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ALINORM 69/10
(Cx 5/1)
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JOINT FAO/WHO FOOD STANDARDS PROGRAM

CODEX ALIMENTARIUS COMMISSION
Sixth Session

REPORT OF THE SIXTH SESSION OF THE CODEX COMMITTEE ON COCOA PRODUCTS AND CHOCOLATE

Montreux, 2-5 JULY 1968

N.B Owing to shortage of time, paragraphs 31 to 46 of this Report could not be put before the Committee for adoption. In accordance with the Committee's instructions, those paragraphs were drafted by the FAO Secretariat after the session and, consequently, have not been adopted by the Committee. Attention is also drawn to the fact that while the Committee agreed to the inclusion in the Report of the substance of the side-lined portion of paragraph 24 , this portion of the paragraph was not available in writing to the Committee at the adoption stage, and has been drafted by the FAO Secretariat on the basis of a text supplied in German by the Austrian delegation.

ALINORM 69/10
(Cx 5/1)

REPORT-OF THE SIXTH SESSION OF THE CODEX COMMITTEE ON COCOA PRODUCTS AND CHOCOLATE

1. The Sixth Session of the Codex Committee on Cocoa Products and Chocolate under the chairmanship of the Government of Switzerland, was held in Montreux, 2-5 July 1968 Professor Dr. Högl was Chairman for the session. The Secretariat consisted of representatives of FAO and the office of Professor Högl. Representatives from 19 countries were present: Argentina, Austria, Brazil, Cameroun, Canada, France, F.R. of Germany, Ghana, Ireland, Italy, Ivory Coast, Netherlands, New Zealand, Nigeria, Spain, Sweden, Switzerland, United Kingdom and U.S.A. Observers were present from the following international organizations: COPAL, CAOBISCO and the Fédération Internationale des glucosiers. (See Appendix I for list of participants).

Adoption of Provisional Agenda

2. The Committee adopted the Provisional Agenda with a slight re-arrangement in order of items to he discussed.

Addition of edible fats other than cocoa butter to chocolate

3. The Committee considered a proposal submitted by the delegation of the United Kingdom concerning the addition of edible fats other than cocoa butter to chocolate. The main technological advantages put forward for the use of these other fats were that they could prevent or retard the development of bloom in chocolate, they could increase the hardness of the product and therefore its acceptability to the consumer particularly in warm climates: other fats could enable the texture of the chocolate to be softened.

4. The delegation of the United Kingdom emphasized that the proposal to use edible fats other than cocoa butter in chocolate would be subject to an overall limitation of 5% of the total weight of the final product. The delegation of the United Kingdom further emphasized that the principle underlining the use of these fats other than cocoa butter was not substitution but addition. These fats would be used in addition to the minimum content of cocoa butter prescribed in the various standards. The delegations of Sweden and Ireland indicated support for the proposals contained in the paper submitted by the delegation of the United Kingdom in that their countries would favour the use of edible fats other than cocoa butter to be permitted generally with a maximum limitation of 5%.

5. During the discussion of this subject, delegations representing countries producing cocoa beans emphasized that for economic reasons they would be opposed to the use of other fats than cocoa butter in plain chocolate. These delegations were further of the opinion that there was no real technological justification for the use of these fats as in their experience no serious consumer resistance seemed to exist to chocolate with bloom or a need to use foreign fats for the hardening of chocolate in their countries which all had very warm climates.

6. Many of the delegations representing countries with a significant production of chocolate in Europe stated that in their opinion it was not necessary to permit the use of edible fats other than cocoa butter in all products. There might be instances where the use of these fats could be contemplated, e.g. in the manufacture of coatings and couvertures or products intended for export to tropical countries. It would however be for

the Committee to decide whether these latter products should be the subject of standards.

7. Other delegations, while not objecting to the inclusion of milk fat in chocolate. considered that other edible fats should not be permitted.

8. A number of countries were of the opinion that should edible fats other than cocoa butter and milk fat be permitted in chocolate, then the product could no longer be designated as chocolate and in addition would have to bear a special declaration of the presence of these other fats. It was also pointed out that satisfactory methods would need to be established for the analytical control of such products.

9. A number of countries pointed out that they permitted the use of dairy butter as an anti-bloom agent in chocolate other than milk chocolate. This would not present any serious analytical problems as it was relatively simple to determine the presence of milk fat as distinct from cocoa butter in chocolate

10. After a lengthy and detailed examination of the United Kingdom paper and of the written Government comments submitted for the session, the Committee decided by 16 to 3 with no abstentions not to accept the United Kingdom proposal. The Committee agreed to consider the need for the use of these fats in special instances as and when it considered individual standards. The Committee came to no decision as to whether the use of milk fat should be permitted in chocolate other than milk chocolate.

Re-Work of Cocoa Products and Chocolate

11. The Committee considered the paper presented by the delegation of the United Kingdom on re-work, which consistend wholly of the re-usable material arising from the manufacture of chocolate and chocolate products. It was pointed out that this material would include some or all of the normal ingredients of the chocolate itself and the chocolate products, as well as mis-shapes and other perfectly wholesome materials which became detached from the product during the course of manufacture (e g. trimming operations, etc.). It was further pointed out that re-work was a very important and widely used ancillary material in chocolate and chocolate products.

12. The Committee agreed that the use of re-work was a widely accepted practice and that it would not be necessary to stipulate a figure limiting the amount of re-work which could be used since under good manufacturing practice the amounts involved would be minimal. The Committee did not think it necessary to make any provision in the standard in respect of re-work since, whether re-work was used or not, the end product specifications laid down in the standard would have to be met. It was also agreed that, in principle, rework would be used in the same line of products from which it was taken and that the use of re-work should not be subject to a labelling declaration.

Permissible Treatments

Alkalizing Agents

13. The Committee noted that while the Codex Committee on Food Additives had endorsed the use of ammonium, magnesium and potassium salts as alkalizing agents in the standards no provision had been made for the use of sodium salts or for bi-carbonates. The Committee agreed to insert such a provision and to propose a limit equivalent to 5% anhydrous potassium carbonate (K_2CO_3) calculated on the fat-free dry matter. The delegation of the U.S.A. requested that the limit should be raised to 6.67% The Committee decided to request the Codex Committee on Food Additives to endorse the use of sodium carbonate, sodium hydroxide and the bi-carbonates of ammonium,

magnesium, potassium and sodium with a limit equivalent to 5% anhydrous potassium carbonate (K_2CO_3) calculated on the fat-free dry matter, as permitted alkalizing agents for cocoa beans, cocoa nib, cocoa mass, cocoa press cake, cocoa powder, low-fat cocoa powder, sweetened cocoa powder, and sweetened low-fat-cocoa powder.

Neutralizing Agents

14. The Committee noted that the use of citric and tartaric acids as neutralizing agents Up to maximum level of 0.5% in the final product had been endorsed by the Codex Committee on Food Additives Three delegations requested the Committee to consider incorporating a provision in the standard to permit the use of phosphoric acid as a neutralizing agent up to a maximum level of 0.5% expressed as P_2O_5 in the final product. These delegations stated that there were technological advantages in favour of the use of phosphoric acid as against citric and tartaric acids. The technological advantages were, in the main, that, weight for weight, phosphoric acid was a more efficient neutralizing agent involving the use of less water during processing and was particularly suitable for low moisture products such as cocoa powder. A number of delegations stated that at the present time their national regulations did not permit the use of phosphoric acid as a neutralizing agent. The Committee was further informed that the problem of the phosphorous to calcium ratio in the diet had been referred by -the Codex Committee on Food Additives to the Joint FAO/WHO Expert Committee on Food Additives for an evaluation. The Committee agreed by 8 to 6 countries to make a tentative provision in the standards to permit the use of phosphoric acid as a neutralizing agent. This tentative provision was to be place in *[*square brackets*]* and suitably footnoted with a cross-reference to this paragraph of the Report. The Committee agreed that government comments should be further sought on the technological justification for the use of phosphoric acid. Meanwhile, the opinion of the Codex Committee on Food Additives would be sought as to the acceptability of the use of phosphoric acid from a health point of view.

Permissible Ingredients

Sugars

15. The Committee considered whether a maximum limit should be prescribed In the standards for chocolate and cocoa products for the replacement of sugar (sucrose) by other sugars. After a full discussion it was decided that the standards should be amended to refer to sugars, i.e. all carbohydrate sweetening matters as defined by the Codex Committee on Sugars. For the purposes of these standards, the Committee agreed that the term "sugars" should be understood to include sucrose, dextrose (anhydrous and monohydrate), dried glucose syrup, lactose and any other suitable carbohydrate sweeteners.

The Committee further considered whether any specific prohibition should be made in the standard for the declaration of sugars other than sucrose when less than a certain percentage of these Sugars was presents The Committee concluded that it was not possible to consider this question in isolation from the general, issue of whether chocolate and cocoa products covered by the standards should be required to carry a full declaration of ingredients as laid down in the Draft Provisional General Standard for the Labelling of Prepackaged Foods (currently at Step 6). The Committee agreed to examine this overall issue after completion of its consideration of the other provisions contained in the standards.

Spices and Flavours

16. The Committee was informed that the Codex Alimentarius Commission at its Fifth Session had considered the Committee's request for guidance as to whether flavours which would imitate chocolate or milk fat flavour should be permitted in the standards. The Commission decided it could not give any general ruling on this question but recommended that the problem of imitative flavours should be dealt with in individual standards by Codex Commodity Committees. The Commission would then be prepared to consider any specific issues which were referred to it by these Committees The Committee decided that the standards should contain a specific provision which would exclude the use of any flavours which would imitate the chocolate or milk fat flavour. The Committee agreed to insert the following provision in the standards

"Permissible ingredients and additives

Spices and flavours (except for those which would imitate natural chocolate or milk fat)	No limit	Chocolate and cocoa products	
Vanillin Ethyl vanillin	In small amounts for flavour adjustment	Chocolate and cocoa products	Endorsed

Permissible Additives

Emulsifiers

17. The Committee was informed that the Codex Committee on Food Additives [had endorsed the use of lecithin in chocolate with a maximum level of 0.5% of the acetone insoluble component of lecithin and in cocoa powder and products made therefrom a maximum level of 1% of the acetone insoluble component of lecithin. The delegation of the Netherlands expressed the view that lecithin should be allowed up to 5% in cocoa powder. The use of the mono- and di-glycerides of edible fatty acids had been endorsed for use in chocolate products without limit. The use of emulsifier YN (mainly ammonium salts of phosphatidio acids) had been referred to the Joint FAO/WHO Expert Committee on Food Additives (for toxicological evaluation and the preparation of a specification of purity and identity. In the light of this information and a detailed discussion of the technological need for the use of the above mentioned emulsifiers, the Committee concluded that the standard, in addition to lecithin and the mono- and di-glycerides of edible fatty acids, should tentatively make provision in square brackets for the use of emulsifier YN with a maximum level of 0.7% in the final product.

18. The Committee considered a number of proposals which had been submitted in written government comments for the use of other emulsifiers in the standards. It was decided to refer these other emulsifiers to the Codex Committee on food Additives for advice concerning their safety and possible endorsement for use in chocolate and cocoa products. The Committee agreed to propose a tentative maximum limit of 1.5% of total emulsifiers by weight in the final product as a guide for the Codex Committee on Food Additives when calculating the intake of these emulsifiers in the diet. The Committee further emphasized that the proposed limit of 1.5% for these emulsifiers would also cover the use of the emulsifiers which the Committee had already agreed to include in the standards or which had already been endorsed by the. Codex Committee on Food Additives. The Committee further agreed that the comments and suggestions of governments as set out in Table 2 of document CODEX/CHOC/68/IV should be submitted to the Codex Committee on Food Additives. A number of delegations stated

that they were not in a position to accept the proposal to consider the use of other emulsifiers in chocolate and cocoa products and further stated that in their opinion any overall limit should not exceed 0.5% by weight in the final product, except in the case of cocoa powder. The delegation of the United Kingdom agreed to provide a paper setting out the toxicological advantages of using emulsifiers other than those already agreed to by the Committee, for inclusion in the standard.

Hygiene

19. The Committee was informed that the Codex Committee on Food Hygiene had in general agreed that there were no special problems involved in the hygienic requirements for chocolate and cocoa products which would not be covered by the requirements" of the Code of Practice entitled the "General Principles of Food Hygiene". It was noted that the "General Principles of Food Hygiene" had been adopted by the Codex Alimentarius Commission at its Fifth Session and would shortly be sent to Member Governments as a guide to good hygienic practices in food production. The delegation of Canada informed the Committee that there had been recorded instances of salmonella contamination in cocoa products. The Committee reaffirmed the position taken at its Fifth Session that cocoa products and chocolate should not contain harmful substances or micro-organisms which would endanger the health of the consumer and concluded that, if manufacturers were to follow the General Principles of Food Hygiene, then there would be no need at this time to contemplate any specific microbiological standards for the end product.

Contaminants;

Heavy metals

20. The Committee was informed that the Codex Committee on Food Additives had endorsed the proposed maximum levels of heavy metals in cocoa butter. Heavy metals limits still required to be laid down for cocoa products and chocolate generally. After a full discussion of the subject the Committee concluded that it would not be necessary to place any, limits for copper or iron in cocoa products and chocolate other than those which had been endorsed in the case of cocoa butter. Concerning arsenic and lead it was agreed to propose to the Codex Committee on Food Additives that an overall limit of 1 mg/kg for arsenic should apply to cocoa products and chocolate other than cocoa butter. The Committee further agreed that an Overall limit of 2 mg/kg by weight in the final product should be laid down for lead for all cocoa products and chocolate except in the case of cocoa powder where the maximum limit should be 5 mg/kg on the fat-free dry matter

Pesticide Residues

21. The Committee took note of the information which, had been collated by the Office international du cacao et chocolat on levels of pesticide residues found in cocoa beans. The Committee was informed that the Joint Meeting of the WHO Expert Committee on Pesticide Residues and the FAO Working Party on. Pesticide Residues had already considered a number of the pesticides mentioned in the OICC report. It would, however, be necessary for the information supplied by the OICC to be considered by the Codex Committee on Pesticide Residues in order to establish tolerances. The Committee agreed that the report of OICC should be referred to the Codex Committee on Pesticide Residues with a request that tolerances be established for. these pesticides in respect of cocoa beans and. (derived products. The Committee expressed its

appreciation for the two reports which had been prepared by the OICC on heavy metals and pesticide residues.

Cocoa Butter

22. The Committee examined the comments submitted by governments on the following three propositions:

(a) whether press cocoa butter only should be permitted as an ingredient of chocolate, or
(b) whether press cocoa butter, and solvent extracted cocoa butter (with or without provision, as to refining) should be permitted as ingredients of chocolate, or
(c) whether press cocoa butter, solvent extracted cocoa butter (with or without provision as to refining) and whole bean cocoa butter should be permitted as ingredients of chocolate.

The Committee further examined a proposal submitted by the Swiss delegation Which dealt with descriptions for press cocoa butter, extract cocoa butter and whole (unshelled) bean cocoa butter. After a very full discussion of the Swiss proposal and government comments on the above propositions, the Committee agreed that press cocoa butter should be described as follows:

> "Press cocoa butter is the fat which is obtained by pressure from cocoa nib or cocoa mass (cocoa liquor). It can be separated from suspended matter by filtering and centrifuging. If the fat has been deodorized by steam and/or vacuum then the designation of the fat must include the term deodorized

23. The Committee was unable to reach agreement on precise descriptions of categories of cocoa butter other than press cocoa butter for incorporation in the standard at this stage. The Committee therefore decided that the following general principles could apply to the production of cocoa butter intended for use in the manufacture of chocolate. These were as follows:

(a) Cocoa butter should be obtained from nibs or whole beans by any one or a combination of the following methods, as appropriate:

  (i) by pressing
  (ii) by expelling
  (iii) by solvent extraction

(b) Cocoa butter may be deodorized or refined. If the cocoa butter has been deodorized or refined, then the designation of the cocoa butter . must include the terms "deodorized" or refined" as appropriate.

24. In an endeavour to provide a solution to the difficulties the Committee had encountered in deciding which types of cocoa butter or fat should be permitted for use in the manufacture of chocolate and chocolate products the delegations of Austria and the Federal Republic of Germany proposed that fat which had been obtained from cocoa beans for use in the manufacture of cocoa products should not contain more than the proper percentage of shell and/or germ fat occurring naturally in cocoa beans Analytical criteria would need to be specified and also a limit would need to be placed on the maximum amount of unsaponifiable matter. The Committee noted these views and was in agreement that for the preparation of cocoa fat for use in the manufacture of cocoa products, cocoa beans or cocoa nibs could be used. The delegations of Austria and the Federal Republic of Germany further proposed that the different types of fat should be clearly distinguished and that in designating these fats, account should be taken of the

raw material from which they were obtained, the method of processing and any subsequent treatment such as deodorization or refining. Some delegations were of the opinion that it was not necessary to establish descriptions for the various categories of cocoa butter. These delegations considered that, in accordance with the General Principles of the Codex Alimentarius, it would only be necessary to establish a minimum standard for the cocoa fat which would be permitted for use in the final product. Other delegations took the view that there Were important qualitative differences among the various categories of cocoa butter and that these differences "merited the establishment of individual Standards for the different categories of cocoa butter. The Committee Considered to what extent requirements needed to be specified for raw material or semi-processed products used in the manufacture of chocolate having regard to the fact that they would be subject to further processing. The Committee was divided on this issue and decided to seek the guidance of the Codex Alimentarius Commission. Those delegations which favoured the establishment of individual standards for the different categories of cocoa butter were requested to submit relevant information including analytical criteria in Support of their proposals to the Secretariat of the Commission. All delegations were requested to examine the criteria laid down in the standard for a minimum quality of cocoa butter to be permitted in chocolate and to submit their comments on these criteria to the Secretariat of the Commission. The . issue, together with the supporting criteria submitted by delegations, would be placed before the Codex Alimentarius Commission at its Sixth Session with a request for guidance to be given on the extent to which analytical requirements would need to be specified for cocoa butter used in chocolate. The Committee would then examine the whole question at its next session in the light of any guidance given by the Commission.

Standards reconsidered at Step 4

Cocoa (cacao) Beans

25. A number of delegations drew to the attention of the Committee the different maximum moisture content requirements laid down in the standard and in the FAO Draft Model Ordinance and Code of Practice for Cocoa Beans. It was noted that the Draft Model Ordinance indicated that the 8% maximum moisture content should be determined at the point of export while the 7% maximum moisture content prescribed in the standard was to be determined at the point of import. The Committee concluded that it would suffice for the purpose of Codex standards that cocoa beans should be of merchantable quality as defined in the FAO Draft Model Ordinance and Code of Practice for Cocoa Beans. It was therefore agreed by the Committee to incorporate the following description in the text of the (standard:

> "Cocoa beans are the seeds of the cocoa tree (Theobroma Cacao L) which have been fermented, dried and are of merchantable quality as defined in the FAO Draft Model Ordinance and Code of Practice for Cocoa Beans."

Cocoa (cacao) Nib

26. The Committee decided to delete the words "roasted or unroasted" from (the description as contained in the standard.

Cocoa (cacao) Mass, Cocoa Press Cake, Cocoa Powder or Cocoa

27. The Committee agreed that it was not necessary to make any alterations in the descriptions of these products.

Low-fat Cocoa Powder or Low-fat Cocoa

28. In view of the fact that the standard permitted up to 20% of cocoa butter in this product, the Committee agreed that the term "low-fat" as applied to this product might be misleading in the English version. The Committee was however unable to find a more appropriate term at this stage.

Sweetened Cocoa Powder, Sweetened Low-fat Cocoa Powder, Cocoa Powder Mixtures

29. The Committee examined all the standards for the above products and concluded that it would not be necessary to elaborate a standard for cocoa powder mixtures at this time. Many of the products which would come within the scope of this standard were sold either under a trade name or under the designation "drinking chocolate" in English speaking countries. In the main the Cocoa Powder Mixtures were composite products of cocoa flavour or chocolate. As a consequence of its decision not to proceed with standards for cocoa powder mixtures the Committee considered that it would be necessary to amend the wording of the standards for sweetened cocoa powder and sweetened low-fat cocoa powder to provide exemptions for the continued use of designations currently permitted by national legislations. The Committee agreed that an amendment similar to the provision contained in the standard for sweetened cocoa powder would suffice.

30. The Committee further agreed that salt should be included as a permitted ingredient in the standards for cocoa press cake, cocoa powder or cocoa, low-fat cocoa powder or low-fat cocoa, sweetened cocoa powder, sweetened low-fat cocoa powder.

Chocolate

31. The Committee noted that while unsweetened chocolate was not generally known in Continental European countries, such a product was on the market in a number of English speaking countries The Committee agreed to examine. the question of establishing a standard for unsweetened chocolate at its next session.

32. The Committee considered a proposal of the United Kingdom delegation that the standards for couverture chocolate and milk couverture chocolate should be merged with the standards for chocolate and milk chocolate respectively The United Kingdom delegation indicated that what was necessary, from the point of view, of protecting the consumer, was that chocolate in couverture chocolate and milk couverture chocolate should conform compositionally to the standards for chocolate and milk chocolate respectively, and that they should be suitable for covering purposes. The Committee agreed that couverture chocolate should conform with the specifications for chocolate as prescribed in the standard, with the addition that it be described as chocolate which is suitable for covering purposes. The Committee also agreed that the compositional requirements for chocolate should be that the cocoa butter content should be not less than 18%, and the total cocoa solids content not less than 35% both calculated on the dry matter, and that the requirement in respect of fat-free cocoa solids should be deleted.

Milk- Chocolate

33. While the Committee decided to leave the text of the standard for milk chocolate unchanged, various views were put forward by different delegations as regards the figures for fat-free cocoa solids and milk fat. The delegation of the U.S.A. stated that it would wish to see a figure of 4% in respect of fat-free cocoa solids. The delegation of

New Zealand suggested a figure of 3% for fat-free cocoa solids and 4.5% for milk fat. The delegation of the United Kingdom considered the figures for cocoa solids to be too high and that no maximum limit should be laid down for sugar in the standard.

White Chocolate

34. The Committee examined the question of whether to provide for white Chocolate. Several delegations stated that chocolate containing no fat-free cocoa solids or a minimal amount of fat-free cocoa solids should be designated "white chocolate". The view was also put forward that if the standard as recast in the Codex Format were to provide for white chocolate, the definition of chocolate would have to include a provision on fat-free cocoa solids. It was agreed that the matter appeared to be essentially a labelling one, and that Governments should be asked to indicate their views on whether white chocolate should be provided for in the standard and to put forward specific proposals as to composition for white chocolate

Skimmed Milk Chocolate

35. The Committee agreed to leave the text unchanged.

Cream Chocolate

36. While the Committee agreed to leave the text unchanged, the delegation of Canada expressed the view that the cocoa solids figure of 25% should be reduced to 20%

Milk Couverture Chocolate

37. The Committee agreed to deal with milk couverture Chocolate on the same lines as it had dealt with couverture chocolate. It was agreed therefore) that milk couverture chocolate should conform to the specifications of milk chocolate and that it should be described as milk chocolate which is suitable for covering purposes.

Chocolate Vermicelli and Chocolate Flakes
Milk Chocolate Vermicelli and Milk Chocolate Flakes

38. While the Committee agreed to retain these standards unchanged, a number of delegations expressed the view that standards for these products were not necessary. These delegations stated that international trade in these commodities was not substantial. The delegation of the Netherlands drew to the attention of the Committee that there was a substantial production of these products in their country and also a significant export trade. It was agreed that Governments should be asked to state whether they considered it desirable to retain the standard for these products.

Composite Chocolate Products
Flavoured Chocolate Products

39. Some delegations expressed doubts as to whether a standard for composite chocolate products was desireble in view of the very wide range of such products on the market. A majority of the Committee agreed to retain the (standard for composite chocolate products. The Committee agreed to combine this standard with the standard for Flavoured Chocolate Products.

Filled Blocks or Bars

40. The Committee discussed the question of whether there should be a standard for filled blocks or bars. A number of delegations took the view that it would be extremely difficult to develop a meaningful standard for filled blocks or bars, in view of the wide

range of such products. Other delegations were of the opinion that if chocolate formed part of the name of the product,. the chocolate component should conform to the compositional requirements for chocolate. Other delegations considered that, additionally, these products should contain a minimum amount of chocolate. It was agreed that government Comments should be invited on this subject and that the Committee would re-re-examine it at its next session in the light of the comments received. A number of delegations had brought samples of the products to the meeting, but, owing to lack of time, there was no opportunity to examine them. Delegations were, therefore, requested to bring samples to the next session.

Addition of Edible Fats (other than cocoa butter) to chocolate

41. In examining the standards, the Committee was unable owing to lack of time to consider the need for the use of edible fats other than cocoa butter, as had been agreed to earlier in the session (see para. 10). It was agreed that Governments should be asked for their views on this matter for consideration by the Committee at its next session.

Blends

42. Owing to lack of time, the Committee was unable to discuss the United Kingdom paper on the above subject. This subject is to be discussed by the Committee at its next session.

Labelling

43. The Committee reviewed the labelling provisions as set out in the standard for cocoa products and chocolate, which had been cast in the Codex Format by the Secretariat (document Cx 5/1.3, March 1968). The Committee took note of the Draft Provisional General Standard for tie Labelling of Prepackaged Foods, and agreed that the principal issue appeared to be whether, for standardized products, it would be necessary to declare all the ingredients in descending order of proportion on the label. The Committee noted that in some cases it might be desirable to declare *all* ingredients in order to avoid the difficulty of giving the product an inordinately long name. It was agreed that Government comments should be sought on this matter. The Committee also agreed to refer the specific labelling provisions set out in Section VI (b) of the standard to the Codex Committee on Food Labelling for endorsement.

Methods of Analysis

44. The Committee agreed that the methods of analysis which should be given priority of consideration by the Codex Committee on Methods of Analysis and Sampling were those connected directly with criteria appearing in the standards. The meeting was informed that consultation on these methods of analysis of cocoa and chocolate products had taken place between the two chief organizations concerned. OICC and AOAC. The Committee agreed to send forward to the Codex Committee on Methods of Analysis and Sampling for endorsement the ISO method for Moisture Content of Cocoa Beans) AOAC method 12,002 for Moisture. OICC method for Total Fat (HCl digestion) and tie AOAC methods 12.022 to 12.023 for Total Fat. which were to be regarded as alternative referee methods and to be considered, until proved otherwise, as giving equivalent results within the limits of accuracy implied in the criteria in the standard, since (in the case of the OICC method and AOAC 12.023) the methods were based on the same principle. Similarly, the OICC method for Ash (water-soluble, water-insoluble and acid insoluble) and the AOAC methods 12.003, 12.004 and 12.007 were recommended for endorsement, being regarded as acceptable alternatives under the same conditions and for the same reasons as given immediately above.

As methods of indicating milk fat content, the OICC Semi-micro (butyric, total and residual) indices of fats and the AOAC Mole percent butyric acid, Methods 26.034 - 26.039 were recommended for endorsement as alternatives. For dry, fat-free cacao mass, AOAC Method 12.021 was recommended for endorsement on a temporary basis pending development of a method which would avoid the difficulties encountered in the analysis of products containing dairy ingredients using this method. The method needed to estimate shell in the final product which has been suggested was that using the spiral vessel count (JAOAC 51 457-460 (1968)). This method could be temporarily endorsed pending improvement to cover the degree of fineness of subdivision of the product and also to permit testing and comparison with other methods by the OICC.

Action on the Standards

45. The Committee agreed that the standard for Cocoa Products and Chocolate, as recast by the Secretariat in the Codex Format (document CX 5/1.3) should be amended to take account of the decisions reached at the current session. It was agreed that the amended standard, which is contained in Appendix II to this Report should be retained at Step 4 and that a further round of Government comments should be sought on it. The attention of the Governments was specifically drawn to the need to consider the compositional criteria and other requirements for cocoa butter.

Other Business

46. A number of delegations considered that having regard to the heavy workload and importance of the subjects under discussion it was essential that the next session should be of at least 5 days duration. The Committee requested the FAO Secretariat to discuss this matter with the host authorities, and other matters including the provision of facilities to enable the Report to be adopted in French as well as in English.

CODEX COMMITTEE ON COCOA PRODUCTS AND CHOCOLATE
COMITE DU CODEX SUR LES PRODUITS CACAOTES ET LE CHOCOLAT
COMITE DEL CODEX SOBRE PRODUCTOS DEL CACAO Y CHOCOLATE

Sixth Session
Sixième session
Sexto período de seisiones

Montreux, 2-5. VII. 1968

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LISTA DE PARTICIPANTES

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PROPOSED DRAFT PROVISIONAL STANDARD FOR COCOA PRODUCTS AND CHOCOLATE IN CODEX FORMAT

(Hold at Step 4)

I. DESCRIPTIONS

(a) Cocoa (Cacao) Beans are the seeds of the cocoa tree (Theobroma Cacao L.) which have been fermentod, dried and are of merchantable quality, as defined in the FAO. Draft Model Ordinance and Code of Practice for Cocoa Beans.

(b) Cocoa (Cacao) Nib is the product obtained from beans which have been cleaned and freed from shells as thoroughly as is technically possible

(c) Cocoa (Cacao) Mass is the product obtained by the mechanical disintegration of cocoa nib without abstraction or addition of any of its constituents.

(d) Cocoa Butter

(i) Press Cocoa Butter, is the fat which is obtained by pressure from cocoa nib or cocoa mass (cocoa liquor). It can be separated from suspended matter by filtering and contrifuging. If the fat has boon deodorized by steam and/or vacuum then the designation of the fat must include the term "deodorized".

*[*Descriptions of categories of cocoa butter other than press cocoa butter, which may be used in the manufacture of chocolate, to be developed for incorporation in the standard at the next session of the Committee, see also paragraphs 22, 23 and 24 of this Report.*]*

(e) Cocoa press cake is the product obtained by partial removal of fat from cocoa nib or cocoa mass by mechanical means.

(f) Cocoa, powder or Cocoa is the product obtained by mechanical transformation of cocoa press cake into powder.

(g) Sweetened Cocoa powder or Sweetened Cocoa is a mixture of cocoa powder and sugar only.

(h) Chocolate is the homogoneous product obtained by an adequate process of manufacture from a mixture of one or more of the following : cocoa nib, cocoa mass, cocoa press cake, cocoa powder, including low-fat cocoa powder, with sugar, with or without the addition of cocoa butter.

(b) contd.

(ii) Quality Requirements

Colour: white to pale yellow
Odour and taste: characteristic and free from foreign odours and tastes
Acid value (mg. KOH per g. fat): 4.0 max.
Peroxide value: (to be specified)

(iii) Other Requirements

The following maximum limits, toy weight, shall apply:

Matter volatile at 105ºC :	0.2%
Impurities insoluble in hexane :	0.05%

(c) Cocoa Powder or Cocoa

Cocoa Butter:	not less than 20% calculated on the dry matter
Moisture content:	not more than 9%

(d) Low-fat [1/] Cocoa Powder or Low-fat [1/] Cocoa

[1/] See paragraph 28 of the Report regarding the use of the term "low-fat".

Cocoa powder or cocoa containing less than 20% but not less than 8% of cocoa butter and with a moisture content of not more than 9%

(e) Sweetened Cocoa Powder or Sweetened Cocoa

Cocoa powder: not less than 32%

(f) Sweetened low-fat Cocoa Powder or Sweetened Low-fat Cocoa

Low-fat cocoa powder not less than 32%

(g) Chocolate and Couverture Chocolate

Cocoa butter:	not less than 18% calculated on the dry matter
Total cocoa solids:	not lose than 35% calculated on the dry matter

(h) Milk Chocolate and Milk Couverture Chocolate

Fat-free cocoa solids:	not less than 2.5% calculated on the dry matter
Total cocoa solids:	not less than 25% calculated on the dry matter
Milk fat:	not less than 3.5% calculated on the dry matter
Fat-free milk solids in their natural proportions:	not less than 10.5% calculated on the dry master
Total fat:	not loss than 25% calculated on the dry matter
Sugars	not more than 55%

(i) Skimmed Milk Chocolate

As for milk chocolate except that there shall be no requirement as to milk fat and the provision for fat-free milk solids in their natural proportions shall be 14% calculated on the dry matter.

(j) Cream Chocolate

Fat-free cocoa solids:	not less than 2.5% calculated on the dry matter
Total cocoa solids:	not less than 25% calculated on the dry matter.
Milk fat:	not less then 7% calculated on the dry matter
Fat-free milk solids in their natural proportions)	not more than 14% and not less than 3% calculated on the dry Matter
Total fat:	not loss then 25% calculated on the dry matter
Sugars:	not more than 55%

(k) Skimmed Milk Couverture Chocolate

As for milk couverture chocolate, except that there shall be no requirement as to milk fat and the provision for fat-free milk solids in their natural proportions shall be 14% calculated on the dry matter.

(l) Chocolate Vermicelli and Chocolate Flakes

Fat-free cocoa solids:	not leas than 12% calculated on the dry matter
Cocoa butter:	not less than 12% calculated on the dry matter
Total cocoa solids:	not less than 32% calculated on the dry matter

(m) Milk Chocolate Vermicelli and Milk Chocolate Flakes

Fat-free cocoa solids:	not less than 2.5% calculated on the dry matter
Total Cocoa solids	not less than 20% calculated on the dry matter
Milk fat.	not less than 3.9% calculated on the dry matter
Milk solids in their natural proportions:	not less than 10,5% calculated on the dry matter
Total fat:	not less than 12% calculated on the dry matter
Sugars:	not more than 66%

(n) Composite and Flavoured Chocolate Products

Composite Chocolate Products

(i) These products when sold or described as chocolate products must contain not loss than 60% by weight of chocolate as defined under Standards (g) Chocolate and Couverture Chocolate, (h) Milk Chocolate

and Milk Couverture Chocolate, (i) Skimmed Milk Chocolate, (j) Cream -Chocolate, or (k) Skimmed Milk Couverture Chocolate.

(ii) The ingredients named in the declaration must each ho present in an amount greater than 5% (but in total must not exceed 40%).

(iii) Additions of one or more foodstuffs may be made without declaration provided that such additions singly or in total do not exceed 5% by weight.

(iv) No substance may be added to those products which would replace the cocoa constituents specified in Standards (g) to (k) listed in (n)(i) above

Flavoured Chocolate Products

(i) Flavoured chocolate must conform with the definitions of chocolate as provided in Standards (g) to (m) and must declare the characterizing flavour other than chocolate.

(ii) Foodstuffs which are specially aromatic and alter the character of a product even in small quantities must be declared.

B. Optional Ingredients

Ingredient	Maximum level	Food
Spices	not limited	Chocolate and Cocoa Products
Salt (sodium chloride)	not limited	Cocoa Press Cake Cocoa Powder or Cocoa
		Low-fat Cocoa Powder or Low-fat Cocoa
		Sweetened Cocoa Powder
		Sweetened Low-fat Cocoa Powder

III. FOOD ADDITIVES

(a) The following provisions in respect of food additives and their specifications as contained in section **.....** of the Codex Alimentarius have been endorsed by the Codex Committee on Food Additives :

Additive	Maximum level of use	Food
Ammonium carbonate Ammonium hydroxide Magnesium carbonate Magnesium hydroxide Potassium carbonate Potassium hydroxide	The equivalent of 5% anhydrous potassium carbonate calculated on the fat-free dry matter	Cocoa Beans Cocoa Nib Cocoa Mass Cocoa Press Cake Low-fat Cocoa Powder Sweetened Cocoa Powder Sweetened low-fat Cocoa Powder
Citric Acid Tartaric acid	0.5%	as above
Vanillin Ethyl vanillin	In small amounts for flavour adjustment	Chocolate and cocoa products
Lecithin [1/]	0.5% of the acetone insoluble component of lecithin	Chocolate
	1% of the acetone insoluble component of lecithin	Cocoa powder and products made therefrom
Mono- and [1/] diglycerides of edible fatty acids	Not limited	Chocolate products

(b) The following provisions in respect off food additives and their specifications as contained in **.....** of the Codex Alimentarius are subject to endorsement by the Codex Committee on Food Additives:

Additive	Maximum level of use	Food
Sodium carbonate Sodium bicarbonate Sodium hydroxide Ammonium bicarbonate Magnesium bicarbonate Potassium bicarbonate	The equivalent of 5% anhydrous potassium carbonate calculated on the fat-free dry matter	Cocoa Beans, Cocoa Nib, Cocoa Mass, Cocoa Press Cake, Low-fat Cocoa Powder, Sweetened Cocoa Powder, Sweetened Low-fat Cocoa Powder
Flavours, except those which would imitate natural chocolate or milk fat flavour	Not limited	Chocolate and Cocoa Products

*[*Phosphoric acid*]* [2/]	*[*0.5% expressed as P_2O_5*]*	Cocoa Beans, Cocoa Nib, Cocoa Mass, Cocoa Press Cake, Low-fat Cocoa Powder, Sweetened Cocoa Powder, Sweetened Low-fat Cocoa Powder
*[*Ernulsifier Yn [1/] [3/] (mainly ammonium salts of phosphatidic acids)*]*	*[*0.7%*]*	

[1/] See paragraph 18 of this Report, indicating that the Committee agreed to propose a tentative maximum overall limit of 1.5% for all emulsifiers permitted in the standard.
[2/] See paragraph 14 of this Report
[3/] See paragraph 17 of this Report

IV. CONTAMINANTS

(a) Pesticide Residues: The product shall comply with such requirements as may be specified by the Codex Committee on Pesticide Residues.

(b) Other Contaminants.

(i) The following provisions in respect of contaminants have been endorsed by the Codex Committee on Food Additives:

Contaminant	Maximum level	Food
Copper	0.4 mg/kg	Cocoa butter
Arsenic	0.1 mg/kg	Cocoa butter
Lead	0.1 mg/kg	Cocoa butter
Iron	0.5 mg/kg	Cocoa, butter

(ii) The following provisions in respect of contaminants are subject to endorsement by the Codex Committee on Food Additives:

Contaminant	Maximum level	Food
Copper	0.4 mg/kg	Chocolate and Cocoa products
Arsenic	1 mg/kg	Chocolate and Cocoa Products
Load	2 mg/kg	Chocolate and Cocoa Products (excluding cocoa powder)
	5 mg/kg calculated on the fat-free dry matter	Cocoa Powder
Iron	0.5 mg/kg	Chocolate and Cocoa Products

V. HYGIENE

It is recommended that the products covered by the provisions of this Standard be prepared in accordance with the Code of Hygienic Practice entitled "General Principles of Food Hygiene" as approved by the Codex Alimentarius Commission.

VI. LABELLING

(a) The provisions of Sections 2.1 to 2.9 and 2.11 of the General Standard for Labelling of Prepackaged Foods apply.

(b) The following specific provisions in respect of the labelling of these products are subject to endorsement-by the Codex Committee on Food Labelling:

(i) Low-fat Cocoa Powder or Low-fat Cocoa [1/]

Products complying with the provisions of paragraph II (d) hereof but not with the provisions of paragraph II (c) must be designated 'Low-fat Cocoa Powder' or 'Low-fat Cocoa'.

(ii) Sweetened Cocoa Powder or Sweetened Cocoa and Sweetened Low-fat Cocoa Powder or Sweetened Low-fat Cocoa

Except in those countries where the law already permits such designations to be used to describe Sweetened Cocoa Powder or Sweetened Cocoa, and Sweetened Low-fat Cocoa Powder or Sweetened Low-fat Cocoa, no designation containing the word 'chocolate' shall be used for such products.

(iii) Skimmed Milk Chocolate

Chocolate complying with the provisions of paragraph II (i) hereof but not with the provisions of paragraph II (h) must be designated Skimmed Milk Chocolate.

(iv) Couverture Chocolate

If couverture chocolate contains not less than 16% fat-free cocoa solids, calculated on the dry matter, it may be designated Dark Couverture Chocolate'

(v) Skimmed Milk Couverture Chocolate

Couverture chocolate complying with the provisions of paragraph II (k) hereof but not with the provisions of paragraph II (h) must be designated 'Skimmed Milk Couverture Chocolate'.

(vi) Cocoa Butter

a Only the product described under I (d)(i) may be labelled or described as 'press cocoa butter'. If the product has been deodorized by steam and/or vacuum then the designation of the fat must include the term 'deodorized':

b Country of origin.

[1/] See paragraph 28 of this Report regarding the use of the term 'low-fat'

VII. METHODS OF ANALYSIS AMD SAMPLING

The methods of analysis and sampling described hereunder are international referee methods which are to be endorsed by the Codex committee on Methods of Analysis and Sampling.

(1) Cocoa Butter

Criterion	Method
Relative density	F & O
Refractive index	IUPAC II.B.2
Melting point	OICC page 8b - E/1961
Titre (solidification range of fatty acid)	IUPAC II.D.3.2
Saponification value	IUPAC (1964) II.D.2
Unsaponifiable matter	IUPAC (1964) II.B.5.2
Iodine value (Wijs)	IUPAC II.D.7.3
Organoleptic Examination (colour, odour, taste)	OICC, page 2 - E/1963
Acid value	IUPAC II.D.I
Peroxide value	F & O
Pesticide residues	Codex Committee on Pesticido Residues
Matters volatile at 105ºC	(OICC Determination of moisture 3- E/1952.
Impurities insoluble in hexane	IUPAC (1964) II.C2
Iron	F & O
Copper	F & O
Arsenic	F & O
Lead	F & O

*[*Note*:* IUPAC indicates Methods of the International Union of Pure and Applied Chemistry, OICC indicates Methods of the Office International du Cacao et Chocolat, and F & O those methods adopted by the Codex Committee on Fats and Oils*]*

Sampling: The Statistical Sampling Scheme and Physical Methods for Taking Samples from Analytical Methods of the Office International du Cacao et Chocolat (OICC), Sampling III, Cocoa Butter, page 1 - E/1952 or its equivalent should be used.

(2) Cocoa Products and Chocolate [1/]

Criterion	Method
Moisture content of cocoa beans	ISO [2/] AOAC (1965) [2/] 12.002. JAOAC ref. 14,529 (1931)
Total fat (HCL digested)	OICC [2/] and

	AOAC [2/] (1965:- 12.022-12.023; JAOAC ref. 8,705 (1925); 9,469 (1926). 28,482 (1945), 33,342 (1950), 34,442 .(1951)
Ash (water soluble, water insoluble and acid insoluble)	OICC [2/] and AOAC [2/] (1965:- 12.003, 12.004, .2.007; JAOAC ref. 23,680 (1940, 24,667 (1941), 25,478 (1942)
Milk fat content	OICC semi-micro (butyric, total/ and residual) indices of fats- and AOAC Mole percent butyric acid (1965: 26.014-26.039; JAOAC ref. 39,212 (1956), 40,531 (1957))
Dry, fat-free cocoa mass	AOAC (1965:- 12.021, JAOAC ref. 14,526, 530 (1931), 24,720 (1941))
Shell In the final product	Spiral vessel count [3/] JAOAC 51:-457-460 (1968) JAOAC ref. 51,725 (1968)

[1/] These methods to be given priority of consideration by the Codex Committee on Methods of Analysis and Sampling (see paragraph 44 of this Report).

[2/] Regarded as alternative referee methods (see paragraph. 44)

[3/] Recommended for endorsement on a temporary basis (see paragraph 44)

Note by the FAO Secretariat:

In the case of the ISO and OICC methods referred to above, references indicating precisely where these methods are to be found will be given by the FAO Secretariat in duo course.

F A O

MODEL ORDINANCE AND CODE OF PRACTICE

ON COCOA BEANS

As requested by the Fifth Session of the Codex Committee on Cocoa Products and Chocolate, this Appendix III contains for the information of Governments the FAO Draft Model Ordinance and Code of Practice on Cocoa Beans elaborated by the Second Session of the Working Party on Cocoa Grading, Paris 2-6 July, 1963. This Working Party was set up by the FAO Cocoa Study Group in accordance with the wishes of the Committee on Commodity Problems. FAO has received comments on the Model Ordinance from ten importing countries and seven exporting countries. In the light of these comments and the apparent measure of agreement among countries interested in the Ordinance, it has been suggested that a further meeting of the Working Party might be convened to finalize the Ordinance. The views of Members and Observers of the FAO Study Group on Cocoa are being currently sought on this and the best way to conclude this work. Meanwhile, the Draft Ordinance is attached to assist Governments and Members of the Codex Alimentarius Commission in their consideration of the provisions in respect of cocoa beans as set out in the proposed draft provisional standard for cocoa products and chocolate, contained in Appendix II to this Report.

DRAFT INTERNATIONAL COCOA STANDARDS

MODEL ORDINANCE AND CODE OF PRACTICE

MODEL ORDINANCE

1. Definitions

"Adulteration" Alteration of the composition of graded cocoa by any means whatsoever so that the resulting mixture or combination is not of the grade prescribed, or affects injuriously the quality or flavour, or alters the bulk or weight.

"Flat bean" a cocoa bean from which the cotyledons are absent or are too thin to be cut to give a surface of cotyledon

"Foreign matter" any substance other than cocoa beans.

"Germinated bean" a cocoa bean the testa or seedcoat of which has been pierced, slit or broken by the growth of the seed germ.

"Insect-damaged bean" a cocoa bean, the internal parts of which are found to contain insects at any stags of development, or to show signs of damage caused thereby, which are visible to the naked eye.

"Mouldy bean" a cocoa bean on the internal parts of which mould it visible to the naked eye.

"Slaty bean" a cocoa bean which shows a slaty colour on half or more of the surface exposed by a out made lengthwise through the centre.

"Smoky (hammy) bean" a cocoa bean which has a smoky smell or taste or which shows signs of contamination by smoke. Badly tainted smoky beans are described as hammy beans.

"Thoroughly dry cococa" cocoa which has been evenly dried throughout. The moisture content must not exceed 8.0 percent. [1/]

[1/] This limit takes into consideration unfavourable climatic conditions in some producing countries. It is hoped that within a reasonable time a lower limit will become acceptable by all producing countries as the result of the use of improved drying and storage techniques.

2. Merchantable Quality

Merchantable quality cocoa beans must be fermented, thoroughly dry, uniform in size [2/] and free from smoky (hamay) beans and ill foreign odours or flavours, foreign matter and any evidence of adulteration

[2/] "Uniform in size": as a guide not more than 10 percent of the beans should be outside the range of plus or minus one-third of the average weight.

3. Grade Standards

Cocoa shall be graded on the taste of the count of defective beans in the out test. Defective beans shall not exceed the following limits:

Grade I -
- (a) mouldy beans, maximum 3 percent by count;
- (b) slaty beans, maximum 3 percent by count
- (c) insect-damaged, germinated, flat or otherwise defective beans, total maximum 3 percent by count

Grade II - (a) mouldy beans, maximum 4 percent by count;

(b) slaty beans, maximum 8 percent by count;

(c) insect-damaged, germinated, flat or otherwise defective beans. total maximum 6 percent by count.

Notes: When a bean is defective in more than one respect, It shall be recorded In one category only, the meet objectionable. After mouldy beans, slaty beans are the most objectionable.

4. Sub-standard cocoa

All dry cocoa which fails to reach the standard of Grade II will be regarded as sub-standard cocoa and so marked (SS).

5. Marking and Sealing

(a) All cocoa graded shall be bagged and officially sealed. The bag or seal shall show at least the following information:

country of origin, grade or "SS" if sub-standard, cocoa year and whether light or mid crop [1/], and other necessary identification marks in accordance with established national practice

(b) The period of validity of the grade shall be determined by Governments in the light of climatic and storage conditions.

[1/] Absence of a crop indication moans main crop.

6. Recheck at Port of Shipment

Notwithstanding paragraph 5(b) above, all cocoa so graded shall be rechecked at port within seven days of shipment.

7. Implementation of Model Ordinance

Methods of sampling, analysis, bagging, marking and storage applicable to all cocoa traded under the above International Standards are set out in the attached Code of Practice.

CODE OP PRACTICE

A. Inspection

1. Cocoa shall be examined in lots, not exceeding'25 tons in weight.

2. Every parcel of cocoa shall be grade marked by an inspector, after determining the grade of the cocoa on the basis of the cut test (see paragraph C 'below).

Grade marks shall be in the form set out in, and shall be affixed according to, Section ….. of ….. [1/] and shall be placed on bags by moans of a stencil or stamp (see also paragraph E below).

B. Sampling

1. Samples for inspection and analysis should be obtained:

(a) front cocoa in bulk, by taking samples at random from the beans as they enter a hopper or from the top, middle and bottom of beans spread on

tarpaulins or other clean, dust-free surface, after they have been thoroughly mixed}

(b) from cocoa in bags by taking samples at random from the top, middle and bottom of sound bags using a suitable stab-sampler to enter closed bags through the meshes of the bags, and to enter unclosed bags from the top.

2. The quantity of samples to be taken should be at the rate of not less than 300 beans for every ton of cocoa or part thereof, provided that in respect of a consignment of one bag or part thereof, a sample of not less than 100 beans should be taken.

3. For bagged cocoa, samples shall be taken from not less than 30 percent of the bags, i.e. from one bag in every three

4. For cocoa in bulk, not less than five samplings shall be taken for every ton of cocoa or part thereof.

5. In importing countries samples for inspection should be taken from not less than 30 percent of each lot of 200 'Sons or less, i.e. from 1 bag in 3. Samples should be taken at random from the top, the middle and the bottom of the bag.

C The Cut Test

1. The sample of cocoa beans shall be thoroughly mixed and then "quartered" down to leave a heap of slightly more, then 300 beans The first 300 beans shall then be counted off, irrespective of size, shape and condition.

2. The 300 beans shall be out lengthwise through the middle and examined

3. Separate counts shall be made of the number of beans which are defective in that they are mouldy, slaty, insect damaged, germinated, flat or other-vise defective. Where a bean is defective in more than one respect, only one defect shall be counted, and the defect to be counted shall be the defect which occurs first in the foregoing list of defects.

[1] i.e. the appropriate reference in national regulations

4. The examination for this test shall be carried out in good daylight or equivalent artificial light, and the results for each kind of defect shall be expressed as a percentage of the 300 beans examined.

D. Bagging

1. Bags should be clean, sound and properly sewn. Cocoa should be shipped only in new bags.

E. Sealing and marking

1. After grading, each bag should be sealed with the individual examiner's seal. The grade should be clearly marked on each bag. Bags should also be clearly marked to show the grading station and period of grading (week or month).

For these purposes the following measures shall be carried out:

(a) Suitable precautions Will be takes in the distribution and use of examiners seals to ensure that they cannot be used by any unauthorized person.

(b) Parcels shall be numbered consecutively by the official examiner with lot cumbers from the beginning of each month. The parcel number or lot number will be stencilled on each bag in every parcel examined, in the corner nearest the seal.

(c) Grade marks will be stencilled near the mouth of the bag.

F. Storage

1. Cocoa shall be stored in premises constructed and operated with the object of keeping the moisture content of the beans as low as possible, consistent with local conditions, and in any case not above 8.0 percent.

   Storage shall be on gratings or deckings which allow at least 7 cm of air space above the floor.

2. Measures shall be taken to prevent infestation by insects, rodents and other pests.

3. Bagged cocoa shall be so stacked that:

   (a) each grade and shipper's mark is kept separate by clear passages of not less than 60 cm. in width, similar to the passage which must be left between the bags and each wall of the building;

   (b) disinfestation by fumigation (e.g. with methyl bromide) and/or the careful use of acceptable insecticide sprays (e.g. those based on pyrethrin) may be carried out where required) and

   (c) contamination with odours or flavours or dust from other commodities, both foodstuffs and materials such as kerosene, cement or tar, is prevented.

4. Periodically during storage and immediately before shipment, the moisture content of each lot should be checked to ensure that it does not exceed 8.0 percent. The use of a moisture meter is recommended for this purpose [1/].

[1/] The operation of moisture meters must be checked at intervals with a laboratory reference method based on loss of weight on drying. Accurate weighing before and after drying enables the percentage of moisture in the beans to be calculated.

G. Infestation

1. Cocoa beans may he infested with insects which have not penetrated the beans and whose presence is not revealed by the out test which is employed for grading purposes. Such insects may subsequently enter beans or they may be involved in cross infestation of other shipments.

2. Therefore, when the cocoa is rechecked at port before shipment, as provided under paragraph 6. of the Model Ordinance, it should also be inspected for infestation by major insect pests. If it is found to be seriously infested it should, before shipment, be fumigated, or otherwise treated to kill the pests. Care should be taken to avoid cocoa beans becoming infested in ships and stores from other commodities or with insects remaining from previous shipments.

3. If the use of insecticides or fumigants is necessary to control infestation, the greatest care must be exercised in their choice and in the technique of their application to avoid incurring any risk of tainting or the addition of toxic

residues to the cocoa. Governments should prohibit the use of fumigants which affect the flavour of cocoa beans, or the residues of which may have accumulative toxic effects and should establish the necessary administrative organization to enforce the regulations.

4. Rodents should as far as possible be excluded from cocoa stores by suitable rodent proof construction, and where direct measures are necessary to control rodents the greatest care must be taken to prevent any possibility of contaminating the cocoa with substances which may be poisonous