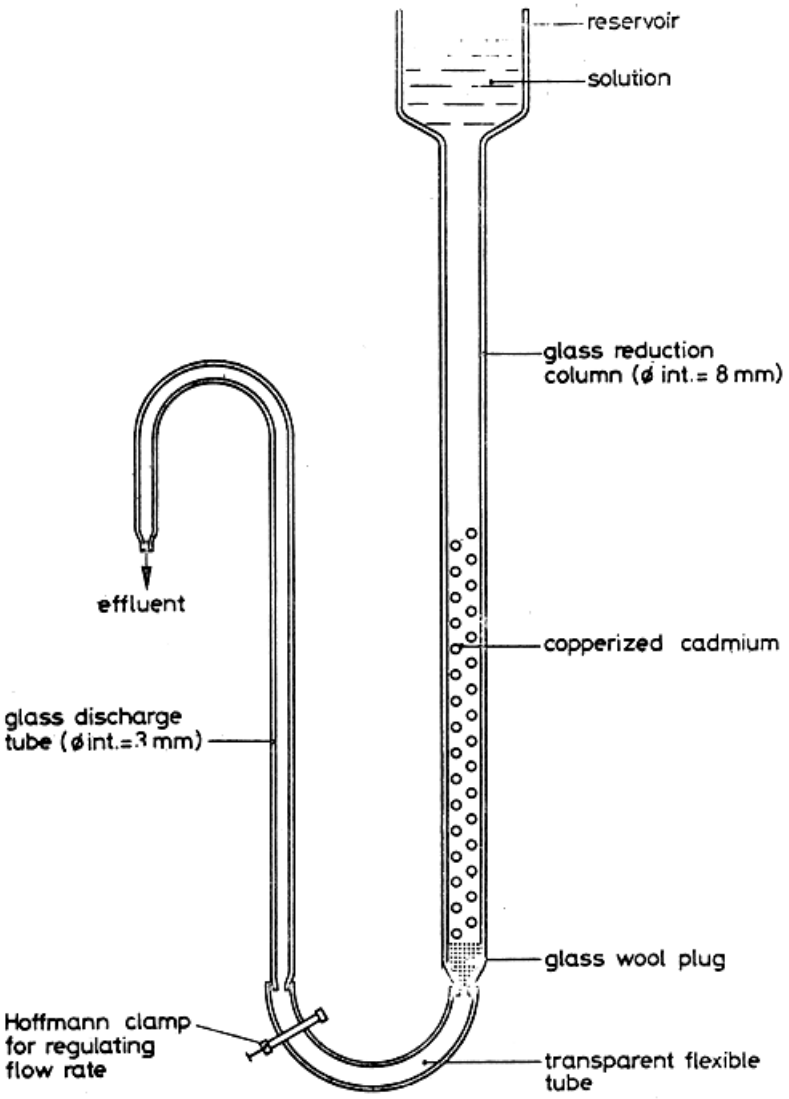

Figure - Apparatus for nitrate reduction

CODEX ALIMENTARIUS COMMISSION

FOOD AND AGRICULTURE ORGANISATION OF THE UNITED NATIONS

WORLD HEALTH ORGANIZATION

Joint Office; Via delle Terme di Caracalla 00100 Rome - Tel. 5797 - Cables FOODAGRI

CX 5/70

CL 1977/7
January 1977

To: - Codex Contact Points

- Participants at the 18th Session of the Joint FAO/WHO Committee of Government Experts on the Code of Principles concerning Milk and Milk Products

- Interested International Organizations

From: Chief, Food Standards Programme,
FAO, 00100 Rome, Italy

Subject: 18th Session of the Joint FAO/WHO Committee of Government Experts on the Code of Principles concerning Milk and Milk Products, Rome 13-18September 1976 Distribution of the Report of Meeting, document CX 5/70 - 18th Session

••• 1. Please find attached the Report of the above meeting.

2. Governments and interested international organizations are requested to send their observations on any matter they would wish to raise, and comment specifically on the points of the Report which are summarized on the first pages v and vi of the Report.

3. Deadline for Comments

Communications should be sent in duplicate before 30 November 1977 addressed to:

Technical Secretary
Joint FAO/WHO Committee of Government Experts on the Code of Principles concerning Milk and Milk Products
Animal Production and Health Division FAO
00100 Rome (Italy)

4. Corrigendum (for English version of Report only)

On page 60, (Appendix VIII) insert after 3.-12:

"3.13 Pesticide residues - A method for the detection of organochlorine pesticides submitted to the Committee at Step (c)".