REPORT OF THE

THIRD MEETING OF GOVERNMENT EXPERTS ON THE USE OF DESIGNATIONS, DEFINITIONS AND STANDARDS FOR MILK AND MILK PRODUCTS

Held in Rome, Italy
22-26 February 1960

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

Meeting Report
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The Committee elected the following officers:

CHAIRMAN: Mr. Th. C.J.M. RIJSSENBEEK (Netherlands)
VICE-CHAIRMAN: Mr. S. ANSELMI (Italy)

Sub-Committee A on Standards:

CHAIRMAN: Mr. T. STOCKER (Switzerland)

Sub-Committee B on Methods of Sampling and Analysis:

CHAIRMAN: Mr. B. SAULNIER (Franco)

SUMMARY OF DISCUSSIONS AND PROPOSALS OF THE COMMITTEE

1. At its second meeting in April 1959, the Committee had requested that Governments indicate to the Director-General whether they intended to apply the Code of Principles, and if so, when and how it would be done, Comments were also requested upon the individual standards contained in its report. Replies were received from the following 30 countries:

Australia	Greece	Peru
Austria	Ireland	Philippines
Belgium	Italy	Poland
Burma	Japan	Portugal
Canada	Morocco	Spain
Ceylon	Netherlands	Sweden
Denmark	New Zealand	Switzerland
Finland	Norway	United Kingdom
France	Pakistan	United States of America
Germany	Panama	Viet-Nam

2. The Committee now noted with great satisfaction the substantial response made to its request. Of the thirty replies, twenty-three indicated that national legislation Was already in conformity With the Code, or would be brought into line with it within a specified period. Five indicated that national legislation would be adapted to the Code at an appropriate later date and two made qualified rejections. The Committee noted in particular that all major countries interested in international trade of milk products had accepted the Code. In this way the future of the Code was assured. The Committee considered each Article of the Code and the Explanatory Note in relation to Government replies. It was decided not to alter the substance of the code or the Explanatory Note in any way, but a few minor changes of presentation were carried out. The Committee made a number of decisions concerning specific points raised in the replies. The text of these decisions is found in Part II of this report. The Committee was of the opinion that since application of the Code was assured by the principal interested countries, those replies from Governments which indicated acceptance subject to application by a substantial number of other countries, were no longer restricted by this reservation.

3. In the light of replies received, the Committee considered what reporting procedures would be most suitable. In general it Was not felt necessary at present to go into details which would apply only when the Code had been in force for some time. The Secretariat was however requested to obtain further details from Governments in Groups II and III of the analysis of replies as well as. from those stating that their national requirements; were. more rigorous, than the Code (see Part II of this report). The. information received would be considered at its next meeting. The Committee strongly recommended countries to use every effort to encourage application, of the Code by those which had not accepted it or from whom no reply had yet been received. It was noted that the Governments of Italy and the United States of America had already indicated in their replies their intention to act on these lines. The Committee also considered the possibility of approaching the FAO Conference for a resolution recommending the widest possible, application of the Code and decided to return to this point at its, next meeting.

4. The Committee fully agreed in principle with the need for a small group of Government Experts to survey and advise on the application of the Code. It felt, however, that since the Committee of Government Experts would itself probably meet

annually over the next two or three years to consider further standards, it would be premature to set up such an advisory group at present. The Secretariat was requested to make proposals on the structure and competence of the advisory group for consideration at the next meeting of the Committee. Between meetings the Secretariat was requested to undertake the collection of such supplementary information from participating countries as might appear necessary for submission to the Committee and to prepare and communicate to Member Nations of FAO annual reports on the application of the Code. The Secretariat was also requested to communicate to participating countries all new acceptances, as well as such details of new measures taken by accepting countries as might have been notified to it.

5. The two standards which the Committee had adopted at its second meeting (Standard No. 1 for Butter and Standard No. 2 for Butterfat) were reviewed in the light of replies received from Governments, which had been requested to give these standards their "earnest and sympathetic consideration". The Committee noted with satisfaction that a large number of Governments had accepted them as minimum standards. It was therefore decided to leave their texts unchanged. The Committee recommended that the text of the standards be republished with the names of accepting countries attached. In order, however, to give full practical value to these acceptances the Committee recommended that Governments be requested to indicate in what way, if at all, their national standards were higher than those proposed under the Code. When this information was available it would be published together with the text of the standards adopted by the Committee.

6. In this way each standard together with the list of acceptances and supplementary information as to more stringent national requirements would provide a text of much greater use to those interested in international trade in these products. The Committee also decided that : a) each standard it adopted should carry a reference to the fact that it be understood in relation to the Code of Principles; b) that it should not affect the adoption of more rigorous requirements under national legislation; c) that any product covered by this standard should be designated in accordance beth with that standard and with national legislation. The Committee further agreed that the acceptance of a standard would not apply in respect of trade with countries not accepting the Code, except that every Government was recommended to apply the standard as far as possible.

7. The Committee recommended that Governments be asked to state their views as to whether questions of grading in addition to minimum product standards should be included in its programme.

8. In the report of its second meetings the Committee had requested that Governments be asked to indicate whether Standard Ho, 2 for Butter-fat was also appropriate as a standard for ghee. The replies received were not conclusive so that the Committee recommended that Governments once again be requested to give their full consideration to this point, so that a decision could be taken at its next meeting.

9. At its second meeting the Committee had provisionally adopted standards for dried milk, evaporated milk and sweetened condensed milk, pending Government comments. The Committee reconsidered these texts in detail in the light of replies received and adopted Standard No. 3 for evaporated milk and Standard No. 4 for sweetened condensed milk, The Committee was unable at present to reach. a final conclusion on the standard for dried milk in view of the unusually complex situation. It made a number of tentative changes concerning the marketing of milk powder with a fat

content between 26% and 24% and decided to refer the revised text back for further and detailed Government consideration. In order to determine the relative importance of the product at 26% fat content and that at 24%, the Committee requested that Governments be invited to give figures of their country's trade in the products covered by this draft standard. The text of the draft as revised by the Committee is contained in Appendix 2.

10. In connection with the draft standard for dried milk, the delegation of the United States of America made the following statements:

> "We consider the dried milk standard a very important one. We "believe dried milk will become more and more important in international trade. We believe further that the greatest potential market may exist in areas, where in many instances, standards do not exist at this time.
>
> Therefore, even as a start, we believe the standards must be as clear as possible. We believe the standards in the proposed form are confusing. le have noted changes in ideas from the last meeting. We believe this is a result of our learning more about the problems involved.
>
> We have suggested that perhaps the Committee needs more information in order to produce the best standards possible. We appreciate, therefore, the proposals set forth in paragraph 9 of this report, requesting such information. The information should include quantities, types, composition, standards applied and quantities of all types traded on the domestic market and in export. Further, we suggest that information be supplied as to export destination, types of packages, labels, etc. We have experienced difficulty in determining the quantities of the different types of dried milk entering international trade. We have found in some instances that exporting and importing countries report these products only as "dried or preserved milks" without further breakdown as to fat content, etc.
>
> With the type of information requested we believe that when the Committee considers the draft standard for dried milk again we will be working with more facts and a clearer understanding of the problems involved. With. such an understanding we may all change or modify our present position."

11. At its second meeting the Committee had given preliminary consideration to the methods of sampling milk and milk products proposed by the International Dairy Federation, and had requested detailed comments from Governments. The number and nature of the replies received however did not allow a complete revision of the text. Numerous changes were made, in particular the long foreword was considered superfluous. The Committee recommended that Governments be requested to give their full attention to providing detailed comments on the Supplement to the methods of sampling, as well as on sampling equipment in use for butter (clause E.1 of the draft text). Should adequate information be received, the Committee hoped to give final consideration to the methods of sampling at its next session. The test of the - methods of. sampling as revised by the Committee is contained in Appendix 3.

12. The Committee also gave preliminary attention to the following standards which had been received from the International Dairy Federation since its last sessions:

> Standards for cheese
>
> Standard method for the determination of acidity in butterfat
>
> Standard method for the determination of the refractive index of butterfat

Standard on the determination of the fat content of milk powder by the gravimetric method of Röse-Gottlieb.

Standard for the determination of the iodine value of butterfat according: to Wijs.

Standard for the determination of the fat content of cheese and processed cheese by the Schmid-Bendzynski-Ratzlaff method (S.B.R.)

In respect of the methods of analysis, the Committee recommended that these methods be submitted to the Governments for detailed comment, including as examples those Government comments which had already been received. In respect of the standard for cheese the Committee made a number of changes in presentation. It also took note of the proposal of a number of delegations that clause 1.4.4. should contain a phrase to the effect that whenever confusion might arise in the mind of the consumer as to the origin of a cheese, its designation should be accompanied by a mention of the producing country on labels, commercial documents, etc. (e.g. Swedish Gouda, Dutch Camembert, Canadian Cheshire, etc.). The texts of these standards in their revised form are contained in Appendix 4.

13. On the question of including provisions concerning hygiene requirements in its product standards, the Committee declared itself in agreement with the view expressed by the-International Dairy Federation (see appendix 5) to the effect that such action at present would be premature.

14 The Committee decided to present its report in two parts.

Part I contains:

a) Summary of discussions and list of participants

b) The text of all standards still under discussion or awaiting final Government replies.

Part II contains:

a) Text of the Code and Explanatory Note

b) Status of acceptances of the Code

c) Text of Standards finally adopted by the Committee (Standard No. 1 for Butter and No. 2 for Butterfat)

d) Status of acceptances of these Standards.

The Committee recommended that Part II of the report also be published separately, so that the complete text of the Code and its associated Standards together with details of their status of acceptances throughout the world would be available in simple combined form to all interested users.

Summary of Action Recommended

15. The Committee therefore requests the Director-General when sublimating the present report to all Member Governments to invite each Governments

a) to provide the Secretariat, as required , with supplementary information needed to complete details of the state of application of the Code in their respective countries (see paragraphs 3 and 4 of this report). An individual request will be sent to each Government affected.

b) to indicate Whether the Committee should include questions of product grading in its programme- (see paragraph 7 of this report).

c) to indicate, for information, where acceptance of Standard No. 1 for Butter and/or Standard No. 2 for Butterfat (set out in Part II of this report) as minimum standards has already been communicated to FAO in accordance with the recommendations of the second meeting, any more stringent national requirements applicable to them and also whether Standard No. 2 is applicable to ghee.

d) to give earnest and sympathetic consideration to the application of Standard No. 3 for evaporated milk and , Standard No. 4 for sweetened condensed milk (set out in Appendix 1) and when in favour of their application as minimum standards, to indicate for information any more stringent national requirements applicable to them.

e) to comment in detail on the draft standard for dried milk (set out in Appendix 2) and to provide figures pf their country's trade in the products covered by this draft standard (see paragraphs 9 and 10 of this report),

f) to comment in detail on the draft "standard methods of. sampling and especially on the Supplement to these methods; and on sampling equipment in use for butter under clause-E.1 of the draft (set out in Appendix 3).

g) to comment in detail on the draft standards submitted by the International Dairy Federation (set out in Appendix 4).

Governments should be invited to send their replies and comments to the Director-General of FAO by the 1st September 1960.

16. The Committee requests the Director-General to convene a fourth meeting of the Government Experts not later than March 1961, so that further attention may be given to the various draft standards in hand as well as to furthering- and strengthening the application of the Code of Principles throughout the world. If justified by the nature of Government comments received, the Committee further requests the Director-General to convene a meeting of Sub-Committee A or B, as appropriate, in the late autumn of 1960.

APPENDIX 1

STANDARDS ADOPTED BY THE COMMITTEE

STANDARD NO.3

EVAPORATED MILK

1. Definition:

Liquid product obtained by the partial removal of water only from milk or skimmed milk.

2. Permitted Additions:

Harmless substances necessary for the manufacturing process, for examples:

Sodium phosphate Sodium citrate Calcium chloride	as stabilizers

3. Designations and Standards :

3.1 Evaporated milk
Evaporated whole milk
Evaporated full cream milk
Unsweetened condensed whole milk
Unsweetened full cream condensed milk

The product shall contain

Not less than 7.5% of fat by weight
Not less than 25.0% of milk solids by weight

3.2 Evaporated skim milk
Unsweetened condensed skimmed milk

The product shall contain not less than 20.0% of milk solids by weight.

STANDARD NO. 4

SWEETENED CONDENSED MILK

1. Definition:

   Product obtained by the partial removal of water only from milk or skimmed milk with the addition of sugars.

2. Permitted Additions:

   Harmless substances necessary for the manufacturing process

3. Designations and Standards:

   3.1 Sweetened condensed milk
   Sweetened condensed whole milk
   Sweetened full cream condensed milk

   The product shall contain;

   Not less than 8.0% of fat by weight
   Not less than 28.0% of milk solids by weight

   3.2 Machine skimmed sweetened condensed milk
   Sweetened, condensed skimmed milk
   Skimmed sweetened condensed milk

   The product shall contain not less than 24.0% of milk solids by weight.

APPENDIX 2

DRAFT STANDARD REFERRED TO GOVERNMENTS FOR FURTHER COMMENT

DRIED MILK

1. Definition:

   Powder obtained by the removal of water only from milk, partly skimmed milk or skimmed milk.

2. Permitted Additions :

   Harmless substances necessary for the manufacturing process.

3. Designations and Standards :

   3.1 Whole milk powder.
   Dried full cream milk
   Full cream milk powder
   Dry whole milk
   Milk powder
   Dried milk

   Shall contain not less than 26% of fat by weight and not more than 5% of water by weight in the product.

   In exceptional cases the product may in accordance with already existing national legislation contain less than 26% but not less than 24% of fat by weight provided:

   (a) The product is packed in units of not less than 25 kg.

   (b) The product is designated exclusively as "milk powder" or "dried milk".

   (c) The product is labelled "contains not less than 24% fat by weight.

   3.2 Partly skimmed milk powder containing not less than **...** % milk fat
   Partly skimmed dried milk containing not less than **...** % milk fat

   The product shall contain between 1.5% and 26% of fat by weight in the product. The fat percentage by weight in the product shall be declared. Shall contain not more than 5% of water by weight in the product.

   3.3 Non fat dry milk
   Dried skimmed milk
   Skimmed milk powder

   Shall contain not more than 1.5% of fat by weight in the product.
   Shall contain not more than 5% of water by weight in the product.

APPENDIX 3

STANDARD METHODS OF SAMPLING MILK AND MILK PRODUCTS PROVISIONALLY ADOPTED BY THE COMMITTEE PENDING GOVERNMENT COMMENTS

Foreword

These instructions are intended to provide basic rules for commercial transactions in international trade. They are not intended to replace official methods of sampling and analysis prescribed. by national Food Legislation for the purpose of internal control.

A. GENERAL INSTRUCTIONS

1. Instructions of an administrative character

1.1 Sampling shall be performed by an authorized neutral or sworn agent, properly trained in the appropriate technique.; The sampling agent shall be free from any infectious disease.

1.2 If possible. representatives of the parties concerned shall be given the opportunity to be present when sampling is performed.

1.3 Samples shall be accompanied by a report, signed by the sampling agent and countersigned by the witnesses if present. This report shall give particulars of the place, date and time of sampling, the name and designation of the sampling. agent and of any witnesses, the precise method of sampling which is being followed if this deviates from the prescribed standard method, the nature and number of the unit s constituting the consignment together with their batch code markings, where available, the number of samples duly identified as to the batches from which they were drawn, and the place to which the samples have been sent. When appropriate the report shall also" include any relevant conditions or circumstances, for example the condition of the packages and their surroundings, temperature and humidity of the atmosphere, method of sterilization of the sampling equipment, whether, a preservative substance has been added to the samples, and any other special information relating to the material being sampled.

1.4 Bach sample shall be sealed and labelled to give the nature of the product, the identification number and any code markings of the batch from which the sample has been taken, the date of sampling, the number of samples taken from the consignment, the size of the consignment, and the name and signature of the sampling agent. In certain cases, for example the analysis of certain cheeses, the weight of the sample or of the unit from which it was taken should also be stated.

1.5 All samples shall be taken at least in duplicate, one sot being held if necessary in could storage and put as soon as possible at the disposal of the second party. It is recommended that when previously agreed between the parties, a third set of samples be taken and retained for independent arbitration if necessary. The samples shall be dispatched immediately after sampling to the testing laboratory.

2. Technical instructions

2.1 Sampling equipment

2.1.1 Specifications: as laid down for each product to be sampled.

2.1.2 Sampling for chemical purposes: the sampling equipment and sample containers shall be dry and clean and shall not impart any foreign odour or flavour.

2.1.3 Sampling for bacteriological purposes or for organoloptic examination: all. sampling equipment-. shall be clean and shall not communicate any foreign flavour or odour to the product and shall be treated by one of the following methods:

a) Exposure to hot air at 160º - 170º C for two hours.

b) Exposure to steam at 120º C (autoclave) for 15 minutes.

c) Exposure to steam at 100º C for one hour. Such equipment must be used the same day.

d) Immersion in water at 100º C for 30 seconds. Such equipment must be used immediately.

e) Immersion in 70% alcohol and flaming to burn off the alcohol immediately before use.

The choice of the treatment will depend upon the nature, shape, and size of the equipment and upon the conditions of sampling. Sampling equipment,, including sampling containers must be sterilized wherever possible by one of t the methods a) or h). Methods. c), d) and e) should be regarded as secondary methods only.

2.2 Samples containers

2.2.1 For liquids

Containers shall be of a quality suitable for sterilization if necessary, and of suitable shape and capacity for the material to be sampled (as defined in each particular case).

Containers shall be securely closed either by means of a rubber stopper or by a screw cap of metal or plastic having a liquid-tight plastic liner which is insoluble, non-absorbent greaseproof, and which will not influence odour, flavour or composition of the milk and the milk products.

When rubber stoppers are used these shall be covered with a non-absorbent, flavourless material (such as a suitable plastic) before pressing into the sample container.

2.2.2 For solids or semi-solids

Containers shall be wide mouth, cylindrical receptacles of glass or stainless metal, suitable for sterilization, if necessary, and of a capacity suited to the size of the sample to be taken (as defined in

each particular case). They shall be securely closed by one of the means defined abeve.

2.2.3 Small retail containers

The containers intact and unopen can be the samples.

2.3 Sampling. Technique

The precise method of sampling, the weight or volume of product, and the number of units to be taken as a sample varies with the nature of the products and the purpose for which sampling is required, and is defined for each particular case.

2.4 Preservation of samples

2.4.1 When required for chemical analysis, a suitable preservative may be added to samples of liquid products. Such preservatives shall not interfere with the subsequent analysis and the nature and quantity of the addition shall be indicated on the label and in any report. Preservatives shall not be added to samples of semi-cold, solid or dried products unless contrary provisions are made for such addition under C,D,E, etc,. hereinafter and concerning various types of dairy | products. Such samples shall be rapidly cooled and i stored in a refrigerator.

2.4.2 When required for ,-bacteriological or organoleptic examination preservatives shall never be added to such samples Instead, they shall be held at a low temperature (0-5 C) except in the case of conserved milk products when the sample comprises undamaged, unopened containers in which the product is sold. Liquid products and butter shall be hold in ice and bacteriological examination of liquid products shall be commenced as soon as possible and in no case later than twenty-four hours after sampling.

2.5 Transport of samples

Samples shall be transported to the laboratory as quickly as possible after sampling. Precautions shall be taken to prevent exposure during transit to direct sunlight and to temperatures below freezing point or to high temperatures which shall not exceed 10ºC, in the case of perishable products. In the case of samples required for bacteriological examination, an insulated transport container capable of maintaining a low temperature (under 5ºC) shall be used, except in the case of conserved milk products samples as undamaged, unopened containers, or in the case of very short journeys.

3. Selection and number of samples

Guidance is given for each particular product in the following Supplement.

B. SAMPLING OF MILK, SEPARATED MILK AND CREAM

1. Sampling equipment

Plungers or agitators are necessary. for mixing liquids in bulk. Plungers or agitators shall be of sufficient area to produce adequate disturbance of the product, and sufficiently light in weight for the operator to be able to move them

rapidly through the liquid. For mixing the contents of large vessels mechanical stirring is advisable.

Collect the sample by means of a dipper of suitable size. When the sample is required for bacteriological examination sterilize the sampling equipment as prescribed under A.2.1.3.

2 Selection and number of samples

Guidance is given for each particular product in the following Supplement.

3. Mixing procedure

3.1 In all cases the liquid shall be thoroughly mixed, for example by pouring from one vessel to another, by plunging or through mechanical stirring.

3.2 In the case of large containers agitation must be continued until the bulk is thoroughly mixed.

3.3 In the case of cream,. perform plunging at least 10 times, the position of the submerged plunger being moved from place to place with special care to avoid whipping and churning.

3.4 Take the sample immediately after mixing.

C. SAMPLING OF CONDENSED MILK AND EVAPORATES MILK

1. Bulk containers (barrels, drums, etc.)

1.1 Sampling equipment

The most generally suitable sampling equipment is a broadbladed metal stirrer fitted with a wide perforated. disc at the bottom, and of sufficient length to reach the bottom of the container.

1.2 Sampling technique

The stirrer s hall be used to mix the contents and to scrape adhering material from the sides and "bottom of the container. 2-3 liters of the well mixed content shall be removed to a smaller receptacle, the stirring repeated, and a sample of at least 200 grams taken.

1.3 Sample jars shall be of large diameter and have airtight lids.

2. Small retail containers

2.1 The sample unit shall be one intact, unopened container, ands whenever possible, bear the manufacture code markings.

2.2 Selection of units

Guidance concerning the selection of units and the minimum number to be taken is given in the following Supplement.

2.3 Number of samples

Guidance is given for each particular product in the following Supplement.

2.4 Treatment of samples

The container shall not be opened before analysis and shall be labelled with the date of sampling and a special mark of identification.

D. SAMPLING OF DRIED MILK AND DRIED MILK PRODUCTS

1. In the case of bulk containers sampling for chemical analysis and organoleptic evaluation shall be performed independently of. sampling for bacteriological examination from the same container.

2. Sampling for chemical analysis and organoleptic examination

   2.1 Sampling equipment

   Perform sampling with a suitable clean, dry borer tube of stainless steel, aluminum, or aluminum alloy.

   2.2 Sampling technique

   The tube shall be passed steadily through the powder at an even rate of penetration. When the tube reaches the bottom of the container it shall be withdrawn and the contents, discharged immediately into the sample container. The powder shall not be touched with the fingers. One or more bores will be taken to make up a sample of 300 - 500 grams.

   2.3 Sample containers

   Samples shall be filled into clean, dry containers, air-tight and, if required for the examination, opaque. The sample container shall be of sufficient size to allow mixing by shaking.

   2.4 In the case of gas packed dried milk the unopened original container shall be submitted as the sample if a gas analysis is required. Several containers (up to four) may be required.

3. Sampling for bacteriological examination

   3.1 Samples for bacteriological analysis shall be taken from the same package as those taken for chemical and organoleptic examination. The sample for bacteriological examination shall be taken first.

   3.2 Sampling equipment

   Take samples with a suitable stainless steel or aluminium spoon, which shall be sterile. Sterilize a supply of spoons in a closed metal container in a hot air oven at 1.60-170 G for two hours. Alternatively immerse the spoon in alcohol and flame to burn off the alcohol immediately before use. Clean and sterilize the spoon before taking each individual sample, or a number of sterile spoons should be available.

   3.3 Sampling technique

   Using a sterile metal implement (for example a broadbladed knife or a, second spoon) remove the surface layer of powder from the sampling area. Next, using a sterile spoon, take a sample of 50 - 200 grams, if possible from a point near the center of the container. Place the sample as quickly as possible: into the sample container, which shall be closed immediately observing aseptic precautions.

   3.4 Sample containers

   Samples shall be filled -into clean, dry, sterile glass containers capable of air-tight closure and preferably of brown glass to exclude light.

4. Selection of units

Guidance is given for each particular product in the following Supplement.

E. SAMPLING OF BUTTER

1. Sampling equipment

Butter tiers shall be made from stainless steel and shall be at least 30 mm. in diameter and of sufficient length to pass diagonally to the base of the container. Spatulas or knives used for removing portions of sample from the tier shall be made from stainless steel. Tiers, spatulas, and knives shall be cleaned and dried before use and if sampling for bacteriological purposes is required, they shall "be sterilized by treatment with alcohol followed "by flaming or by immersion in water at 100 C for at least 30 seconds and cooled to room temperature immediately before use.

2. Sampling technique

Take two cores of butter. One is obtained by inserting a trier diagonally through the block of butter (from an edge of a cask) of the opened end. The second is drawn by inserting the trier from an arbitrary point. of the surface vertically. downwards. to the base of the box or cask. The sample shall comprise portions taken from different points after two cores to give a total weight of not less than 200 grams. Put aside plug about 25mm. long to place in hole from which core was removed.

3. Sample container

Sample containers shall be wide-mouth -jars conforming to A.2.2.2. The jar shall be at least half filled and hermetically sealed. Immediately after closure, jars containing butter shall be wrapped in paper and stored in a dark place. The butter shall not come into contact with paper or any water or fat absorbing surface.

4. Selection of units

The selection of units involves special considerations which may vary with the nature of the consignment and the purpose for which sampling is required. Guidance is given in the following Supplement.

SUPPLEMENT TO

METHODS OF SAMPLING MILK AND) MILK PRODUCTS

SELECTION OF SAMPLES

A. General

The purpose of sampling is to provide a portion of the material in an amount commensurate with a reasonable accuracy in representing the lot and with the number of analyses to be carried out. , The sample size recommended is a minimum and may be increased if necessary.

The suggestions set out there after under B, C, D, E, are offered as a guide to ensure that representative samples are obtained to enable accurate assessment of quality.

B. Milk and Cream

Each. unit selected at random shall be sampled and the samples shall net be mixed. In the case of consignments contained in cans (churns) or bottles the number of random units selected may be as follows:

	Total number of units	Minimum number of units selected
Cans (churns)	1	1
	2 to 4	2
	5 to 9	3
	10 to 20	4
	21 to 100	10
	Over 100	10 plus one for each additional 100 units or part thereof.
Bottles	1 to 100	1
	101 to 1,000	2
	1,001 to 10,000	4
	Over 10,000	4 plus one for each additional 2,500 units or part thereof.

When sampling bottles a sample shall consist of an unopened bottle.

C. Condensed Milk and Evaporated Milk

Cans shall be taken as far as possible from different cases comprising the consignment. Cans are commonly packed in cases containing cans. The number taken shall be related to the size of the consignment and the following minimum numbers , re suggested for guidance. Where the samples suggested below are not coded the number of samples should be . considerably increased.

Number of cases of cartons	Number of cans	Minimum number of samples
-	Less than 48	1
1 to 9	48 to 479	2
10 to 49	480 to 2,352	3
50 to 99	2,400 to 4,752	4
100 to 249	4,800 to 11,952	5
250 to 550	12,000 to 26,400	6
Over 550		One sample per 100 cases or part thereof.

Each sample shall consist of three units, of which one shall be retained by the buyer, one by the seller, and one by independent authority for arbitration. For bacteriological purposes at least 20 samples should be taken.

D. Dried Milk and Dried Milk Products

The number of samples shall be related: to the size of the consignment and the following minimum numbers are suggested for guidance. Where the samples suggested below, re not coded the number of samples should be considerably increased. Size of

Size of consignment	Minimum number of samples
1 package	1
2 to 10 packages	2
11 to 200 "	3
201 to 400 "	4
Over 400 "	One per cent of package.

Each sample shall be taken in triplicate ; one part to be retained ; by the buyer, one by the seller, and one by an independent authority for arbitration. The samples shall be examined individually. For bacteriological purposes it is desirable to sample at least 10 packages unless the whole consignment consisted of less than 10 packages.

E. Butter

Sampling may be required to detect deviation in composition of some of the units rather than to determine the average composition of the whole consignment. For general guidance it is suggested that in the case of large Containers (boxes, barrels) or large numbers of units, one per cent of the units may be samples. In the case of butter packed in small containers (packets) the following minimum numbers are suggested for guidance:

Number of units	Minimum number of samples
Up to 100	2
101 to 1,000	5
1,001 to 10,000	10
Over 10,000	0.1 per cent.

The use of tables for selection of units from a bulk consignment is not applicable in every case and should only be expected to load to reliable results in the case of routine examinations of rather homogeneous consignments.

In some cases the standard sampling methods are of no value, for example, in judging theological or organoleptic properties, because these properties cannot be ascertained from a small sample or may be changed by the act of sampling or during transport of the sample.

In such cases it may be necessary to take a large sample or to test the consignment in situ.

F. Cheese

It is suggested that 0.5 - 2% of the units be sampled. Not less than 2 units should be sampled. Regard should be paid to sampling of individual vats or batches, if these can be identified in the consignment.

APPENDIX 4

STANDARDS GIVEN PRELIMINARY CONSIDERATION BY THE COMMITTEE PENDING GOVERNMENT COMMENTS

STANDARDS FOR CHEESE

1. CHEESE

1.1 Definition.- "Cheese" is the fresh or matured product obtained by draining after coagulation of milk, cream, skimmed or partly skimmed milk, buttermilk or a combination thereof.

1.2 Cheese designations.- The terms used to designate the various cheeses (e.g. Emmental, Gouda, etc.) shall only be employed for those products which conform to the definition of cheese given in para. 1.

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

a) harmless substances which are necessary for the manufacturing process.

b) natural flavouring substances not deriving from milk such as spices, in such quantity that they can be considered only as flavouring substances, provided that the cheese remains an essential constituent and that the presence of the addition is declared in the designation of the product (e.g. cheese with celery, etc.)

1.4 Marking and labelling:

1.4.1 Cheese containing less than 45 percent fat: Where a cheese contains less than 45% fat in the dry matter, the minimum fat percentage actually contained must be marked upon all loaves, original and prepared consumers packs,

1.4.2 Cheese containing 45% fat or mores Where a cheese contains "45% or more fat in the dry matter, it may be marked with the minimum fat v content i.d.m.

Note: Where the designation "full fat cheese" is already in use for cheese with 45% or more fat* in the dry matter, its use may be continued, provided it conforms with the provisions of the FAO Code of Principles.

1.4.3 General requirements: The fat content of cheese shall be expressed as a percentage of the dry matter, The marking of fat content upon loaves, original and prepared consumers packs shall be made in figures clearly visible and proportional in size to the size of the pack,

1.4.4 Additional requirements for experts The cheese or its package shall bear the name of the producing country and an identification of the manufacturer in plain or in code.

2. WHEY CHEESE

2.1. Definition: Whey cheese is the product obtained by concentration of whey, with or without addition of milk fat.

2.2. Export-Standards:

2.2.1 The standard for the content of "whey cheese" is" the percentage fat content in the dry matter.

2.2.2 Full fat whey cheese: The minimum percentage fat. in the dry matter in full fat whey cheese shall be 33%.

2.3. Marking and labelling:

2.3.1 The "whey cheese" or "whey cheese packs" shall bear the designation "whey cheese", the name of the producing country and the minimum fat content.

2.3.2 The marking of fat percentage in the dry matter and the designation "whey cheese" shall be made in figures and letters clearly visible and proportional in size to the size of the loaf or of the pack.

STANDARD METHOD FOR THE DETERMINATION OF ACIDITY IN BUTTERFAT

I. Definition of acidity

The acidity of butterfat Is expressed in "degrees of acidity". The "degree of acidity" of butterfat means the number of milliliters of 1-normal alkali required to neutralize the free fatty acids in 100 g of butter-fat prepared as under (3) below.

II. Analysis

1) Apparatus and equipment

1.1 Analytical balance, sensitivity 0.1 mg.

1.2 Erlenmeyer flasks of 300 ml, capacity

1.3 Calibrated burette with 0.1 ml graduation

2) Reagents

2.1 Neutralized mixture of alcohol and other (equal parts of ethyl alcohol 95% and ethyl other, neutralized to phenolphthalein).

2.2 0,1 normal solution of NaOH or KOH,

2.3 Alcoholic solution of phenolphthalein, 1%

3) Preparation of the sample

To extract the butterfat, melt the butter at 50-60ºC, let it stand some time in the dark, decant and filter through a dry filter. For the determination of the acidity, use the well mixed, molted and clarified butterfat.

4) Mode of operation

4.1 Weigh into the Erlenmeyer flask 5 to 10 g, to the nearest mg. of the butterfat prepared according to (3) above.

4.2 Add 50 ml, or more of -the ether-alcohol mixture and dissolve the butterfat,

4.3 Add 1 ml. of phenolphthalein solution,

4.4 Titrate with 0,1 normal alkali to a pale pink colour.

4.5 Calculate the degree of acidity from the following formulas:

$$\text{Degree of acidity} = \frac{n \cdot 100}{p}$$

p = the weight of butterfat in g,

n = the quantity of alkali used, expressed as ml. l-normal solution.

5) The maximum deviation between parallel determinations should not exceed 0.2 degree of acidity.

STANDARD METHOD FOR THE DETERMINATION OF THE REFRACTIVE INDEX OF BUTTERFAT

I. Definition of the refractive index

The refractive index of butterfat means the quotient of the sine of the angle of incidence and the sine of the angle of refraction of light of defined wave length (D-line of spectrum, sodium light),

II. Analysis

1) Apparatus and utensils

1.1 Universal refractometer with a thermostat pro-viding temperature control of the fat to ± 0. 1ºC.

1.2 Sodium light: day light can also be used if the refractometer has" an achromatic compensating device.

2) Preparation of the sample

To extract the butterfat, molt the "butter at 50-60ºC, if necessary lot it stand for a short time in the dark, decant and filter through a dry filter. For the determination of the refractive index, use the melted and clarified butterfat properly mixed and free from water.

3) Mode of operation

In order to obtain comparable values, ensure that the temperature is constant and that the butterfat is free from water and any possible impurities. Always indicate the refractive index for the D-line of sodium light. Then using light of other wave lengths this should be indicated.

Always refer to refractive index of butterfat to the standard temperature of 40.0ºC.

Carry out the determination with the fat at a temperature of 40 ± 0.10ºC.

3.1 Arrange the refractometer and the heating device and adjust the refractometer according to the directions for use of the apparatus.

3.2 Place the. "butterfat prepared as under (2) between the prisms of the refractometer in such a way that it files entirely the space between the prisms.

3.3 Wait until the temperature is constant and read the scale position of the "boundary between the dark and illuminated fields.

4) maximum difference between parallel determinations should not exceed 0.000-2 unit of. the refractive index.

STANDARD ON THE DETERMINATION OF THE FAT CONTENT OF MILK POWDER BY THE GRAVIMETRIC METHOD OP ROSE-GOTTLIEB

I. Definition of the fat content

The fat content means the total content of fat and fatty substances, expressed in percent by weight, that is obtained when determining the fat content of normal milk powder by the Rose-Gottlieb method.

II. Analysis

1) Apparatus and utensils

1.1 Analytical balance, sensitivity 0,1 mg,

1.2 Desiccators or vacuum desiccators provided with suitable drying agent (silica gel or calcium chloride).

1.3 Draying oven maintaining constant temperature up to 110ºC., or vacuum drying oven.

1.4 Erlenmeyer or flat-bottomed flasks holding 150-250 ml., if possible with smooth or ground glass marks.

1.5 substance to facilitator bailing, free of fat, e.g. ground pumice.

1.6 suitable extraction tubes or flasks, with airtight cork or groundglass stoppers,

2) Reagents

2.1 Ammonia solution 25% (density 0.91 at 15ºC.), clear, colourless.

2.2 Ethyl alcohol, 96 volume% (± 1 vol. %).

2.3 Ethyl ether, boiling point 34 - 35ºc., free of peroxide.

2.4 Petroleum ether, boiling point 400- 60ºC.

Instead of pure alcohol, ethyl alcohol leaving no residue and denatured with methyl alcohol or petroleum spirit may be also used.

The reagent's used shall leave no residue after evaporation.

In order to control the reagents, a blank test corresponding exactly to the mode of operation, yet without milk powder, is to be carried out, The blank value found must be taken into account in the final calculation of the analysis,

3) Preparation of the sample

It must be carefully avoided that moisture is absorbed during the preparations for analysis. Mix the milk powder by transferring the sample in a dry flask of a double volume, with stopper. Mix the contents carefully by shaking and turning upside down repeatedly. Open quickly and close immediately.

4) Mode of operation

4.1 Weigh about 1 g. of whole milk powder, resp. 1.5 g of skimmed milk powder exactly into the extraction apparatus,

4.2 Add 10 ml of water and shako, if necessary, by gently heating in a water bath until the milk powder is completely dispersed

4.3 Add 1.5 ml of ammonia solution by heating in a water bath to 60-70ºC during 15 minutes, and shako occasionally.

4.4 Cool and add 10 ml of ethyl alcohol, close the extraction apparatus with a moistened cork stopper or a ground stopper, and mix the contents,

4.5 Add 25 ml of ethyl ether,. close the extraction apparatus, then mix the contents by shaking vigorously- and turning upside down repeatedly for one minute.

4.6 Add 25 ml of petroleum ether, close the extraction apparatus and mix the contents by shaking and turning upside down repeatedly for one minute,

4.7 Let the extraction apparatus stand (for at least two hours) or centrifuge (for not less than 5 minutes at 500-600 r.p.m.) until such time as the other -petroleum ether layer is perfectly clear and has entirely separated from the aqueous layer.

4.8 Transfer the ether - petroleum ether layer as completely as possible by decanting or by means of a pressure siphon (taking carol, however, that no part of the aqueous layer is carried along) into an Erlenmeyer or flat-bottomed flask containing a substance which facilitates boiling and which has been dried and weighed. Thon rinse the stopper of the extraction apparatus and the Pressure siphon with a few milliliters of ethyl ether.

4.9 Repeat the extraction a second and third time, using each time 25 ml of the ethyl ether and petroleum ether and transferring into the same flask the ether -petroleum ether layer which has become clear after having been poured off or centrifuged again.

4.10 Carefully evaporate the solvent out of the flask.

4.11 After evaporation of the remaining solvents dry the fat either in a vacuum drying even for one hour at 70-75ºC (pressure less than 50 mm Hg) or in a drying even under normal pressure at 102-105ºC, The drying process can he accelerated if the vapors remaining in the flask after evaporation of the solvents arc blown off gently with a small hand blower and if the flasks are dried in a lying position.

4.12 Lot the flask cool and weigh it as soon as it has reached the room temperature.

4.13 Continue the drying process with hourly weightings to constant weight (vacuum drying) or to a slight increase of weight (drying

under normal pressure). In the latter case, take thesis for the calculation.

If it were considered to ho necessary, the fat can be dissolved again with petroleum ether in order to control the results- of the analysis.

STANDARD METHOD FOR THE DETERMINATION OF THE IODINE VALUE OF BUTTER PAT ACCORDING TO WIJS.

1. Apparatus and Glassware

   1.1 Analytical balance, sensitivity 0,1 mg.

   1.2 Erlenmeyer- flask with ground glass stopper, capacity 300-500 ml.

   1.3 Burettes, graduated to. 0.1 ml, inspected and approved.

2. Reagents

   2.1 Wijs Reagent.

   2.2 Carbon-tetrachloride (CCl_4), inert to Wijs solution,

   2.3 Potassium iodide solution, 10%, free from iodine and iodates.

   2.4 Sodium thiosulphate solution 0.1 N.

   2.5 Starch solution

   Preparation of the Wijs reagent and of the starch solution

   Wijs reagent s Dissolve approximately 9 g. of iodine tri-chloride in 1000 ml. of a mixture of 700 ml. concentrated acetic acid (99 - 100%) and 300 ml, of carbon tetrachloride, both free from oxidisable matter.

   Determine the halogen concentration in the following way s Run 5 ml. of the solution from a burette into a flask, add 5 ml. of the 10% potassium iodide solution and 30 ml, of water, and titrate with 0,1 N sodium thiosulphate using a starch solution as indicator. Add the starch solution shortly before the end of titration,

   After the determination of the halogen content of the iodine dichloride solution add 10 g. of iodine powder and swirl until so much of the iodine has dissolved that the halogen content, determined as above, has increased to considerably more than 1.5 times the original value. Filter or decant the clear solution and dilute it with a mixture of acetic acid and carbon tetrachloride, so- that 5 ml. of the solution are equivalent to 10 ml. of the 0.1 N sodium thiosulphate solution. Keep the solution in the dark in a tightly closed stoppered bottle of brown glass.

   Starch solution: Mix 5 g. of soluble starch and 10 mg. of mercuric iodide in 30 ml. water, add this mixture to 1000 ml. of boiling water and leave boiling for 3 minutes.

3. Preparation of the sample

   To obtain a sample of butter fat, melt the butter at 50 to 60ºC, leave standing in the dark for some time, decant and filter through a dry filter. For the determination of the iodine value used the melted, clear, filtered and well mixed butter fat.

4. Mode of operation

   4.1 Weigh accurately O.4 to 0.45 g. of the clear butter fat in a clean dried Erlenmeyer flask.

   4.2 Dissolve the fat in 15 ml. of carbon tetrachloride and add by means of a burette exactly 25 ml. of the Wijs reagent.

4.3 Close the flask with its" stopper, mix carefully and leave it standing for 1 hour in the dark.

4.4 Then, Add 20 ml. Potassium iodide solution and approximately 150 ml. Of distilled water, and mix.

4.5 Titrate with 0.1 N sodium thiosulphate solution (use as indicator 2 ml of starch solution, swirling the liquid constantly, Add the. starch solution shortly before the end of the titration.

4.6 Carry out a blank test, using the same quantities of the reagents.

4.7. Calculate the iodine value by means of the following formula:

$$\text{Iodine value} = 1.269 \ \frac{a-b}{p}$$

where:

a = number of ml of 0.1 N sodium thiosulphate used in the blank test;

b = number of ml of 0.1 N of sodium thiosulphate used in the titration for testing (titrating) the butter fat present;

p = weight of butter fat taken for the analysis.

5. The results of duplicate determination should not differ by more than 0.4.

STANDARD FOR THE DETERMINATION OF THE, FAT. CONTENT OF CHEESE AND PROCESSED CHEESE BY THE SCHMID - BENDZYNSKI - RATZLAFF METHOD (S.B.R.)

I.- Definition of the fat content

The fat content means the total content of fat and fatty substances, expressed in per cent by weight, that is obtained by the Schmid-Bendzynski method.

II.- Analysis

1) Apparatus, utensils and auxiliary agents

1.1 Analytical balance, sensitivity 0.1 mg.

1.2 Desiccator or vacuum desiccator, provided With efficient drying agent (silica gel or calcium chloride).

1.3 Drying oven maintaining constant temperature up to 110ºC, or vacuum drying oven,

1.4 Erlenmeyer or flat-bottomed- flasks holding 150-250 ml, with ground or buffed marks.

1.5 Water-bath with support,

1.6 Substances to facilitate boiling, free of fat, e.g. ground pumice.

1.7 Foils of plastic material, unlacquered, soluble in hydrochloric- acid, 0.03 - 0,05 mm thick, size about 5.0 x 7.5 cm. The foils of plastic material shall not affect the result of the analysis.

1.8 Suitable extraction tubes or flasks with air-tight t cork or ground glass stoppers. .

2) Reagents

2.1. Hydrochloric acid of about 25%(density 1.125/15ºC)
2.2 Ethyl alcohol, 96 vol. % (1 vol.:%)
2.3 Ethyl other, boiling point 34-35ºC, free of peroxide.
2.4 Petroleum ether, boiling point 40-60ºC.

Instead of pure ethyl alcohol, ethyl alcohol denatured with methyl alcohol or petroleum benzene and leaving no residue can also be used.

The reagents used shall leave no residue after evaporation.

In order to control the reagents, a blank test shall be carried out in strict accordance with the mode of operation. The blank value found must be taken into account in the calculation of the result of the analysis.

3) Sampling and preparation of the sample

3.1 Sampling (See "Methods of sampling milk and milk products")

3.2 Preparation of the sample

Prior to analysis, the rind or smear or moldy surface layer of the cheese shall be removed so as to have a sample representative of the cheese such as it is usually consumed. The sample shall then be grinded by means of a grinding-mill (Wolf) or of any other appropriate device, and

thoroughly mixed,. The sample so prepared shall be kept in a steam-tight container until the analysis which shall: be carried out on the same day.

4) Mode of operation

4.1 Weigh about 3 g of the prepared cheese sample exactly either in the extraction apparatus or on a foil of plastic material which is folded and introduced into the, extraction apparatus.

4.2 Add 20 ml, of hydrochloric acid and heat by placing the extraction apparatus into a boiling water-bath, moving gently until the cheese is completely dissolved.

4.3 Let the extraction apparatus stand for 20 minutes in the boiling water-bath with the aid of a support, and thon cool it in running water.

4.4 Add 10 ml of ethyl. alcohol, close the extraction apparatus with a moistened cork stopper or ground glass stopper, and mix the contents carefully.

4.5 Add 25 ml of ethyl ether and close the extraction apparatus; then mix carefully the contents "by + shaking vigorously and turning upside down repeatedly for one minute.

4.6 Add 25 ml of petroleum ether, close the extraction device and mix thoroughly the contents by shaking and turning upside down repeatedly,

4.7 Let the extraction device stand (for not less than 2 hours) or centrifuge it (for not less than 5 minutes at 500-600 r.p.m.) until the other -petroleum ether layer is perfectly clear and has completely separated from the aqueous layer.

4.8 Taking care that no part of the aqueous layer is carried along, transfer the ether - petroleum ether layer as completely as possible by decanting or by means of a pressure siphon into an Erlenmeyer or flat-bottomed flask to which substance facilitating boiling has been added, then dried and weighted rinse the stopper of the extraction device and the pressure siphon with a few milliliters of ethyl ether.

4.9 Repeat the extraction a second and third time, each time using 25 ml of ethyl ether and petroleum ether and transferring into the same flask the ether -petroleum ether layer which bas been clarified after having been centrifuged again.

4.10 Cautiously evaporate the solvents out of the flask.

4.11 After evaporation of the remaining solvents, dry the fat cither for one hour in a vacuum drying oven at 70 - 75ºC (pressure less than 50 mm Hg), or under ordinary pressure in a drying oven at 102 - 105ºC.

The drying process can be accelerated if the vapors remaining in the flask are cautiously blown out by means of a small hand blower after evaporation of the remaining solvents and if the flask is dried in a lying position.

4.12 Lot the flask cool and weigh it as soon as it has reached the room temperature.

4.13 Continue the drying process with hourly weighings to constant weight (vacuum drying) or to a slight increase of weight drying under ordinary pressure), In the latter case, the last value found before the increase of weight shall be used for the calculation of the fat content.

If the extraction of the dissolved cheese is not carried out in an extraction tube but in an extraction flask (e.g, Eichloff-Grimmer siphoned flask), then proceed as follows:

4.14 Weigh about 3 g of the prepared cheese sample to exactly 1 mg into an Erlenmeyer flask holding 100 ml.

4.15 Add 10 ml of hydrochloric acid and heat cautiously over an open flame moving gently until the cheese is completely dissolved.

4.16 Lot the extraction flask stand for 20 minutes in a boiling water-bath and then cool in running water.

4.17 Pour the content's of the Erlenmeyer flask into the extraction flask.

4.18 Rinse the Erlenmeyer flask successively with 10 ml of ethyl alcohol, 25 ml of ethyl ether and 25 ml of petroleum ether, each time pouring the solvent into the extraction flask. Proceed after each addition as stated under 4.4 to 4.6.

The further treatment of the sample is performed as indicated above for the extraction tube. The ether - petroleum ether layer containing the fat is siphoned off by means of a pressure siphon.

If it were considered to be necessary, the fat can be dissolved again with petroleum ether in order to control the results 01 the analysis.

5) Accuracy of the method

Fat % ± 0.1 %,

Code of Principles concerning Milk and Milk Products

Fourth Meeting of Government Experts

Communication by the Secretariat

CORRECTION

On page 45 of the English text of Part 1 of the Report of the Third Meeting of Government Experts on the Use of Designations, Definitions and Standards for Milk and Milk Products, the mention "20 ml" in the first line of paragraph 4.2 should read "10 ml".

Earlier reports of meetings on the Use of Designations Definitions and Standards for Milk and Milk Products have been issued as follows:

Report of the Meeting of Government Experts on the Use of Designations Definitions and Standards for Milk and Milk Products, Rome, Italy 8-12 September 1958. In English; French and Spanish Meeting Report No. 1958/15).

Report of the Second Meeting of Government Experts on the Use of Designations, Definitions and Standards for Milk end Milk Products, Rome, Italy, 13-17 April 1959. In English, French and Spanish Meeting Report No. 1959 AN-2)