

codex alimentarius commission

FOOD AND AGRICULTURE
ORGANIZATION OF THE
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WORLD HEALTH
ORGANIZATION

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ALINORM 81/29A

JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX ALIMENTARIUS COMMISSION

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REPORT OF THE SECOND SESSION
OF THE CODEX COMMITTEE ON CEREALS
AND CEREAL PRODUCTS

Washington, D.C., 27 April - 1 May 1981

INTRODUCTION

1. The Codex Committee on Cereals and Cereal Products held its Second Session from 27 April to 1 May 1981 in Washington, D.C., by courtesy of the Government of the United States. The Session was chaired by Mr. David R. Galliard, Deputy Administrator, Federal Grain Inspection Service, USDA.
2. The Session was attended by delegations and observers from 36 countries. Observers were present from 8 international organizations. (See Appendix I).
3. The Meeting was opened by Dr. Kenneth A. Gilles, Administrator-Designate, FGIS, USDA, who welcomed the participants on behalf of the Secretary of Agriculture. Dr. Gilles emphasized the importance of the work of the Committee to producers and consumers, exporters and importers and that there might be work for the Committee for a decade. He stressed the need to ensure quality and wholesomeness of cereals and cereal products and to facilitate international trade in them. (See also Appendix). Mr. G.O. Kermode, Chief of the FAO/WHO Food Standards Programme expressed the appreciation of the Directors-General of FAO and WHO to the US authorities for hosting the 2nd Session of the Committee prior to the 14th Session of the Codex Alimentarius Commission.

ADOPTION OF THE AGENDA

4. The Committee adopted the Provisional Agenda. The Committee agreed with a proposal by the Chairman to establish an ad hoc Working Group on Methods of Analysis to examine methods for inclusion in the first instance in the standard for maize. It was agreed that the Working Group which was open to all members of the Committee would comprise representatives from the following delegations: Argentina, France and the USA as well as the observer of the International Association of Cereal Chemistry (ICC).

MATTERS OF INTEREST TO THE COMMITTEE ARISING FROM THE REPORTS OF OTHER CODEX COMMITTEES

5. The Committee had before it Working Paper CX/CCP 81/2 containing an outline of matters which had been discussed by other Committees since March 1980 and were of interest to the work of this Committee. The Secretariat reported also on the 7th Session of the Committee on General Principles (6-10 April 1981, Paris).

6. The Committee further noted that only the Coordinating Committees for Latin America and Europe had met between the first and the present session of this Committee, and therefore comments on certain matters for discussion under items 8 and 9 were available only from those two Committees. However, arrangements had been made to include an appropriate item into the agendas for the next Sessions of the Coordinating Committees for Africa and Asia.

Cooperation with Gatt - Gatt Agreement on Technical Barriers to Trade (para. 18 of ALINORM 81/3)

7. The 27th Session of the Executive Committee had been informed of the close liaison established between the Secretariats of Gatt and the Codex Alimentarius Commission, which through a mutual exchange on information of government acceptances intended to avoid duplication of work in the field of food standardization. The existing cooperation would be strengthened by a study of the respective acceptance procedures to identify, if necessary, any overlapping with activities of other international organizations.

Nutritional Aspects of Codex Work (paras 21-29 of ALINORM 81/3)

8. The Committee noted that the Executive Committee had reiterated its opinion that nutritional considerations would be an important aspect of the work of this Committee. The view had been expressed that the study on this matter prepared by a consultant should take into account the question of nutrients lost during processing and handling and their possible replacement.

9. The Committee was informed that the before mentioned study had been finalized and issued to governments for consideration by the forthcoming Session of the Commission. It was expected that the Commission would establish procedures to ensure an uniform application of the mandate to consider nutritional aspects of standards where that was appropriate. Further details would be made available to the next Session of this Committee (see also ALINORM 81/7).

10. Attention was also drawn to regional standards for certain cereal products under consideration by the Coordinating Committee for Africa. The Committee agreed that there was a need to assure that also the standards under discussion by that Committee should safeguard the nutritive value of the products concerned, (milled sorghum and millets). This was especially of importance since these products were produced now at an industrial scale in addition to the traditional processing at village or household level.

Pulses and Legumes (paras 43-46 of ALINORM 81/3)

11. The Secretariat provided information on discussions by the 27th Session of the Executive Committee on the need for standards for pulses or dry (grain) legumes. It was pointed out that there might be some linkage to the activities of this Committee (admixture to flour of flours or meals prepared from dry legumes). The Executive Committee had expressed the view that this Committee might be one of the subsidiary bodies which could be involved in the elaboration of standards for the above products.

As requested by the Executive Committee a brief background paper has been prepared for discussion by the Commission (ALINORM 81/35). Details on the decisions by the 14th Session of the Commission on pulses will be submitted to the next Session of this Committee, It was also noted that bean flours had been mentioned as optional ingredients in the Standard for wheat flour. (See also paras 81 and 87).

Nature of Codes of Practice (para. 69 of ALINORM 81/3)

12. At the request of several committees and in particular the Committee on Food Hygiene, the Executive Committee had reaffirmed that codes of practice were, as indicated in the General Principles of the Codex Alimentarius, advisory, and that they were issued to governments as recommendations, However, parts of codes of practice or even the whole code could become mandatory by being included or referred to in a mandatory way in a Codex Standard. The Secretariat pointed also out that it was possible to include into a code a recommendation, i.e. an advisory provision that certain requirements should be mandatory.

Committee on Vegetable Proteins - Codex Standard for Gluten and Terms of Reference of that Committee (paras 8-11, 33, 129, 130 of ALINORM 81/30)

13. The Committee on Vegetable Proteins had discussed at its First Session its Terms of Reference which included also reference to the elaborating of definitions and or worldwide standards for vegetable protein products deriving from cereals. The Committee on Vegetable Proteins had agreed that gluten did not fit well into the Scope of the other proposed standards (for vegetable protein flours, concentrates and isolates) and had decided to commence work on a separate standard for gluten at its next session.

14. This Committee recalled that it had, at its. first session, agreed that there was no need for it to elaborate a standard for gluten (para. 121 of ALINORM 81/29).

Codex Committee on Pesticide Residues - Definition and Classification of Foods and Feeds -(paras 24-31 of ALINORM 81/24)

15. The Committee noted that the 12th Session of the Committee on Pesticide Residues had considered classifications for raw and processed foods respectively. For raw foods including those cereals for which a group "Maximum Residue Level" had been established, the Committee had favoured the opinion that only those foods should be included into the group MRL in the Codex classification list. With regard to processed foods, including also milled cereal products, the Committee on Pesticide Residues had agreed, on to advice from JMPR, that MRL's should not be established for these processed foods unless there were pressing considerations for their establishment. The Committee then adopted detailed Guidelines on how processed foods should be handled in relation to pesticide residues (para. 31).

16. The Committee noted that so far cereals and cereal products had been included in the Guide to Codex Maximum Limits for Pesticide Residues in two groups of the classification; namely "Cereal Grains, Class A, Type 3, Group 15" and "Cereal Products, Food Products - Unclassified".

17. It was suggested that the Committee might wish: to give further attention to this matter during the discussion of provisions dealing with pesticide residues in the draft standards for wheat flour, maize grains, and meals and grits

Committee on Food Labelling - Revised Guidelines on Date Marking for Use of Codex Committees (paras 29-56 of ALINORM 81/22)

18. The Committee was informed *that* the above guidelines had been revised to facilitate their application. The amendments ensured more precise advice on the presentation of date marking related to the shelflife of the product concerned and on storage instructions, Codex Committees were instructed to provide a justification not only when the Committee decided not to include date marking provisions but also in case the date of minimum durability was not chosen. The Committee agreed that those details would be discussed in connection with the labelling sections of the standards under discussion.

Codex Committee on Food Hygiene - General Principles for the Establishment and Application of Microbiological Criteria for Foods (paras 59-65 of ALINORM 81/13, Appendix II)

19. The Committee was informed that the Committee on Food Hygiene had finalized the above document and submitted it for adoption to the forthcoming Session of the Commission. The Committee noted that General Principles distinguished between mandatory criteria (microbiological standard) and advisory criteria (microbiological end product specifications and microbiological guidelines). It was further noted that the General Principles, which were intended to provide guidance to Codex Committees, indicated that a microbiological standard should not be established de novo but derived from microbiological end product specifications (advisory) and an accompanying code of practice.

20. The Committee agreed to take into account the relevant provisions of the General Principles during the discussion of the hygiene provisions of the standards under elaboration.

Codex Committee on Food Additives (ALINORM 81/12)

21. The Committee noted that the Committee on Food Additives had continued its work on a review of classnames, for food additives for the purpose of label declaration (paras 106-128). Certain classnames which had been amended by that Committee were of interest to this Committee; e.g. flour treatment agents (for bleaching agents), enzymes (for enzymic preparations); raising agent(s) baking powder(s). The Committee decided to discuss this matter further under the agenda items dealing with the draft standards (paras 84-87).

22. The Committee was informed that the Committee on Food Additives had expressed the view that Commodity Committees in conjunction with the Committee on Methods of Analysis were responsible for the development of Sampling plans for the determination of compliance with maximum levels for contaminants. The Committee had also indicated that it would provide further advice on the meaning of Codex maximum levels for contaminants in relation to compliance of lots or consignments with these levels (paras 181-185).

23. The Committee was informed that the Codex Committee on Food Additives had requested the Commission to authorize amendment of the General Standard for Irradiated Foods in order to take into account the conclusions of the recent session of the FAO/IAEA/WHO Expert Committee. The maximum level of irradiation of 1 k rad for wheat and wheat derived products and for rice remained unchanged. Rice has now been given unconditional acceptance. It was pointed out that governments would be

requested to submit comments to the Committee on Food Additives on these changes arising from the full report of the Expert Committee (paras 186-189).

24. The Committee noted that a revised text of the International Plant Protection Convention had been elaborated. It was mentioned that certain parts of this document might have some bearing on the content of labelling sections of standards which are being elaborated by this Committee. Copies of the revised text were made available to the meeting.

Codex Committee on General Principles (ALINORM 81/33)

25. The Committee noted that the Executive Committee and the Codex Committee on General Principles had revised the Procedure for the Elaboration of Codex Standards and the revised procedures would be considered by the Codex Alimentarius Commission at its 14th Session in July 1981. The revised procedures, if adopted, would be incorporated in the 5th Edition of the Procedural Manual.

MATTERS OF INTEREST TO THE COMMITTEE ARISING FROM THE ACTIVITIES OF OTHER INTERNATIONAL ORGANIZATIONS

26. The Committee had before it a summary of work of ISO and ICC in the period since March 1980 (Conference Room Document No. 1), intended to up-date information in paper CX/CCP 80/3 distributed at the First Session of this Committee.

27. The Committee noted that an ad-hoc Working Group of Sub-Committee 4 of the ISO Technical Committee 34 would meet in the near future to consider specifications for rice and wheat respectively. The observer from ISO pointed out that the decision to commence work on these commodities had been taken some years ago and that it was in line with the ISO policies to develop definitions, specifications and test methods for agriculture products.

28. The representative of FAO noted that this was consistent with the ISO "Statement of Policy" and informed the Committee of the more recent Agreement of Cooperation between ISO and FAO. ISO had indicated its willingness to fill any gaps in the field of standardization if so requested.

29. It was pointed out by one delegation that this Committee had not yet been able to decide whether it would embark on a worldwide standard for milled rice. To take a final decision on this matter, the views of the Coordinating Committees for Africa and Asia would have to be examined since the product was of great importance to these regions. It was, therefore, considered premature for ISO to commence work on a specification for rice, including milled rice.

30. The Committee agreed with the view that standards for foods were the concern of the Codex Alimentarius Commission and that ISO should concentrate on other agricultural products and test methods. The Committee requested the Secretariat to bring these views to the attention of ISO and inform the Commission of the outcome of the intersecretariat discussion.

CONSIDERATION OF DRAFT STANDARD FOR MAIZE (CORN) AT STEP 7

31. The Committee had before it the above draft standard in Appendix III to ALINORM 81/29 and comments received thereon from governments as contained in documents CX/CCP 81/3, CX/CCP 81/3-Add.1, CX/CCP 81/4 and Conference Room Document No. 2.

32. The delegation of Argentina introduced working document CX/CCP 81/4 "Definitions for Use in the Codex Standard for Maize (Corn)". The Committee expressed its appreciation to Argentina for having prepared the paper and decided to consider the definitions in conjunction with the standard. The Committee decided to examine the standard section by section.

33. The Committee agreed to add the botanical names for dent and flint maize, i.e. Zea mays indentata and Zea mays indurata. It was also agreed to include reference to hybrids of these two types, since hybrid maize could be used for human consumption. The delegation of France drew attention to an error in the French translation and it was agreed that flint maize should be translated as "maize corne" wherever it appears in the report.

Product Definition - Section 2.1

34. The Committee agreed with the proposal of the United States to delete reference to "evenly dried matured" in Section 2.1 and to amend the text as follows: "Maize is the shelled grains of the species defined in the Scope.

Presentation - Section 2.2

35. The Committee considered the various colour types of maize and agreed to include red maize. It was noted that in addition to maize grains which were uniformly coloured, allowance would have to be made for maize kernels with two or more colours. The Committee agreed to adopt the following text to follow Section 2.2.1:

2.2.1.1 Yellow maize may contain not more than 5.0 percent by weight of maize of other colours. Maize grains which are yellow and/or light red in colour are considered to be yellow maize. Yellow maize also means maize grains which are yellow and dark red in colour, provided the dark red colour covers less than 50 percent of the surface of the grain.

2.2.1.2 White maize may contain not more than 2.0 percent by weight of maize of other colours. Maize grains which are white and/or light pink in colour are considered to be white maize. White maize also means maize grains which are white and pink in colour, provided the pink colour covers less than 50 percent of the surface of the grain.

2.2.1.3 Red maize may contain not more than 5.0 percent by weight of maize of other colours. Maize grains which are pink and white or dark red and yellow in colour are considered to be red maize, provided the pink or dark red colour covers 50 percent or more of the surface of the grain.

2.2.1.4 Mixed maize includes maize not falling into classes of yellow white or red maize as defined in Sections 2.2.1.1 to 2.2.1.3 above.

2.2.2 Maize also may be presented as flint or dent, or mixtures thereof:

2.2.2.1 Flint maize includes maize of any colour which consists of 95 percent or more by weight of grains of flint maize.

2.2.2.2 Dent maize includes maize of any colour which consists of 95 percent or more by weight of grains of dent maize.

2.2.2.3 Flint and dent maize includes maize of any colour which consists of more than 5.0 percent but less than 95.0 percent of flint maize.

General Requirements - Section 3.1

36. The Committee aligned the wording of Section 3.1.1 with the amended scope section by deleting "lots of" and decided to relate this requirement to representative samples of the lot. The Spanish speaking delegations pointed out that "lot" should be translated in this context as "partida". The Committee also decided to make similar amendments to Section 3.1.2.

Adulteration - Section 3.2

37. The delegation of France proposed to change the title of Section 3.2 to read "Alteration" instead of "Adulteration" since the term of adulteration had a different connotation. It was pointed out that Section 3.2.2 was actually a definition of the term for the purpose of this standard. The Committee did therefore not change the term. It was further pointed out that a requirement for the absence of foreign flavours was already included in Section 3.1.1. The delegation of Argentina pointed out that the term "flavour" in this context should be translated into Spanish as "aroma y sabor". The Committee decided therefore to delete reference to flavour from Section 3.2.2.

Moisture Content - Section 3.3.1

38. The Committee deleted the term "dried" from the provision and agreed to increase the maximum limit of moisture content to 15.5% since this was consistent with the general practice in trade. The delegation of Egypt indicated that in his country it was preferred to purchase maize with a moisture content of not more than 15%. Other countries had mentioned in their comments that they would like to see a figure of 14.5%. It was further noted that different climatic conditions and storage practices usually necessitated different moisture limits. However, the Committee emphasized that the figure of 15.5% represented a maximum level. It was also agreed to relate the moisture content to the representative sample. At the request of the delegation of Spain, it was agreed to give consideration to different methods for the determination of the moisture content under Section 8 - Methods of Analysis and Sampling (see paras 53~55).

Fat Acidity - Section 3.3.2

39. The opinion was expressed that it was superfluous to include in the standard requirements for fat acidity in view of the fact that the standard covered whole grain maize only. The Committee agreed with this view and deleted Section 3.3.2.

Section 3.4 - Definition of Defects

40. Several written comments had been received proposing that the definition of defects should be made in broader groups, since the very detailed classification contained in the draft standard required very extensive and costly analysis without providing greater benefits. This was also supported by the delegation of France. The Committee accepted a scheme proposed by the United States which provided for three main groups; namely, "Blemished Grains", "Broken Grains and Extraneous Vegetable Matter" and "Filth". The Committee agreed that such headings should be included, as proposed in the written comments (see CX/CCP 81/3). The delegation of Spain proposed to introduce a maximum limit for extraneous vegetable matters separate from the one for broken grains; that is to establish a sub-section 3.5.2.1 for extraneous vegetable matter with a maximum of 1% m/m.

Section 3.5 - Tolerances for Defects

41. The Committee agreed that in principle the provisions for tolerances for defects should follow the classification established in Section 3.4. However, it was agreed that for discoloured or heat damaged grains a more restrictive tolerance of 0.5% m/m was required which in course was included in the overall maximum of 7% m/m for blemished grains.

42. The Committee discussed in great detail how toxic or noxious seeds should be classified and what limits should be included in that section. The Committee was of the opinion, that, whereas one could justify the inclusion of a requirement for toxic seed in the provision for filth, it was than necessary to have a much lower maximum limit than 0,5% m/m for toxic seeds. The Committee agreed therefore to add a new provision to read as follows:

"3.5.4 Toxic or noxious seeds - maize should be free from toxic or noxious seeds in amounts which may represent a hazard to health."

43. The Committee discussed also the appropriateness of including a precise sample size (500 grammes) in the draft standard. Several delegations were of the opinion that for certain determinations the sample size could he much smaller. The Committee concluded that the question of sample size was not required in the standard and could be left to the discretion of the examining authorities as the tolerances were expressed as % m/m. The Committee deleted the figure of 500 grammes.

Section 4 - Contaminants

44. The Committee agreed with the provision contained in the draft standard, but was, however, of the opinion that mention should be made of other contaminants. The delegation of Canada drew attention to the written comment from Poland which suggested that reference to heavy metals should be made in this section. It was further mentioned that provisions could be established for other contaminants such as dioxins and benzpyrenes.

45. The Committee agreed to introduce a new Section 4.3, which reads as follows:

"4.3 Maize shall he free from heavy metals in amounts which may represent a hazard to health."

Section 5 - Hygiene

46. The Committee decided that in Section 5 reference should be included to mycotoxins and the Secretariat was requested to prepare the appropriate text from already adopted codes of practice and to adjust the rest of the provision to the changes made in Section 3. The Committee agreed to include the following text of Section 5 into the draft standard:

"5.1 It is recommended that the product covered by the provisions of the standard be prepared in accordance with the appropriate sections of the Recommended International Code of Practice - General Principles of Food Hygiene (Ref. So. CAC/RCP 1-1969, Rev. 1).

5.2 To the extent possible in good manufacturing practice, including marketing and storage, the product shall be free from objectionable matter, having regard to the tolerances indicated in Section 3.5.

5.3 When tested by appropriate methods of sampling and examination, the product:

- (a) Shall be free from micro-organisms in amounts which may represent a hazard to health.
- (b) Shall not contain any substances originating from micro-organisms, particularly mycotoxins in amounts which exceed the tolerances or criteria established by the official agency having jurisdiction. ¹

¹ In accepting this standard, governments are requested to indicate the requirements in force in their countries.

47. The delegation of Argentina wished to be placed on record that in his opinion the requirement for appropriate methods might create difficulties in countries which were not able to employ very sophisticated methodology. The delegation of Spain stated that it would prefer to restrict 5.3(b) to aflatoxin only which was the principal toxin of concern.

Section 6 - Packaging and Labelling

48. The Committee was of the opinion that the standard should follow the usual Codex format and instructed the Secretariat to redraft this section and to separate the requirements for packaging and labelling. It was further agreed that the provisions for packaging should be similar to those included in other Codex standards, appropriately adapted to the requirements of the product. The Committee agreed to the following text:

"6. PACKAGING

6.1 The product shall be packed in containers which will safeguard the hygienic and other qualities of the food.

6.2 The containers including packaging material shall be made only of substances which are safe and suitable for their intended use."

49. The Committee agreed that in the labelling section reference should be made to General Standard for the Labelling of Prepackaged Foods. It was noted that the standard was under revision and would include in the revised Scope Section reference to products which were sold loose out of packages.

50. The Committee decided that in view of the nature of the product date marking provisions were not necessary and consequently also no specific storage instructions were needed.

51. The Committee agreed to the following text for Section 7 on Labelling:

"7. LABELLING

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

7.1 The following information shall be given on the container.

7.2 The Name of the Food

7.2.1 The name of the food shall be maize or corn. ²

7.2.2 In addition, the food may be designated with the appropriate term indicated in Sections 2.2 provided the food complies with the requirements defined in Sections 2.2.

² In accepting the standard, governments are requested to indicate which term is required in their country.

7.3 Net Contents

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

7.4 Name and Address

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

7.5 Country of Origin

The country of origin of the food shall be declared.

7.6 Lot Identification

Each container (bag) shall be permanently marked in code or clear to identify the packer and the lot."

52. The delegation of Argentina stated that the requirement to declare all the above information on the label should apply only to small packages. If applied also to sacks or to the product in bulk, this might have an adverse effect on world trade; in this case the above information could be included in the trade contracts. For a comment from the Netherlands on Section 7.5 - Country of Origin - please see para. 92.

Section 8 - Methods of Analysis and Sampling

53. The ad hoc Working Group consisting of delegates of Argentina, France, and the United States, and the observer of ICC had met to discuss methods of analysis for moisture content in maize. The group had recognized that several methods of determining moisture content of maize had been developed by national and international organizations. The group had also recognized that the purpose of Codex Standards was to facilitate trade. Note had also been taken of the need for methods which:

1. Were practical and acceptable to all parties to the transaction;
2. provided equivalent results;
3. provided results which could be readily interpreted by all parties.

The Working Group had reached a consensus to recommend that the following action be taken by the CCP:

1. That Section 7.1 as presented in ALINORM 81/29 be deleted in its entirety.
2. That Section 3.3.1 be changed to read as follows: "Moisture Content - The Moisture content of lots of maize grains shall not exceed 15.5% (m/m) using testing methods as mutually agreed by the buyer and the seller."

Section 8.3 - Method of Sampling, as presented in ALINORM 81/29, had not been discussed by the Working Group.

54. The Committee considered the recommendation of the Working Group and agreed in principle with it. However, in view of the fact that there were at least four very well established methods for the determination of moisture content in maize, it was thought desirable to list these four methods (ICC, ISO, AACC, AOCC) and leave it to the parties concerned to agree upon one of these. The Committee in general felt that internationally established methods would be preferable to those which were only of national application. The delegation of France, supported by the delegation of the

Netherlands would have preferred to retain only one method for the determination of moisture content in maize and that should be by the ISO method.

55. The Committee noted that the above methods were intended solely to serve as reference methods and that countries were free to use other methods for routine checking.

56. Sampling

The Committee agreed to list for the purpose of sampling the method developed by ISO (ISO/8 950 - 1969). The Committee noted that Section 8 would be subject to endorsement by the Committee on Methods of Analysis and Sampling.

57. Status of the Standard

The Committee decided to advance the draft standard for maize (corn) to Step 8. However, several delegations referred to the fact that they had received the written comment papers late, which had contained proposals for substantial changes to the standard. In view of the fact that substantial changes had been made, the delegations of Spain and Nigeria would have preferred the standard to have been issued for a further round of government comments at Step 6. The delegation of the Netherlands, speaking on behalf of the Member States of the EEC, stated that the standard should not be advanced to Step 8. The revised Draft Standard for Maize (Corn) at Step 8 is contained in Appendix II.

DETERMINATION OF MOISTURE CONTENT IN CEREAL GRAINS AND MILLED CEREAL PRODUCTS

58. The Committee had before it a Working Paper (CX/CCP 81/5) prepared by the United States on the determination of moisture content which had been subject to discussion in the consultants paper CX/CCP 80/5 under para. 6:

"Moisture Content: for safe storage, and to ensure that the commodity during storage does not undergo deterioration through heating, fungal or bacterial attack, or insect infestation, the moisture content should not exceed an agreed maximum, such maximum being not the average moisture content of the whole consignment but the maximum moisture content of any part of the consignment."

59. At the First Session of this Committee the delegation of the United States had expressed the view that the above recommendation was not statistically sound and the interpretation of moisture content given by* the consultant would require grain to be held at a much lower moisture level than was consistent with normal practice. This would result in unreasonable rejections and their consequential economic loss.

60. To illustrate the foregoing point, the paper described alternative statistical sampling plans and in particular the Cumulative Sum (Cu-Sum) Sampling Plan which demonstrated the proportion of lots at risk of non-compliance. The rationale of the above sampling plan was contained in a publication by Bartlett and Provost which had been appended to the paper.

61. This type of statistical sampling plan had been also utilized by other Codex Committees, particularly concerning tolerances for quality defects. The principal matter for the Committee to decide was whether compliance with the limit for maximum moisture content should be based upon the average of a series of samples or should represent the absolute maximum of individual samples.

62. A number of delegations drew attention to the difficulties of drawing representative samples and the possible variation of moisture within the consignment

according to its size and the circumstances under which it had been transported or stored. Furthermore several delegations considered that there were technical differences in the nature of different grains as well as between grains and milled products.

63. Other delegations pointed out that variations in moisture might be found depending upon the point at which the determination was made within the distribution chain. In view of these difficulties and the fact that the Committee on Methods and Analysis had extensive experience of similar sampling plans for other food products, the Committee decided to refer the document to that Committee for review.

CONSIDERATION OF THE PROPOSED DRAFT STANDARD FOR WHEAT FLOUR AT STEP 4

64. The Committee had before it the above standard as contained in Appendix II to ALINORM 81/29 and government comments received thereon in documents CX/CCP 81/6, CX/CCP 81/6-Add. 1 and Conference Room Documents Nos. 2 and 3 (Comments from the Federal Republic of Germany and Egypt). The Committee also agreed to discuss CX/CCP 81/7 - Definitions for Use in Codex Standard for Wheat Flour - which had been prepared by Dr. N.L. Kent of the UK taking into account information supplied by the Federal Republic of Germany. The Committee agreed to make use of these definitions as appropriate in the course of going through the standard. The Committee expressed its appreciation for the paper and decided to append it to the Report. The Committee took also note of a declaration of the delegation of the Netherlands, speaking on behalf of the Member States of the EEC, in which the delegation recalled the principles of an EEC declaration presented to the previous session of this Committee and reaffirming the continuing interest which the EEC attached to the elaboration of a standard for wheat flour. In view of the large number of comments received the Committee decided to consider the standard section by section.

Section 1 - Scope

65. A large number of written government comments, supported by many delegations present, proposed that the standard should apply to wheat flour for human consumption including its use in bakery and other food products. The Committee agreed to amend the Scope accordingly and also agreed to list examples of other food products, including noodles. Several delegations pointed out that in their countries pasta products were made from durum wheat only. The delegation of Japan stated, however, that in a number of Asian countries it was a widespread custom to prepare noodles from soft or hard wheat. The delegation of Japan felt that, since the standard was a worldwide standard, reference to noodles should be included among the list of examples in Section 1. The Committee agreed to place the reference to noodles in square brackets.

66. The Committee also agreed that the Scope Section should clearly indicate to which products the standard would not apply. The Committee agreed to the following text of Section 1:

"1. Scope

1.1 This standard applied to wheat flour for human consumption milled from common wheat, Triticum aestivum L., or club wheat, Triticum compactum Host., or mixtures thereof which are prepackaged ready for sale to the consumer or destined for use in other food products including the manufacture of e.g., bread, biscuits, cakes and [noodles].

1.2 It does not apply:

- to any product milled from durum wheat (Triticum durum) singly or in combination with other wheat;
- to meal, whole-meal, whole-wheat flour or semolina (farina) milled from common wheat (Triticum aestivum L.), or club wheat (Triticum compactum Host.), or mixtures thereof;
- to wheat flour destined for use as a brewing adjunct or for the manufacture of starch and/or gluten;
- to wheat flour for non-food industrial use;
- to wheat flour which is processed beyond the normal milling process."

Description

67. It was pointed out that Section 2.1 was dealing with a product definition and the Committee agreed to introduce product definition as a new sub-heading. The Committee fully discussed the different types of wheat flour depending on their content of bran and germ, and decided that all wheat flours should be included in the standard with the exception of whole wheat flour (milled whole grains). The Committee reconfirmed its view that meals and whole meals were outside the Scope of the standard and agreed to the following product definition:

"2.1 Product Definition

2.1.1 Wheat flour is the product prepared from grain of common wheat Triticum aestivum L., or club wheat, Triticum compactum Host., or mixtures thereof, by grinding or milling processes in which the bran and germ are partly removed and the remainder is comminuted to a suitable degree of fineness."

The Committee also agreed that there might be need to include in the standard specific quality factors for different types of wheat flour and that this should be done within the section for Essential Composition and Quality Factors.

68. The Committee considered the need for additional definitions for certain special types of wheat flours. (See Sections 2.2 to 2.9). The Committee agreed with the opinion that the flours defined in those sections were flours processed beyond the usual milling process and were excluded from the scope of the standard. The Committee decided to delete Sections 2.2 to 2.9.

Essential Composition and Quality Factors

69. The Committee examined Section 3.1 - Essential Composition, which dealt with certain requirements for wheat grains. The Committee also noted that another provision, namely 6.2, contained additional requirements for the raw material. It was questioned whether there was a need to have these detailed provisions in view of the fact that quality requirements for the wheat flours were included in the standard. The Committee decided that this section should be called: Raw Materials, and that the text of Sections 3.1.1 and 6.2 should be deleted except for the following provision:

"3.1.1 The wheat from which the flour is milled shall be of sound and marketable quality."

70. The Committee agreed to rearrange the other provisions of Sections 3 to follow the usual sequence established in Codex standards, i.e., to list quality factors separated under general and specific requirements and these to precede optional ingredients.

71. The Committee agreed to rearrange Sections 3.4.1, 3.4.2 and 3.4.4 to be listed as follows:

"3.2 Quality Factors - General

3.2.1 The wheat flour and any added ingredients shall be clean, safe, suitable and of good quality.

3.2.2 All processing of the wheat, including drying, milling and other treatment of the wheat, intermediate milling products and milled flour, shall be carried out in a manner that:

- (a) minimizes loss of nutritive value, particularly protein quality;
- (b) avoids undesirable changes in technological properties of the flour."

Several delegations pointed out that there were other technologies to destroy insect or mite infestation and these should not be excluded from the standard. It was also pointed out that it would be more realistic to require the wheat flours to be practically free from insect infestation. The Committee was of the opinion that more information on this matter should be required from governments and placed Section 3.2.3 in square brackets:

"3.2.3 After milling and before packing and despatch, the flour should be entoleted to destroy any insect or mite infestation which might be present."

72. The Committee agreed that Sections 3.1.2 to 3.1.9 and 3.4.3 should be discussed under the heading: Quality Factors - Specific.

73. Several delegations expressed the view that the figure of 0.9% m/m for ash was not satisfactory. The delegation of the United Kingdom drew attention to the amended scope and definitions which included a whole range of wheat flours, including those which were of high extraction and considered that the maximum figure for ash content should be therefore 1.5% m/m. Other delegations - Spain, India and Australia - suggested that ash content should be related to individual flour types rather than prescribing an overall limit which in their opinion was rather high. The figures cited for wheat flour of low extraction rate ranged from 0.55 to 1.0% m/m. The Committee could not reach a conclusion and decided that more information was required from governments on the manner in which this provision should be expressed and on the actual limits. The Section 3.1.3 was placed in square brackets and renumbered 3.3.2.

74. The Committee agreed with the proposal to delete Section 3.1.4 for acid insoluble ash. It was also decided to delete Section 3.1.5 on crude fibre content since it was considered not necessary to retain this provision in view of the intention to prescribe maximum limits for ash content.

75. Several delegations wished to have a more precise term to substitute for "Acidity" in Section 3.1.6. The acidity value was related to the content of the fatty acids in the wheat flour. The Committee agreed that Section 3.1.6 should be headed "Fat Acidity Value". The Committee further decided that this matter should not be left to the legislation of the country in which the product was sold and decided to introduce a maximum level for fat acidity value. To prescribe a maximum level, however, more information was needed from governments.

76. It was proposed to amend the value for protein content to read 7.0% in Section 3.1.7, and to delete the reference to air-classified flour. The Committee agreed with this proposal.

77. It was further proposed and agreed to delete reference to wet gluten content in Section 3.1.8.

78. In connection with the discussion of Alpha-amylase activity, several delegations expressed the view that one determination only for 7 grammes of the product would be more appropriate. It was pointed out that the falling number determined in 7 grammes could be slightly higher (up to 600) or lower (about 150). The Committee agreed to place the whole Section 3.1.9 in square brackets and to request further comments from governments, having regard to the fact that the standard under elaboration was a minimum standard.

79. The Committee agreed to increase the maximum limit for moisture content from 13% to 15% m/m and to place this figure in square brackets.

80. The Committee agreed that technological specifications should not form part of the standard and decided that consideration of a need for a code of practice or guidelines for speciality flours would be discussed at a later session.

81. With regard to Section 3.3 - Optional Ingredients, the Committee agreed that reference to raising agents should be deleted as a consequence of the amendment of the scope deleting specially treated flours. Furthermore, lecithin should be discussed in connection with food additives. The Committee was of the opinion that bean (*vicia faba*) and soy flours should be deleted from this section. However, if these substances were used for enzymatic purpose, further discussion would take place in connection with Section 4. The Committee further agreed to make the provision for gluten more specific by adding "vital" wheat gluten.

82. It was pointed out that, as in other cases, vitaminization and addition of minerals and specific amino acids should be left to legislation of individual countries since the addition of specific substances should be in accordance with the individual requirements of target groups of the population and thus a matter of national food policy. The Committee agreed to include reference to specific amino acids in provision 3.4.2.

83. The Committee agreed to delete Section 3.5.2 concerning instantized flour which was outside the scope of the standard.

Section 4 - Food Additives

84. It was agreed that the use of food additives shall not be left to national legislation but that additives and relevant maximum limits should be included in the standard. The Committee agreed that it was not necessary to have provisions for emulsifiers as these were usually added to flour when it was used as an ingredient in other foods.

85. With regard to flour treatment agents, those listed under Section 4.2.1, had been evaluated for the safety as flour treatment agents and therefore it would be a matter for the Committee as to which of these should be included in the standard. It was also noted that the other additives mentioned in Section 4.2.2 had also been evaluated by JECFA but not specifically for use in flour. The delegations of the United Kingdom and the United States drew attention to the fact that the JECFA list had been drawn up sometime ago and may now be out of date. They suggested that certain amendments were required. The Committee agreed to include the list evaluated by JECFA together with additional flour treatment agents put forward by other delegations. The Committee

further agreed that governments be required to submit up-to-date information for all the treatment agents on technological justification, maximum level of use and toxicity.

86. A number of delegations, including those of Spain, Switzerland and Italy, stated that in their countries only L-ascorbic acid was permitted as a flour treatment agent.

87. It was agreed to amend the section on enzymes to provide for the addition of soya flour and bean flour derived from vicia faba. (Section 4.3). The delegation of Spain wished to include as flour treatment agent monocalcium-phosphate up to 2000 mg/kg. The Committee agreed with this proposal.

Section 5 - Contaminants

88. The Committee agreed to bring this section into line with the Committee's decision regarding the contaminant section in the standard for maize (corn).

Section 6 - Hygiene

89. The Committee agreed that this section should be revised and brought into line with the revised text of the relevant section in the standard for maize (corn). However, it was pointed out that the present Section 6.3(c) contained a specific requirement for wheat flour relating to the absence of other poisonous or deleterious substances; i.e. toxins derived from poisonous seeds or ergot. Section 6.3(c) was therefore retained.

Section 7 - Packaging

90. The Committee agreed to use the standard wording for packaging already adopted in other Codex standards.

Section 8 - Labelling

91. At the request of the Committee the delegation of Australia undertook to recast this section taking into account the amendments agreed upon in the other sections of the standard. In addition the section was reworded in the standardized format of other adopted Codex standards.

92. The delegation of the Netherlands wished to place on record that in the standard for wheat flour as well as in the standard for maize the section on "Country of Origin" (Section 8.5) should be the same as that in the General Standard, i.e. it should require the declaration of the country of origin only if its omission would mislead the consumer. He stated that this would be in accordance with intra-community practice of the EEC.

93. It was also pointed out. that the Labelling Section should contain a specific provision concerning non-retail containers, which would have to be elaborated.

94. The Secretariat undertook to report to the next session of the Committee on a number of areas currently under consideration of the Committee on Food labelling; such as the Guidelines on Nutrition Labelling, on Labelling of Non-retail Containers and the revision of the General Standard for the Labelling of Prepackaged Foods (CAC/RS 1-1969).

95. Attention of the Committee was drawn to provision 8.8.1 on date marking which had yet to be elaborated. It was pointed out that the section on storage instructions would have to be developed depending on the Committee's decision on date marking. The Committee decided to place both provisions in square brackets and to request governments to comment on this matter.

Section 9 - Methods of Analysis and Sampling

96. The Secretariat revised this section to take into account any additional information which had been provided by governments and interested international organizations. The delegation of the Netherlands was of the opinion that none of the methods listed in 9.3 (Determination of Granularity) was suitable and that more information on this matter was needed. The observer from ICC stated that a method specific for wheat flour was currently being developed. The delegation of France indicated that a specific method for the determination of fat acidity value was under consideration by ISO (Ref. ISO/TC 34 SC 4 [N 387 F] [DP 7305]). The Committee examined the revised draft and decided to place the whole section in square brackets, recognizing that delegations present were not in a position to consider the provisions contained in Section 9 without further consultations with their governments.

Status of the Standard

97. The Committee decided to advance the proposed draft standard for wheat flour to Step 5 of the procedure. The revised text of the Proposed Draft Standard for Wheat Flour is contained in Appendix III to this report.

CONSIDERATION OF PROPOSED DRAFT STANDARDS FOR WHOLE MAIZE MEALS AND DEGERMED MAIZE MEALS AND GRITS

98. The Committee had before it the above mentioned standards as prepared by the delegation of the United States (CX/CCP 81/8). The Committee agreed that these were well prepared first drafts consistent with the Codex format and decided to advance them to Step 3 for a first round of government comments. The standards are contained in Appendices TV and V to this report.

99. The Committee recalled that it had requested specific comments on the above standards for the Coordinating Committee for Africa and noted that this matter was before the forthcoming session of that Coordinating Committee.

CONSIDERATION OF NEED FOR CODEX STANDARDS FOR CERTAIN CEREALS AND CEREAL PRODUCTS

100. The Committee had before it some government observations concerning: (a) the conclusions of the first session of the committee in general; (b) on semolina and (c) on milled rice (CX/CCP 81/9-Part II, Add. I and II and Conference Room Documents Nos. 2 and 3 (Federal Republic of Germany and Egypt) the Committee noted that due to the timing of sessions, the comments from the Coordinating Committees for Africa and Asia would be available only for the next session of this Committee. The Second Session of the Coordinating Committee for Latin America had given consideration to these matters; it had expressed, however, the view that more information from within the region was necessary before comments could be submitted to this Committee.

101. The Committee noted that the few written comments received were in general in agreement with the conclusions of the first session. The delegation of Mexico stated after further consideration of the report of the first session that it would be important to elaborate Codex Standards for wheat, sorghum, milled rice and beans (black and coloured dried beans).¹ The Committee was informed that a working paper on the need for Codex Standards for pulses or dry legumes was being considered by the forthcoming session of the Commission. The Secretariat was instructed to report back on this matter to the Committee at its next session.

1 During the adoption the delegations of Guatemala, Ecuador, Panama, Venezuela and Egypt indicated their support for the views expressed by the delegation of Mexico. Also at that time, the delegations of Argentina, Australia, Canada, Thailand and the United States indicated that they were not in agreement with the views expressed by the delegation of Mexico concerning the need for standards for one or more of the products mentioned by Mexico.

102. The Committee recalled also that it had not been able to decide whether there was a need for a Codex Standard for Semolina and that therefore more data on this product had been requested from governments having regard, in particular, to the work priority criteria of the Codex Alimentarius Commission. The Committee noted that information had been submitted by only a small number of countries and that also the comments from the Coordinating Committee for Africa would be submitted to the next session only. The Committee decided therefore that the Circular Letter accompanying this report should repeat the request for data for semolina and that the Secretariat should prepare a brief background paper on semolina for their consideration at the next session, taking into account all comments available.

103. The Committee agreed to follow the same procedure for Milled Rice as that outlined for semolina above, having regard also to comments from the other Coordinating Committees.

104. The Committee noted that it would have at its next session to consider the following principal subject matters:

1. Draft Standard for Wheat Flour.
2. Draft Standard for Whole Maize Meals.
3. Draft Standard for Degermed Maize Meals and Grits.
4. Background paper on Semolina,
5. Need for Standard for Milled Rice having regard to comments from Coordinating Committees and Governments.
6. Views on the need for Standards and Codes of Practice for Cereals and Cereal Products.

DATE AND PLACE OF NEXT SESSION

105. The Committee was informed that the Third Session of the Committee would be held from 25 to 29 October 1982 in Washington, D.C.

OPENING REMARKS

By

Dr. Kenneth A. Gilles

Administrator-Designate
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I wish to welcome you today to Washington and the 2nd Session of the Codex Committee on Cereals and Cereal Products. Speaking for the United States, I can tell you we feel this Committee may turn out to be the most significant of the many Committees under the umbrella of the Joint FAO/WHO Food Standards Programme. The subject you will discuss, cereals and cereal products, is of critical importance to every nation on earth. Many people consider cereals and cereal products to be the most singularly important group of the world's foodstuffs. In this time of rising populations, production of, and international trade in, cereals and cereal products become increasingly important and impacts on every individual on this planet. This is why your stated goals of facilitating international trade and protecting the consumer are so laudable.

In the worldwide battle against hunger we must not allow frivolous technicalities to prevent movement of foodstuffs from areas of surplus to areas of need. The person with an empty stomach cares little whether his food has 5.9 or 6.0 percent protein or fat; however, he does expect his food to be wholesome and free from contamination, which should be our concern too.

We would be less than realistic if we did not recognize the pull and tug of producers, consumers, importers-exporters, aligned-nonaligned, developed-developing, be they individuals or countries, and the impact they will have on the work of this Committee. However, as you go about the business of developing worldwide minimum standards for cereals and cereal products, I urge you to keep asking yourselves the questions: "Will this requirement assure needed protection?"; "Is this requirement going to facilitate trade?"; "Is this requirement going to present an unnecessary technical barrier to trade?".

The task that has been set for you is a monumental one. One that may require a decade or more of effort but one that when successfully completed will be of incalculable value to the world community. Not wanting to hold you back from this endeavour any longer, I wish you good luck in this important work. It has been a pleasure to be with you during this opening Session.

ALINORM 81/29A
APPENDIX I

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DRAFT STANDARD FOR MAIZE (CORK)
(ADVANCED TO STEP 8)

1. SCOPE

This standard shall apply to maize for direct human consumption, i.e., ready for its intended use as human food, presented in packaged form or sold loose from the package directly to the consumer. This standard specifies requirements for whole grain, shelled dent maize (*Zea mays indentata* L.) and/or shelled flint maize (*Zea mays indurata* L.) or their hybrids. It does not apply to processed maize.

2. DESCRIPTION

2.1 Product Definition

Maize is the shelled grains of the species defined in the scope. 2.2. Presentation

2.2.1 Maize may be presented as yellow, white, or red, or a mixture of these colors.

2.2.1.1 Yellow maize may contain not more than 5.0 percent by weight of maize of other colors. Maize grains which are yellow and/or light red in color are considered to be yellow maize. Yellow maize also means maize grains which are yellow and dark red in color, provided the dark red color covers less than 50 percent of the surface of the grain.

2.2.1.2 White maize may contain not more than 2.0 percent by weight of maize of other colors. Maize grains which are white and/or light pink in color are considered to be white maize. White maize also means maize grains which are white and pink in color, provided the pink color covers less than 50 percent of the surface of the grain.

2.2.1.3 Red maize may contain not more than 5.0 percent by weight of maize of other colors. Maize grains which are pink and white or dark red and yellow in color are considered to be red maize, provided the pink or dark red color covers 50 percent or more of the surface of the grain.

2.2.1.4 Mixed maize includes maize not falling into the classes of white, yellow or red maize as defined in 2.2.1.1 to 2.2.1.3.

2.2.2 Maize also may be presented as flint or dent or mixtures thereof.

2.2.2.1 Flint maize includes maize of any color which consists of 95 percent or more by weight of grains of flint maize.

2.2.2.2 Dent maize includes maize of any color which consists of 95 percent or more by weight of grains of dent maize.

2.2.2.3 Flint and dent maize includes maize of any color which consists of more than 5.0 percent but less than 95.0 percent of flint maize.

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 General Requirements

3.1.1 Maize grains shall not contain any abnormal or foreign odour as determined from samples representative of the lot.

3.1.2 Maize grains shall be of a reasonably uniform colour according to type, be whole, clean and be practically free from impurities and insects.

3.2. Adulteration

3.2.1 Lots of maize grains shall be free from adulteration.

3.2.2 The term "adulteration" in this context covers alteration of the composition of maize by any means whatsoever so that the resulting mixture or combination is either not of the nature prescribed, or its quality is injuriously affected or its bulk or mass altered.

3.3 Analytical Characteristics

3.3.1 Moisture Content

The moisture content of lots of maize grains shall not exceed 15.5% m/m as determined from samples representative of the lot.

3.4 Definition of Defects

3.4.1 Blemished grains means grains which are insect damaged, stained, diseased, discoloured, germinated, frost damaged, or otherwise materially damaged.

3.4.1.1 Insect damaged grains include those kernels with obvious weevil-bored holes or which have evidence of boring or tunneling, indicating the presence of insects, insect webbing or insect refuse.

3.4.1.2 Stained kernels are those whose natural color has been altered by external factors. This includes ground or weather damaged kernels, which may have dark stains or discolorations with a rough external appearance.

3.4.1.3 Diseased grains are distinctly discolored or rotting kernels which can usually be detected without opening the kernel for examination, and include those kernels affected by any type of mold, regardless of the amount of mold. Also, all kernels with dead, discolored germs are considered damage.

3.4.1.4 Discolored kernels include those materially discolored by excessive heat, including that caused by excessive respiration (heat damage) and dried damaged kernels. Kernels may appear darkened, wrinkled, blistered, puffed or swollen, often with discolored, damaged germs. The seed coat may be peeling or may have peeled off completely, giving kernels a checked appearance.

3.4.1.5 Germinated kernels are those kernels showing visible signs of sprouting, such as cracked seed coats through which a sprout has emerged or is just beginning to emerge.

3.4.1.6 Frost damaged kernels may appear bleached or blistered and the seed coat may be peeling. Germs may appear dead or discolored.

3.4.2 Broken Grains and Extraneous Vegetable Matter

This is defined as all grains and pieces of grains of maize and all material other than maize which will pass readily through a 12/64 inch (A.75 mm) sieve, and all material other than maize which remains in the sieved sample.

3.4.2.1 A 12/64 inch (4.75 mm) sieve is an aluminum sieve 0.0319 inch (0.8 mm) thick perforated with round holes 0.1875 (12/64) inch (4.75 mm) in diameter, which are 1/4 inch (6.35 mm) from center to center, The perforations in each row shall be staggered in relation to the adjacent row.

3.4.2.2 Material passing through the 12/64 inch (4.75 mm) sieve may be reviewed and adjusted by hand should it appear that this material consists of 25 percent or more of small, unbroken grains. Small, unbroken grains (i.e., those which have not been broken

or chipped beyond the pericarp and horny endosperm, or in the embryo area) shall be added to the maize grains remaining on top of the 12/64 inch (4.75 mm) sieve if this adjustment is made,

3.4.3 Filth. This means any foreign matter, organic or inorganic which adversely affects the appearance and quality of the maize.

3.5 Tolerance for Defects

Based on a sample, the product shall have not more than the following:

3.5.1 Blemished grains----- 7% m/m
-----Including-----

3.5.1.1 Discoloured grains ----- 0.5% m/m

3.5.2 Broken grains and extraneous vegetable matter----- 6% m/m

3.5.3 Filth----- 0.5% m/m

3.5.4 Toxic or noxious seeds - maize shall be free from toxic or noxious seeds in amounts which may represent a hazard to health

4. CONTAMINANTS (to be endorsed by the Codex Committee on Food Additives)

4.1 If pesticides and other permitted chemicals are used to control insects, rodents and other pests, the greatest care must be taken in the choice and in the technique of their application to avoid incurring any risk of tainting or the addition of toxic residues to the maize grains.

4.2 Maximum residue limits for pesticides shall be those recommended by the Codex Alimentarius Commission.

4.3 Maize shall be free from heavy metals in amounts which may represent a hazard to health.

5. HYGIENE (to be endorsed by the Codex Committee on Food Hygiene)

5.1 It is recommended that the product covered by the provisions of the standard be prepared in accordance with the appropriate sections of the Recommended International Code of Practice - General Principles of Food Hygiene (Ref. No. CAC/RCP 1-1969 Revision 1).

5.2 To the extent possible in good manufacturing practice, including marketing and storage, the product shall be free from objectionable matter, having regard to the tolerances indicated in Section 3.5.

5.3 When tested by appropriate methods of sampling and examination, the product:

(a) Shall be free from micro-organisms in amounts which may represent a hazard to health.

(b) Shall not contain any substances originating from micro-organisms, particularly mycotoxins, in amounts which exceed the tolerances or criteria established by the official agency having jurisdiction.¹

¹ In accepting this standard, governments are requested to indicate the requirements in force in their countries.

6. PACKAGING

6.1 The product shall be packed in containers which will safeguard the hygienic and other qualities of the food.

6.2 The containers including packaging material shall be made only of substances which are safe and suitable for their intended use.

7. LABELLING (to be endorsed by the Codex Committee on Food Labelling)

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

7.1 The following information shall be given on the container:

7.2 THE NAME OF THE FOOD

7.2.1 The name of the food shall be maize or corn.²

² In accepting the Standard, governments are requested to indicate which term is required in their country.

7.2.2 In addition, the food may be designated with the appropriate terms indicated in Sections 2.2.1 and 2.2.2 provided the food complies with the requirements defined in Sections 2.2.1.1 to 2.2.1.4 and 2.2.2.1 to 2.2.2.3 respectively.

7.3 NET CONTENTS

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

7.4 NAME AND ADDRESS

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

7.5 COUNTRY OF ORIGIN

The country of origin of the food shall be declared.

7.6 LOT IDENTIFICATION

Each container (bag) shall be permanently marked in code or clear to identify the packer and the lot.

8. METHODS OF ANALYSIS AND SAMPLING (to be endorsed by the Codex Committee on Methods of Analysis)

The methods of analysis and sampling referred to hereunder are proposed to be used as international referee methods.

8.1 Moisture Content

The moisture content of lots of maize grains shall not exceed 15.5% m/m as determined from samples representative of the lot using testing methods as mutually agreed by the buyer and seller.¹

¹ One of the following methods is appropriate:

1. ISO 6540
2. ICC 135
3. AACC (Method 44-15A)
4. AOAC 14.063

8.2 Method of Sampling

It is recommended that sampling shall be in accordance with the International Organization for Standardization (ISO) Standard for Sampling of Cereals (as grains) 1969 (Ref. ISO/R 950-1969).

PROPOSED DRAFT STANDARD FOR WHEAT FLOUR
Advanced to Step 5

1. SCOPE

1.1 This standard applies to wheat flour for human consumption milled from common wheat, Triticum aestivum L., or club wheat, Triticum compactum Host., or mixtures thereof which are prepackaged ready for sale to the consumer or destined for use in other food products including the manufacture of e.g. bread, biscuits, cakes and [noodles].

1.2. It does not apply:

- to any product milled from durum wheat (Triticum durum Desf.) singly or in combination with other wheat;
- to meal, whole-meal, whole-wheat flour or semolina (farina) milled from common wheat (Triticum aestivum L.), or club wheat (Triticum compactum Host.) or mixtures thereof;
- to wheat flour destined for use as a brewing adjunct or for the manufacture of starch and/or gluten;
- to wheat flour for non-food industrial use;
- to wheat flour which is processed beyond the normal milling process.

2. DESCRIPTION

2.1 Product Definition

2.1.1 Wheat flour is the product prepared from grain of common wheat Triticum aestivum L., or club wheat, Triticum compactum Host., or mixtures thereof, by-grinding or milling processes in which the bran and germ are partly removed and the remainder is comminuted to a suitable degree of fineness.

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 Raw Material

3.1.1 The wheat from which the flour is milled shall be of sound and marketable quality.

3.2 Quality Factors-General

3.2.1 The wheat flour and any added ingredients shall be clean, safe, suitable and of good quality.

3.2.2 All processing of the wheat, including drying, milling and other treatment of the wheat, intermediate milling products and milled flour, shall be carried out in a manner that:

- (a) minimises loss of nutritive value, particularly protein quality,
- (b) avoids undesirable changes in technological properties of the flour.

3.2.3 After milling and before packing and despatch, the flour should be entoleted to [destroy any insect or mite infestation which might be present.]

3.2.4 To the extent possible in good manufacturing practice, the wheat flour shall be for from objectionable matter.

3.3 Quality Factors-Specific

3.3.1 Wheat flour shall conform to the following requirements:

3.3.2 Ash- The yield of ash upon incineration shall not exceed [%] on a drv weight basis. This requirement shall not apply to flour to which chalk (calcium carbonate) has been added.

3.3.3 Fat Acidity Value - The acid value should not exceed [].

3.3.4 Protein (N x 5.7) shall be not less than 7.0% on dry weight basis.

3.3.5 Alpha-amylase activity - The Falling Number of the flour shall be not lower than 120 when determined on a 5 g sample or 200 when determined on a 7 g sample. This requirement shall not apply to flour for making cakes or biscuits.

3.3.6 The moisture content of the product shall be governed by good manufacturing practice and shall be at such a level that the development of mustiness, moulds or other microorganisms is avoided, and the loss of nutritive value is minimized. In any case, the moisture content of the product should not exceed [15.0% m/m].

3.4 Optional Ingredients

3.4.1 The following ingredients may be added to flour:

- malted wheat flour or malted barley flour, in quantity not exceeding [0.75%] m/m,
- vital wheat gluten.

3.4.2 Nutrients - The addition of vitamins, minerals and specific amino acids shall be in conformity with the legislation of the country in which the product is sold.

3.5 Particle Size

3.5.1 When subjected to a standard sieving test, not less than 95% of the product shall pass through a sieve of 0.2 mm aperture size.

4. FOOD ADDITIVES (to be endorsed by the Codex Committee on Food Additives)

4.1 Flour Treatment Agents

	Maximum Levels
-L-Ascorbic acid	200 mg/kg
- Azodicarbonamide	45 mg/kg
- Benzoyl peroxide	40 mg/kg
- Chlorine dioxide	30 mg/kg
- Potassium bromate	20 mg/kg
- Stearoyl tartrate	500 mg/kg
- Chlorine	2,500 mg/kg
- L-cysteine hydrochloride	75 mg/kg
- Sulphur dioxide	200 mg/kg
- Sodium metabisulphite	[] mg/kg
- Oxides of nitrogen	[] mg/kg
- Nitrosyl chloride	[] mg/kg
- Propionic acid (and Na and Ca salts)	[] mg/kg
- Lactic acid	[] mg/kg
- Acetone peroxides	[] mg/kg
- Mono-calcium phosphate	2000 mg/kg

- Lecithin

2000 mg/kg

4.2 Enzymes

The addition of fungal or bacterial amylase and suitable proteolytic enzymes and soya and bean flour derived from vicia faba of suitable food quality is permitted.

5 CONTAMINANTS (to be endorsed by the Codex Committee on Food Additives)]

5.1 If pesticides and other permitted chemicals are used to control insects, rodents and other pests, the greatest care must be taken in the choice and in the technique of their application to avoid incurring any risk of tainting or the addition of toxic residues to the wheat flour.

5.1.1 Maximum residue limits for pesticides shall be those recommended by the Codex Alimentarius Commission,

5.2 Wheat flour shall be free from heavy metals in amounts which may represent a hazard to health.

6. HYGIENE (to be endorsed by the Codex Committee on Food Hygiene)

6.1 It is recommended that the product covered by the provisions of this standard should be prepared in accordance with the International Code of Hygienic Practice entitled "Recommended International Code of Practice, General Principles of Food Hygiene" recommended by the Codex Alimentarius Commission (CAC/RCP 1-1969, Rev. 1).

6.2 When tested by appropriate methods of sampling and examination, the flour:

- (a) shall be substantially free from pathogenic organisms;
- (b) shall be substantially free from any substances originating from micro-organisms which may represent a hazard to health; and
- (c) shall not contain any other poisonous or deleterious substances in amounts which may represent a hazard to health.

7. PACKAGING

7.1 The wheat flour shall be packed and transported in containers which will safeguard the hygienic, nutritional and technological qualities of the product.

7.2 The containers shall be made only of substances which are safe and suitable for their intended use. They should not impart any toxic substance or undesirable odour or flavour to the product. Where the Codex Alimentarius Commission has established a standard for any such substance used as packaging material, that standard shall apply.

8. LABELLING (to be endorsed by the Codex Committee on Food Labelling)

In addition to Sections 1, 2, 4 and 6 of the recommended International General Standard for the Labelling of Prepackaged Foods (Ref CAC/RS 1-10/09) the following provisions apply.

8.1 Name of the Food

8.1.1 The name of the food declared on the label shall be "wheat flour".

8.2 Listing of Ingredients

8.2.1 A complete list of ingredients shall be declared on the label in descending order of proportion in accordance with Section 3.2(c) of the Recommended International

General Standard for the labelling of Prepackaged Foods (CAC/RS 1-1969) except that in the case of added vitamins and added minerals these shall be arranged as separate groups for vitamins and minerals respectively and within these groups the vitamins and minerals need not be listed in descending order of proportion.

8.3 Declaration of Nutritive Value

If vitamins and/or minerals are added to the product for a purpose other than to replace nutrients lost in processing then the following information shall be given:

The total quantity in the final product of each vitamin and/or mineral added in accordance with Section 3.4.2 for 100 grammes of the food as sold for consumption.

8.4 Name and Address

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

8.5 Country of Origin

8.5.1 The country of origin of the product shall be declared.

8.5.2 When processing which changes the nature of the product is undergone in a second country, the country in which the processing is performed shall be declared to be the country of origin for the purposes of labelling.

8.6 Lot Identification

Each bulk consignment and each individual container of a packaged consignment shall be permanently marked in code or in clear to identify the producing mill and the lot.

8.7 Net Contents

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

8.8 Date Marking and Storage Instructions

8.8.1 [Date Marking - to be elaborated]

8.8.2 [Storage instructions shall appear on the label.]

8.9 Non-Retail Containers

(To be elaborated)

9. METHODS OF SAMPLING AND ANALYSIS (to be endorsed by the Codex Committee on Methods of Analysis)

The methods of sampling and analysis referred to hereunder are international referee methods.

9.1 Sampling

According to:

9.1.1 ISO 2170-1972 Cereals and Pulses - Sampling of Milled Products, or

- 9.1.2 ICC Standard 130: Sampling of Milled products (Semolinas, Flours, Agglomerated flours and By-products) or
- 9.1.3 ISO/DIS 6644 Cereals and Milled Products - Automatic Sampling by Mechanical Means (draft standard, under elaboration), or
- 9.1.4 ICC Standard 138: Mechanical sampling of milled products, (Semolinas, Flours, Agglomerated flours and By-products)(Draft Standard).
- 9.2 Determination of Moisture
According to;
- 9.2.1 ISO 712-1979 Cereals and Cereal Products - Determination of Moisture (Routine Method), or
- 9.2.2 ICC Standard 110/1: Determination of Moisture Content of Cereals and Cereal Products (Practical Method), or
- 9.2.3 AOAC Method 14.004, page 211, 13th Edition, 1980, or
- 9.3 Determination of Granularity
According to:
- 9.3.1 ISO 2591-1973 Test Sieving, or
- 9.3.2 ICC Standard 127: Determination of the Particle Size Distribution in Flour by the Andreasen Pipette Method
- 9.4 Determination of Ash
According to'
- 9.4.1 ISO 2171-1972 Cereals, Pulses and Derived Products – Determination of Ash, or
- 9.4.2 ICC Standard 104: Method for the Determination of Ash in Cereals and Cereal Products, or
- 9.4.3 AOAC Method 14,006 - 14.008, page 211, 13th Edition, 1980
- 9.5 Determination of Fat Acidity Value
- 9.5.1 According to AOAC Methods 14.070 thru 14.073 (Official Methods of Analysis of the AOAC, 13th Ed., 1980, page 220.)
- 9.6 Determination of Protein
According to:
- 9.6.1 ISO 1871-1975 Agricultural Food Products -General Directions for the Determination of Nitrogen by the Kjeldahl Method, or
- 9.6.2 Joint AOAC/ISO Method for the Determination of Total Nitrogen (Kjeldahl) (in preparation.) or
- 9.6.3 ICC Standard 105/1: Method for the Determination of Crude Protein, in Cereals and Cereal Products for Food and for Feed, or
- 9.6.4 AOAC Methods, 14.026, 2.005-2.057, page 214, 14 and 15, 13th Edition, 1980.
- 9.7 Determination of Alpha-amylase Activity
According to:
- 9.7.1 ISO 3093-1974 Cereals, Determination of Falling Number; or

9.7.2 ICC Standard 107: Determination of the "Falling Number" according to Hagberg-Perten as a Measure of the Degree of Alpha-Amylase Activity in Grain and Flour

9.8 Determination of Thiamine

According to:

9.8.1 the AOAC Methods 43.024 and 43.038 (Official Methods of Analysis of the AOAC, 12th Ed., 1975, pages 823-826); or

9.8.2 ICC Standard 117: Chemical Determination of Thiamine in Cereal Products.

9.8.3 ICC Standard 119: Rapid Method for the Determination of Thiamine in Enriched Flours and Enrichment Mixtures.

9.9 Determination of Riboflavin

9.9.1 According to the AOAC Methods 43.039 and 43.043 (Official Methods of Analysis of the AOAC, 12th Ed., 1975, pages 826-827).

9.10 Determination of Niacin

9.10.1 According to AOAC Methods 43.044-43.050 (Official Methods of Analysis of AOAC, 12th Ed., 1975, pages 82.7-829).

9.11 Determination of Iron

9.11.1 According to the AOAC Method 14.011 (Official Methods of Analysis of the AOAC, 12th Ed., 1975, page 223).

PROPOSED DRAFT STANDARD FOR WHOLE MAIZE MEAL

(Advanced to Step 3)

1. SCOPE

- 1.1 This standard applies to whole maize meal for human consumption milled from kernels of common maize (corn), Zea mays L.
- 1.2 This standard does not apply to degermed maize (corn) meal, enriched maize (corn) meal, maize (corn) flours, maize (corn) grits, quick grits, hominy grits, self-rising corn meals, bolted corn meals, corn flakes, and alkaline treated maize (corn) products.
- 1.3 This standard does not apply to maize (corn) meals for use as a brewing adjunct, to meals used for manufacturing of starch and any industrial use, nor to meal for use as an animal feed.

2. DESCRIPTION

- 2.1 Whole maize meal is the food prepared from fully mature, sound, ungerminated, whole kernels of maize, Zea mays L., cleaned from impurities, mold, seeds of weeds and other cereals, by a grinding process in which the entire grain is comminuted to a suitable degree of fineness to comply with 3.5.1. In its preparation coarse particles of the ground maize kernel may be separated, reground and recombined with all of the material from which they were separated.

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 Essential Composition

- 3.1.1 Whole maize meal shall conform to the following compositional requirement:

- 3.1.1.1 Ash content shall be not less than [1.2] percent and not more than [3.9] percent on a dry weight basis.

- 3.1.1.2 Crude fibre content shall be not less than [1.2] percent and not more than [3.5] percent on a dry weight basis.

- 3.1.1.3 Acidity (to be determined) .

- 3.1.1.4 Protein content (Nx6.25) shall be not less than [8] percent and not more than [14] percent on a dry weight basis.

- 3.1.1.5 Fat content shall be not less than [3.1] percent and not more than [5.7] percent on a dry weight basis.

- 3.2 Technological Specification (to be determined)

3.3 Optional Ingredients

- 3.3.1 The following ingredients may be added to whole maize meal: (to be determined)

3.4 Quality Factors

- 3.4.1 The whole maize meal and any added ingredients shall be clean, safe, suitable and of good quality.

- 3.4.2 All processing of the maize, including drying, milling and other-treatment of the maize, inter-mediate milling products and milled maize meal shall be carried out in a manner that:
- (a) minimizes loss of nutritive value, particularly protein quality,
 - (b) voids undesirable changes in technological properties of the whole maize meal.
- 3.4.3 The moisture content of the product shall be governed by good manufacturing practice and shall be at such a level that the development of mustiness, molds or other microorganisms is avoided, and the loss of nutritive value is minimized. In any case, the moisture content of the product shall not exceed [13.5%].
- 3.4.4 After milling and before packing and shipping for distribution, the whole maize meal should be properly treated to destroy any insect or mite infestation which might be present.

3.5 Granularity

- 3.5.1 When subjected to a standard sieving test, not less than 95 percent of the whole maize meal shall pass through a sieve of 1.7 mm aperture size, not less than 45 percent through a sieve of 0.71 mm aperture size, but not more than 35 percent through a sieve of 0.21 mm aperture size.

4. FOOD ADDITIVES

- 4.1 (To be determined).

5. CONTAMINANTS

5.1 Pesticide Residues

- 5.1.1 Maximum residue limits for pesticides shall be those recommended by the Codex Alimentarius Commission.

5.2 Other Contaminants

To the extent possible in good manufacturing practice, the whole maize meal shall be practically free from pharmacologically active substances such as toxin derived from poisonous weed seeds or ergot.

6. HYGIENE

- 6.1 To the extent possible in good manufacturing practice, the whole maize meal shall be free from objectionable matter.
- 6.2 The maize used for milling the whole maize meal shall be cleaned as well as good manufacturing practice allows, of insect bodies, insect parts and insect frass, of mites, and of rodent excreta pellets and rodent hairs. The premises where the milling process is carried out shall, so far as possible, be kept free from infestation with insects, mites and rodents.
- 6.3 When tested by appropriate methods of sampling and examination, to the extent possible in good manufacturing practice, the whole maize meal:
- (a) shall be free from pathogenic organisms;
 - (b) shall be free from any substances originating from microorganisms which may represent a hazard to health; and

(c) shall not contain any other poisonous or deleterious substances in amounts which may represent a hazard to health.

7. PACKAGING

7.1 The whole maize meal shall be packed and transported in containers which will safeguard the hygiene, nutritional and technological qualities of the product.

7.2 The containers shall be made only of substances which are safe and suitable for their intended use. They should not impart any toxic substance or undesirable odour or flavour to the product. Where the Codex Alimentarius Commission has established a standard for any such substance used as packaging material, that standard shall apply.

8. LABELING

In addition to Sections 1, 2, 4 and 6 of the General Standard for the Labeling and Prepackaged Foods (Ref. No.CAC/RS 1-1969) the following specific declarations shall be made:

8.1 Name of the Food

The name of the product described under Section 2.1 and complying with Section 3.1 of the standard shall be: "Whole Maize Meal" or "Whole Corn Meal".

8.2 List of Ingredients

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

8.3 Net Contents

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

8.4 Name and Address

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

8.5 Country of Origin

8.5.1 The country of origin of the product shall be declared if its omission would mislead or deceive the consumer.

8.5.2 When the product undergoes processing in a second country which changes its nature, the country in which the processing is performed shall be considered to be the country of origin for the purposes of labelling.

8.6 Lot Identification

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

8.7 Date Marking and Storage Instructions

8.7.1 The date of minimum durability of the product shall be declared in clear;

8.7.2 In addition to the date, any special conditions for the storage of food should be indicated if the validity of the date depends thereon.

9. METHODS OF SAMPLING AND ANALYSIS

The methods of sampling and analysis referred to hereunder are international referee methods (ISO/BIS) or Official Methods of Analysis of the AOAC, 13th edition, 1980. Copies of the Official Methods of Analysis of the Association of Official Analytical Chemists may be obtained from: Association of Official Analytical Chemists, P.O. Box 540, Benjamin Franklin Station, Washington, DC. 20044.

9.1 Sampling

9.1.1 According to ISO 2170-1972 Cereals and pulses - sampling of milled products. AOAC section 10.125 Sampling Cereal Adjuncts (also see section 12.092).

9.1.2 A draft standard for mechanical sampling is in preparation (ISO/DIS 6644 Cereals and milled products – automatic sampling by mechanical means). AOAC section 10.092, Sampling of Cereal adjuncts and section 14.001, wheat flour.

9.2 Determination of Moisture

According to ISO 712-1979 Cereals and cereal products - determination of moisture (routine method). AOAC section 10.131 corn grits and section 14.002-14.003, vacuum oven or section 14.004 air oven.

9.3 Determination of Granularity

According to ISO 2591-1973 Test sieving. AOAC section 10.128-10.129 corn grits (Re-Tap sieve machine).

9.4 Determination of Ash

According to ISO 2171-1972 Cereals, pulses and derived products - determination of ash. AOAC section 14.006, wheat flour.

9.5 Determination of Acidity

According to AOAC Methods 14.064-14.066.

9.6 Determination of Crude Fibre

According to ISO/DIS 549E Draft standard for agricultural food products - Determination of crude fibre content - general method, or ISO/DIS 6541 Draft Standard for agricultural food products Determination of crude fibre content - modified Scharrer method. AOAC section 10,145 cereal adjuncts; section 14.065, cereal and cereal products, (see 7.065, animal feed) .

9.7 Determination of Protein

9.7.1 According to ISO 1871-1975 Agricultural food products - General directions for the determination of nitrogen by the Kjeldahl method, or by AOAC method 14.068 or 14.069. Protein content is calculated by multiplying the nitrogen content by 6.25.

9.7.2 A joint AOAC/ISO method for the determination of total nitrogen (Kjeldahl) is in preparation.

9.8 Determination of Fat

According to the AOAC section 14.067, (see 7.056, animal feed).

PROPOSED DRAFT STANDARD FOR DEGERMED MAIZE MEAL
AND MAIZE GRITS

(Advanced to Step 3)

1. SCOPE

- 1.1 This standard applies to degermed maize meal and maize grits for human consumption milled from kernels of common maize (corn), Zea mays L.
- 1.2 This standard does not apply to whole maize (corn) meal, corn flours, quick grits, hominy grits, self-rising corn meals, enriched maize (corn) meals, enriched maize (corn) grits, bolted corn meals, corn flakes, and alkaline treated maize (corn) products.
- 1.3 This standard does not apply to maize (corn) meals for use as a brewing adjunct, to meals used for manufacturing of starch and any industrial use, nor to meal for use as an animal feed.

2. DESCRIPTION

- 2.1 Degermed maize meal is the food prepared from fully mature, sound, degerminated kernels of maize, Zea mays L., cleaned from impurities, mold, seeds of weeds and other cereals, by a grinding process in which the grain is comminuted to a suitable degree of fineness to comply with 3-5.1 and from which bran and germ are removed. In its preparation, coarse particles of the ground maize kernel may be separated, reground and recombined with all of the material from which they were separated.
- 2.2 Degermed maize grits is the food prepared from fully mature, sound, ungerminated, kernels of maize, Zea mays L., cleaned from impurities, mold, seeds of weeds and other cereals, by a grinding process in which the grain is comminuted to a suitable degree of fineness to comply with 3.5.2 and from which bran and germ are removed.

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 Essential Composition

- 3.1.1 Degermed maize meal and maize grits shall conform to the following compositional requirement:
 - 3.1.1.1 Ash content shall be not less than [0.3] percent and not more than [0.7] percent on a dry weight basis.
 - 3.1.1.2 Crude fibre content shall not be less than [0.3] percent and not more than [1.2] percent on a dry weight basis.
 - 3.1.1.3 Acidity (to be determined)
 - 3.1.1.4 Protein content (Nx6.25) shall be not less than [7.9] percent and not more than 9.0 percent on a dry weight basis.
 - 3.1.1.5 Fat content shall be not less than [0.8] percent and not more than [2.25] percent on a dry weight basis.

3.2 Technological Specification (to be determined)

3.3 Optional Ingredients

3.3.1 The following ingredients may be added to degermed maize meal and maize grits: (to be determined)

3.4 Quality Factors

3.4.1 The degermed maize meal, maize grits and any added ingredients shall be clean, safe, suitable and of good quality.

3.4.2 All processing of the maize, including drying, milling and other treatment of the maize, intermediate milling products, milled degermed maize meal and maize grits shall be carried out in a manner that:

(a) minimizes loss of nutritive value, particularly protein quality,

(b) voids undesirable changes in technological properties of the degermed maize meal and the maize grits.

3.4.3 The moisture content of the product shall be governed by good manufacturing practice and shall be at such a level that the development of mustiness, molds or other microorganisms is avoided, and the loss of nutritive value is minimized. In any case, the moisture content of the product should not exceed [13.5%].

3.4.4 After milling and before packing and shipping for distribution, the degermed maize meal and maize grits should be properly treated to destroy any insect or mite infestation which might be present.

3.5 Granularity

3.5.1 When subjected to a standard sieving test, not less than 95 percent of the degermed maize meal shall pass through a sieve of 0.85 mm aperture size, not less than 45 percent through a sieve of 0.71 mm aperture size, but not more than 25 percent through a sieve of 0.21 mm aperture size.

3.5.2 When subjected to a standard sieving test, not less than 95 percent of the maize grits shall pass through a sieve of 2.00 mm aperture size but not more than 20 percent through a sieve of 0.71 mm aperture size.

4. FOOD ADDITIVES

4.1 (To be determined).

5. CONTAMINANTS

5.1 Pesticide Residues

5.1.1 Maximum residue limits for pesticides shall be those recommended by the Codex Alimentarius Commission.

5.2 Other Contaminants

To the extent possible in good manufacturing practice, the degermed maize meal and maize grits shall be practically free from pharmacologically active substances such as toxin derived from poisonous weed seeds or ergot.

6. HYGIENE

6.1 To the extent possible in good manufacturing practice, the degermed maize meal and maize grits shall be free from objectionable matter.

6.2 The maize used for milling the degermed maize meal and maize grits shall be

cleaned, as well as good manufacturing practice allows, of insect bodies, insect parts and insect frass, of mites, and of rodent excreta pellets and rodent hairs. The premises where the milling process is carried out shall, so far as possible, be kept free from infestation with insects, mites and rodents.

- 6.3 When tested by appropriate methods of sampling and examination, to the extent possible *in good* manufacturing practice, the degermed maize meal and maize grits:
- (a) shall be free from pathogenic organisms;
 - (b) shall be free from any substances originating from Microorganisms which may represent a hazard to health; *and*
 - (c) shall not contain any other poisonous or deleterious, substances in amounts which may represent a hazard to health.

7. PACKAGING

- 7.1 The degermed maize meal and maize grits shall be packed and transported in containers which will safeguard the hygiene, nutritional and technological qualities of the product.
- 7.2 The containers shall be made only of substances which are safe and suitable for their intended use. They should not impart any toxic- substance or undesirable odour or flavour to the product. Where the Codex Alimentarius Commission has established a standard for any such substance used as packaging material, that standard shall apply.

8. LABELING

In addition to Sections 1, 2, 4 and 6 of the General Standard for the Labeling of Prepackaged Foods (Ref, No. CAC/RS 1-1969) the following specific declarations shall be made:

8.1 Name of the Food

- 8.1.1 The name of the product described under Section 2.1 and complying with Section 3.1 of the standard shall be: "Degermed Maize Meal" or "Degermed Corn Meal".
- 8.1.2 The name of the product described under Section 2.2 and complying with Section 3.1 of the standard shall be: "Degermed Maize Grits" or "Degermed Corn Grits"

8.2 List of Ingredients

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

8.3 Net Contents

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

8.4 Name and Address

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

8.5 Country of Origin

- 8.5.1 The country of origin of the product shall be declared if its omission would mislead or deceive the consumer.
- 8.5.2 When the product undergoes processing in a second country which changes its nature, the country in which the processing is performed shall be considered to be the country of origin for the purposes of labeling.

8.6 Lot Identification

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

8.7 Date Working and Storage Instructions

- 8.7.1 The date of minimum durability of the product shall be declared in clear.
- 8.7.2 In addition to the date, any special conditions for the storage of the food should be indicated if the Validity of the date depends thereon.

9. METHODS OF SAMPLING AND ANALYSIS

The methods of sampling and analysis referred to hereunder are international referee methods (ISO/DIS) or Official Methods of Analysis of the AOAC, 13th edition, 1980. Copies of the Official Methods of Analysis of the Association of Official Analytical Chemists may be obtained *from*: Association of Official Analytical Chemists, P.O. Box 540. Benjamin franklin Station, Washington, DC 20044.

9.1 Sampling

- 9.1.1 According to ISO 2170-1972 Cereals and pulses - sampling of milled products. AOAC section 10.125 Sampling Cereal Adjuncts (also see section 10.092)
- 9.1.2 A draft standard on mechanical sampling is in preparation (ISO/DIS 6644 Cereals and milled products - automatic sampling by mechanical means). AOAC section 10,092, Sampling of Cereal adjuncts and section 14.001, wheat flour.

9.2 Determination of Moisture

According to ISO 712-1979 Cereals and cereal products - determination of moisture (routine method). AOAC section 10.131, corn grits and section 14.001-14.003, vacuum oven or section 14,004 air oven.

9.3 Determination of Granularity

According to ISO 2591-1973 Test sieving. AOAC section 10.128-10.129 corn grits (Ro-Tap sieve machine),

9.4 Determination of Ash

According to ISO 2171-1972 Cereals, pulses and derived products - determination of ash. AOAC section 14.006, wheat flour.

9.5 Determination of Acidity

According to ACAC section 14.0642.14.066.

9.6 Determination of Crude Fibre

According to ISO/DIS 549E Draft standard for agricultural food products - Determination of crude fibre content - general method, or ISO/DIS 6541 Draft Standard for agricultural food products - Determination of crude fibre content - modified Scharrer method. AOAC section 10.145 cereal adjuncts; section 14.065, cereal *and* cereal products, (see 7.065, animal feeds) .

9.7 Determination of Protein

9.7.1 According to ISO 1871-1975 Agricultural food products - General directions for the determination of nitrogen by the Kjeldahl method, or by AOAC section 14.068 or 14.069. Protein content is calculated by multiplying the nitrogen content by 6.25.

9.7.2 A joint AOAC/ISO method for the determination of total nitrogen (Kjeldahl) is in preparation.

9.8 Determination of Fat

According to the AOAC section 14.067, (see 7.056, animal feed).

ALINORM 81/29A

APPENDIX VI

DEFINITIONS FOR USE IN CODEX STANDARD FOR WHEAT FLOUR
(CX/CCP 81/7)

1. Air Classification

Particle size separation effected by subjecting a stream of flour to centrifugal force in opposition to an air current.

2. Aleurone Layer

The outermost cellular layer or layers of grain, rich in a globulin-type protein and containing abundant particles (known as aleurone "grains") in which phytic acid is present.

3. Bakery Products

Products made by baking a dough, paste or slurry consisting of flour and other ingredients. Bakery products are exemplified by bread, cakes, biscuits, etc.

4. Bean Flour

Flour derived from species of the genera Dolichos, Phaseolus and Vicia.

Note: The ISO document "Nomenclature for cereals, millets, pulses and other food grains" (ISO/TC 34/SC 4 N 227) lists the following species of beans:

Dolichos lablab LINNAEUS (hyacinth bean, lablab bean, bonavista bean)

Phaseolus aconitifolius N.J. Jacquin (mat bean, moth bean)

P. aureus ROXBURGH (mung bean)

P. coccineus LINNAEUS (runner bean)

P. lunatus LINNAEUS (lima bean, butter bean)

P. vulgaris LINNAEUS (haricot bean, kidney bean, pea bean, navy bean, pinto bean, Dutch brown bean)

Vicia faba LINNAEUS (broad bean, filed bean)

5. Bran

The tissues (pericarp and seed coats) which form the outer protective layers of grain and which surround the germ and endosperm. The term is commonly applied to the by-product consisting largely of the outer layers obtained from the grinding or milling of cleaned grain.

6. Cereal Brewing Adjunct

Any predominantly cereal-based starchy material, other than malted grains, used in the brewing process.

Note: Para 1.3 of the proposed Standard for Wheat Flour requires insertion of "cereal" before "brewing adjunct".

7. Club Wheat

Wheat varieties of the species Triticum compactum HOSTIANUM. Term also commonly applied to the grain of T. compactum HOST.

8. Common Wheat

Wheat varieties of the species Triticum aestivum LINNAEUS. Term also commonly applied to the grain of T. aestivum L.

Note: Common or bread wheat is known as "soft wheat" in some countries, e.g. In France, where it is called "blé tendre".

9. Durum Wheat

Wheat varieties of the species Triticum durum DESFONTAINES. Term also commonly applied to the grain of T. durum DESF.

Note: Durum wheat is known as "hard wheat" in some countries, e.g. France, where it is called "blé dur".

10. Embryo

The part of the germ of the grain which develops into the young plant,

11. Endosperm

The endosperm of grain comprises the starchy endosperm (q.v.) and the aleurone layer (q.v.).

12. Entoleter Flour

Flour treated in an entoleter - a machine in which a rotor, rotating at a speed of about 3000 revolutions per minute, throws the flour with considerable impact against the fixed casing of the machine.

13. Ergot

The sclerotia of Claviceps purpurea (FRIES) TULASNE; grain infected with C. purpurea (Fr.) Tul.

14. Farina see semolina.

15. Flour

The finely-comminuted product consisting largely of starchy endosperm which is derived from or separated during the grinding or milling of cleaned common wheat, club wheat or mixtures thereof. Flour does not include meal or wholemeal.

Note: Criteria such as particle size and yield of ash upon incineration might be included in a definition.

16. Flour for Bakery Use

Flour supplied to a commercial bakery.

17. Flour for Direct Human Consumption

Flour acquired by the ultimate consumer for any form of domestic use.

18. Flour for Industrial Use

Flour supplied for the manufacture of non-food end products and of food end products, excluding flour for bakery use.

19. Germ

The parts of the grain comprising the embryo (q.v.) and the scutellum (q.v.).

20. Gluten

A complex mixture consisting principally of proteinaceous substances (mainly gliadin and glutenin) which can be obtained as a firm elastic mass in a hydrated form by manipulating a flour/water dough under a stream of water.

21. Grain

Caryopses of cereals.

22. High Ratio Cake flour

Flour specially prepared for use in the production of cakes where the recipe requires a high ratio of sugar and Liquid to flour.

23. Impurities

Substances other than grain of unimpaired quality, as determined by I.C.C. Method No.102/1.

Note: Other names for impurities are. Besatz (FRG), dockage (USA), screenings (UK).

24. Malted barley Flour

The product which is derived from or separated during the milling or grinding of enzyme-active or enzyme-inactive, malted barley.

25. Malted Grain

Grain that has been steeped and allowed to germinate. It is, then heated and dried in order to arrest germination, and the malt culms removed. Depending on the severity of the heat treatment, malted grain can be obtained in either enzyme-active or enzyme-inactive form.

26. Malted Wheat Flour

The product which is derived from or separated during the milling or grinding of enzyme-active or enzyme-inactive malted wheat.

27. Meal

The product obtained by grinding or milling cleaned common wheat, club wheat or mixtures thereof with removal of some of the bran and germ. Meal has a larger average particle size and a wider range of particle sizes than those of flour.

Note: Criteria such as particle size and yield of ash upon incineration might be included in the definition.

28. Scutellum

The part of the germ of the grain which lies between the embryo and the endosperm.

29. Semolina (Farina)

The product obtained during the first stages (break system) of the milling of cleaned grain, consisting of coarse particles of starchy endosperm that have largely been freed from bran and germ.

Note 1: In the USA, the term "semolina" is restricted to a defined product obtained from durum wheat or red durum wheat. The similar product obtained from wheats other than durum wheat or red durum wheat is known as "farina" in the USA,

Note 2: Criteria such as particle size and yield of ash upon incineration might be included in the definition, e.g. the name "dunst" and "middlings" are given to semolina approaching the fineness and purity of white flour.

30. Soya Flour

The product obtained by grinding or pulverizing cleaned dehulled flaked soybeans, Glycine max LINNAEUS. Soya flour is available in full-fat, defatted, enzyme-active and enzyme-inactive forms.

31. Starch

The product consists principally of carbohydrate polymers composed almost exclusively of anhydro- -D-glucose- units and includes amylose and amylopectin or any mixture thereof. Starch occurs abundantly in the starchy endosperm in the form of spherical, ovoid or polygonal granules.

32. Starchy Endosperm

A cellular tissue in the grain containing reserve nutrients, principally starch and protein.

33. Ungerminated

No development of the plumule or primary root of the embryo.

34. Wheat

Plant of the family Gramineae, genus Triticum. Term also commonly applied to the grain of Triticum.

35. Wholemeal

The whole of the product obtained by grinding or milling cleaned common wheat, club wheat or mixtures thereof.

Note 1: Criteria such as yield of ash upon incineration might be included in the definition.

Note 2: The term "wholewheat" is generally reserved for the coarsest kind of wheat product in which many of the grains are little more than cracked open or crushed.

The following terms are defined by the method of analysis specified: ash, acid-insoluble ash, alpha-amylase activity, crude fibre, fat acidity, moisture content, particle size, protein, wet gluten.