codex alimentarius commission

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

WORLD HEALTH ORGANIZATION

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

ALINORM 81/29

CODEX ALIMENTARIUS COMMISSION
Fourteenth Session

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

Washington, D.C., 24-28 March 1980

Introduction

1. The Codex Committee on Cereals and Cereal Products held its First Session in Washington, D.C., from 24 to 28 March 1980, by courtesy of The Government of the United States. Mr. David R. Galliart, Deputy Administrator, Federal Grain Inspection Service, acted as Chairman.

2. The Session was attended by delegations from 31 countries and observers from 7 international organizations. (See Appendix I for the list of participants).

3. On behalf of the Secretary of Agriculture, Mr. J.C. Hill, Deputy Assistant Secretary for Marketing and Transportation Services, welcomed the participants. He emphasized the major aspects of international trade in cereals and cereal products as well as the complex technical nature of cereal production and technology.

4. Mr. G.O. Kermode, Chief of the FAO/WHO Food Standards Programme, on behalf of the Directors-General of FAO and WHO, conveyed their appreciation to the US authorities for accepting responsibility to chair and host the new Committee.

ADOPTION OF THE AGENDA

5. The Committee unanimously agreed to adopt the Provisional Agenda without amendment.

CONSIDERATION OF TERMS OF REFERENCE OF THE COMMITTEE AND EXPLANATION OF CODEX PROCEDURES

6. The Committee had before it working document CX/CCP 80/2 which contained the terms of reference for the new Committee, which read as follows: "To elaborate world-wide standards and/or codes of practice, as may be appropriate, for cereals and cereal products."

7. The Committee was informed that the twelfth session of the Commission had agreed to the above broad terms of reference, whilst recognizing that these terms could be reconsidered in the light of the programme of work agreed upon by this Committee (para. 505 of ALINORM 78/41).

8. The Committee took note of the working procedures of the Commission and its subsidiary bodies, in particular the procedure for the elaboration of standards and codes of practice and of the interrelationship of Codex Commodity Committees, General Subject Committees and Coordinating Committees. The Committee further noted that a

5th edition of the Procedural Manual of the Commission would be available shortly and would be sent to all participants.

9. While considering the terms of reference of the Committee in connection with the future programme of work, attention was drawn to the work priority criteria established by the Commission. In this connection the Committee took note of the views which had been expressed both by the FAO Conference and Council concerning the reorientation of the work of the Commission and its priorities. In the light of this the Committee decided to review the proposals for its programme of work contained in documents CX/CCP 80/4 and CX/CCP 80/5 before confirming definitively its terms of reference.

10. The main reason leading the Committee to defer taking a final position was the need to consider whether grains as such should form part of its programme of work.

11. Several delegations informed the Committee that certain grains constituted the basic products which in their countries were bought directly by the consumer for the preparation of food in the household. These delegations pointed out that problems had been encountered at the import and retail stage.

12. Other delegations took the view that the Committee should in principle confine its activities to the elaboration of standards or codes of practice for milled or processed products since, in their opinion, the international trade in grains was already well regulated.

13. In a statement presented to the Committee, the observer of the EEC, confirming the usefulness of the development of certain world-wide standards and/or codes of practice for cereals and cereal products, considered it necessary that a careful selection should be made of the products for which standards and/or codes of practice should be elaborated, taking into account, in particular, the real needs of international trade. The Committee took note of the account of the common agricultural policy of the EEC in the cereals and cereal products sector given by the observer of the EEC.

14. The EEC expressed the opinion that the Committee should take into account the work of other international organizations relevant to cereals, such as that of the GATT Agreement on Technical Barriers to Trade and the International Wheat Agreement.

15. The Committee agreed to accept the terms of reference provisionally, subject to further discussions on the programme of work during this session and to a possible review at the second session in the light of further government comments (see also para. 155).

MATTERS OF INTEREST ARISING FROM THE CODEX ALIMENTARIUS COMMISSION AND CODEX COMMITTEES

16. The Committee had before it working document CX/CCP 80/3 which contained in Part A some information on the recent sessions of the Commission and Coordinating Committee for Africa. This information covered in particular the work on cereals and cereal products undertaken by the Coordinating Committee for Africa and the Commission's decision to agree to the transfer of the African Regional Proposed Draft Standard for Maize (Corn) (at Step 5) for consideration by this Committee.

17. The Committee was informed of the Commission's considerations with regard to the introduction of nutritional aspects into Codex standards and to the procedure to implement economic impact statements related to Codex Standards.

18. The Committee accepted the proposals made by the Secretariat to deal with these matters under the appropriate items of the Agenda.

MATTERS OF INTEREST ARISING FROM THE ACTIVITIES OF OTHER INTERNATIONAL ORGANIZATIONS

19. Parts B and C and Appendices I to III of the paper CX/CCP 80/3 provided a brief outline of activities of the International Standards Organization (ISO) and the International Association of Cereal Chemistry (ICC) of interest to this Committee.

20. It was pointed out that the Synoptic Tables on methods of analysis prepared by ICC and contained in Appendix III had been included inadvertently twice in that Appendix.

21. The representative of ISO read out a statement prepared by the 16th meeting of the Technical Committee on Agricultural Food Products Sub-Committee on Cereals and Pulses (ISO/TC 34/SC 4) which related to the agreed division of work assignments between ISO and the Codex Alimentarius Commission where ISO was mainly concerned with methods of analysis and sampling and raw material specifications and Codex with the elaboration of standards for food products.

22. The Committee agreed to consider details of the ISO and ICC activities when discussing the appropriate sections of draft standards later during the session.

23. The delegation of Australia held the view that the paper should have contained information on other international activities, such as the work carried out by (a) the International Plant Protection Convention which had, under FAO auspices, for some 30 years been involved in measures aimed at controlling the spread of pests and diseases on plants and plant products (including cereals) moving in international trade and (b) the GATT Agreement on Technical Barriers to Trade which was increasingly being ratified and did encourage countries to accept international standards.

REVIEW OF CEREALS AND CEREAL PRODUCTS

24. The Committee had before it working document CX/CCP 80/4 which had been prepared jointly by the Flour Milling and Baking Research Association, Chorleywood (UK) and the Tropical Products Institute, Culham (UK). The Committee appreciated the presence of Dr. Norman L. Kent (FMBRA) who had coordinated the part of the document dealing with products of temperate climates.

25. The Secretariat introduced the paper and pointed out that the document was concerned with the eight most important cereals on a world-wide basis. Data had been provided for grains, cereal products and further processed products derived from these eight grains.

26. Attention was also drawn to paras 8 and 9 of the document where the consultants had given a summary indication of what they considered should be essential provisions in either standards (para. 8) or codes of practice (para. 9).

27. The Committee did not agree with a proposal made by the Secretariat to discuss these criteria in isolation, since it was felt that different criteria might be suitable for different products.

28. The Committee decided to consider the grains and their derived products one by one, taking as a starting point the conclusions in the document provided for each of the products.

WHEAT, MILLED WHEAT PRODUCTS AND FURTHER PROCESSED PRODUCTS BASED ON WHEAT

WHEAT

29. The Committee considered the data on wheat and wheat based products in paras 12 to 176 and noted the views of the consultants recommending the elaboration of standards for common wheat and durum wheat as grain, respectively.

30. Several delegations expressed the view that while the document provided a wealth of information, reference to more recent regulatory texts was sometimes missing and certain data were over-simplifying a complex situation.

31. The Committee decided that this report should contain details on forthcoming additional information which would be useful to other governments.

32. The delegation of Australia pointed out that information given in paras 32 and 79 did not take into account more recent Australian developments in wheat. Para. 26 did not take into account the Australian growing conditions for wheat. With regard to reference to germination in para. 33 of the working paper the delegation felt that the term "readily" should be substituted for "premature" and that the moisture content of wheat shown in para. 35 applied to European conditions. The delegation of Spain stated that para. 26 of the working paper did also not take into account the conditions during harvest in his country.

33. The delegation of the United States concurred with Australia on the omissions and indicated that the trading system described the situation in 1974. Changes had occurred since then. The delegation further felt that the statements on white wheat were oversimplified and regretted that no reference had been made to triticum compactum which was of importance in certain parts of the world. The delegation also pointed out that determination of hardness was difficult to reproduce and that damage by alpha-amylase as discussed in para. 38 could be remedied. The delegation of the United States stated that the reference to a need for artificial drying after harvesting did not apply to harvest conditions under high temperature. The delegation of Spain supported the last point made by the delegation of the United States and indicated that in Spain artificial drying was not necessary.

34. Attention was also drawn to the broad-ranging work of ISO particularly on methods of analysis and storage and on a specification for wheat which was in its first stage of elaboration. Attention was also drawn to comprehensive and long-established trading and contracting arrangements embracing moisture levels, contamination and the like which covered the bulk of world trade in wheat, and the wide and constantly developing range of varietal types in production.

35. One delegation emphasized the need to consider whether proposals to standardize or develop codes of practice for wheat grain would meet the Codex work priority criteria, particularly given the small proportion traded for direct consumption and given that the custom of processing the product in small village mills prevailing in certain countries was rapidly changing to the installation of more sophisticated mills which were controlled by the appropriate food control authorities.

36. The delegation of Australia gave a detailed report on the reasons why the work priority criteria would not justify the elaboration of either a standard or a code of practice for wheat grain. The delegation of Australia proposed that the Code of Ethics for the

International Trade in Food, adopted by the 13th Session of the Commission, should be applied to tackle any remaining problems.

37. However, several other delegations felt that there was a need for a standard for basic grain and in particular standards for wheat.

Conclusion

38. The Committee decided not to embark on the elaboration of standards or codes of practice for either common wheat or durum wheat.

MILLED WHEAT PRODUCTS

39. The Committee discussed the need for a standard for wheat flour. Several delegations pointed out that it might be difficult to cover requirements for all types of the product in one standard only. A number of delegations held the view that it would be useful and necessary to develop a standard for white flour which would contain minimum requirements for the basic product and to possibly develop codes of practice for speciality flours, if need could be demonstrated.

40. In this context the delegation of Mexico supported by several other delegations emphasized the need for standards for grains in order to obtain flour of good quality (see also para. 130).

41. The Committee noted that a first draft of a standard for wheat flour was contained in Appendix I to CX/CCP 80/5 and agreed to defer further discussion of technical details to the appropriate item of the agenda.

Conclusion

42. The Committee agreed to develop a standard for white wheat flour and codes of practice for speciality flours as required (see also paras 123-134).

WHOLE MEAL

43. The question was raised whether whole meal was a product moving in international trade since it had a relatively short shelf-life. The Committee decided not to develop a standard for whole meal.

SEMOLINA

44. The Committee considered the information on semolina contained in paras 126-129 of the working paper. It was recognized that statistical data on the worldwide consumption and on international trade of the product had not been available and, therefore, it might be difficult to arrive at a decision at this time.

45. Attention was drawn to the Coordinating Committee for Africa which had included semolina of maize in a list of products for further consideration. It was noted that semolina made of wheat was also traded in Africa on an intra-regional basis. The Committee invited the Coordinating Committee for Africa to supply further information on semolina for examination by this Committee at its second session.

46. The delegation of Spain pointed out that in Spain a distinction was made between products with a larger particle size "semola" and with a smaller particle size "semolina".

Conclusion

47. The Committee decided to request governments to provide additional data on semolina, in particular with regard to consumption, production, and international trade.

The matter would be discussed at its next session when a decision could be taken on the need for a standard either on a regional or worldwide basis.

FURTHER PROCESSED PRODUCTS

48. The Committee noted that the authors of the working paper had briefly outlined further processed products in which milled cereals were a major component, such as bakery products, breakfast cereals, pasta products, composite flours and blended foods.

Conclusion

49. The Committee agreed with the conclusion contained in the paper (para. 17 of CX/CCP 80/4) that consideration might be given to the above products at a later date, with a view to the elaboration of standards or codes of practice for some of them.

RYE

50. In considering the technical contents of this section of CX/CCP 80/4 the following points were made by delegations.

51. Para. 198 - Methods of Analysis

The importance of the Brabender Amylograph method in assessing the quality of rye was emphasized.

52. Para. 187 - Grain Composition

The typical protein value of 13.8 (N x 5. 7) was thought to be rather high: it was suggested that 11.1 was a better average figure. The Committee noted that one possible difference between the two values could be that they had been calculated at different moisture levels.

53. It was noted that rye products form a significant part of the diet in Eastern European and Scandinavian countries but elsewhere the consumption was low. There was some international trade in rye grain but little, if any, in milled rye products or further processed products.

54. The Committee further noted the consultant's recommendation that consideration might be given to the elaboration of Codes of Practice for milled rye products -flour, meal, flakes- in relation to their use for the manufacture of further processed products.

55. It had also been recommended that the elaboration of a Standard for rye grain should be considered and that further information should be gathered about rye crisp bread (Knäckebrot) with a view to standardization later.

56. The Committee noted that in the opinion of the delegation of the Federal Republic of Germany a major producer and consumer of rye products, there were no difficulties in the trade of rye and rye flour and that in any case trade was rather small.

Conclusion

57. It was agreed that no Standards or Codes of Practice should be developed for rye grain or milled rye products.

TRITICALE

58. The Committee noted that the principal use of triticale was as a feed grain, and that commercial crops were produced not only in the U.S.A. but also in Mexico.

59. It also noted hybridization research work was still in progress and that the genetic constitution of triticale was not yet stabilized.

Conclusion

60. It was agreed not to pursue work on Standards or Codes of Practice for triticale.

BARLEY

61. The Committee recognized that there was considerable trade in barley and that in some parts of Eastern Europe, Asia, the Near East, the Middle East and Northern Africa, barley provided a considerable proportion of the human diet. It was also a food as such or used in the food industry in many countries. International trade in barley as a direct food however was small and milled products did not enter into international trade to any extent.

62. In view of the fact that the consumption of milled barley products reaches relatively high levels in countries of two regions, the Middle East and North Africa, it had been recommended by the consultants that international standards for barley (whole grain) and pearl barley should be considered.

63. The delegation of the Federal Republic of Germany recognized that there was important trade in barley but it was difficult to identify the barley grain in international trade which went for direct human consumption. In its opinion existing regulations were adequate and standards for barley grain and pearl barley were not required. The Committee might consider developing a Code of Practice for milled barley, e. g., pearl barley.

64. The Secretariat pointed out that there were problems, chiefly related to hygiene, with barley products among which were unsatisfactory moisture levels and extraneous material from various sources) and suggested that because of the importance of such products in North Africa and the Middle East, the Regional Coordinating Committees should be consulted.

65. The delegation of Australia pointed out that the Coordinating Committee for Africa had already prepared a list of products of regional importance for standardization, and barley had not been included. He emphasized that Codex work priority criteria must be carefully considered when Coordinating Committees supplied information on trade and consumption or on consumer health aspects.

66. It was pointed out that although barley and barley products were not included on the list drawn up at the last sessions of the Coordinating Committee for Africa, this was because these products were consumed in North African countries, representatives of which had not attended the session. It did not therefore necessarily reflect a lack of interest in the standardization of such products. It was also pointed out that there had been an amendment to the work priority criteria (see ALINORM 78/41 para. 129) to include the idea of elaborating international standards for products having international market potential.

67. The delegation of The Netherlands pointed out that in certain countries the problem of extraneous matter in barley was largely due to the fact that most grain was produced by small-scale farmers who could not purchase the necessary cleaning equipment.

Conclusion

68. After some further discussion the Committee agreed with the point of view expressed by the delegation of Australia that information should be sought through the Regional Coordinating Committees and that at the same time they should note that ISO

work on storage facilities and other means of combating poor quality products should be consulted so as to avoid the danger of duplication.

69. The Committee agreed that no work on Standards or Codes of Practice for grain barley or pearl barley should be undertaken at the present time.

OATS

70. Para. 303 - Grain Types

The Committee noted that in the opinion of the delegation of Spain a variety of avena sativa which produced yellow grain should be included.

71. It was noted from the relevant section of the working paper that the consumption of oat products was world-wide but of a low level and that there was some international trade in oats (grain) but little in any of its milled products.

72. The most commonly consumed milled product was probably oat flakes (rolled oats) which had a fairly standard form and composition.

73. The consultant had recommended that work on international standards for oats (whole grain) and rolled oats (oat flakes) should be considered.

74. The Committee decided however that because of the comparatively low volume of international trade, that the standardization of oats (whole grains) should not be pursued. With regard to oat flakes (rolled oats) it was noted that because of its good nutritional value the product could play an important role in the future in the diets of developing countries. The Commission at its 13th Session had decided the Committees should consider, as the need arose, nutritional aspects in foods, particularly those having a significant role in the diets of developing countries.

75. The Committee agreed to bring to the attention of Coordinating Committees the potential value of the product in the diet but not to pursue the development of Standards or Codes of Practice at the present time.

76. It was noted, however, that changing trade patterns may allow revision of decisions on this and other products at a future date.

RICE

77. The Committee noted that in addition to the section of the document at present under consideration which dealt with rice and rice products in general, a proposed draft standard for milled rice had been prepared. (See CX/CCP 80/5 Appendix **III).**

PADDY RICE

78. It was recognized that rice entered international trade for economy of transport reasons mostly in the form of brown or milled rice. Nevertheless, because rice was one of the major staple crops of the world it had been proposed that rice be considered for standardization, perhaps on a regional basis.

79. The Committee noted that the model grading system of the FAO Intergovernmental Group on Rice had already developed a classification of rice by size.

80. The delegation of Thailand stated that in its opinion there were no criteria apart from moisture content which needed regulation in paddy rice. The important problems were related to the storage and handling of the product.

Conclusion

81. The Committee noted that there was little international trade in paddy rice and decided that there was no need for international standards or Codes of Practice at this time.

MILLED RICE

82. The following technical comments were made:

Treatment

The delegation of Egypt informed the Committee that in the glazing of rice in his country calcium carbonate, instead of talc, and glucose were used and that the resulting product was exported to several European countries.

Quality Criteria

Several delegations proposed additions to the quality criteria. Those were: damaged grains (yellow); discoloured grain; foreign material - organic and inorganic; taste.

83. The Committee noted the opinion expressed by the consultant that milled rice was traded widely throughout the world, that numerous countries had specific standards and grades and that it would be beneficial to standardize milled rice on a world-wide basis. The relevant section of the paper also included suggestions for the factors to be considered in a standard and additional factors that could form the basis of a Code of Practice.

84. There was considerable discussion on whether or not an international standard was necessary for milled rice.

85. The delegation of Thailand held the view that although milled rice constituted a major item in the diet in many countries the amount which entered international trade (10 million tons) was small compared with the amount consumed in the producing countries themselves. In many countries, including Thailand, standardization could be an impediment because rice was milled often at a village level under variable conditions. In Thailand alone there were some 40,000 small- scale rice milling facilities and standardization would be of no benefit to local consumption or trade. Quality was adequately controlled by the Thailand Board of Trade.

86. The delegation of Egypt pointed out that rice was a staple food for over 50% of the world's population and that the hygienic conditions of the final product could pose problems to health because of insect infestation and animal detritus. There was also some trade in broken rice in which the possibility of defects of this nature were more acute than in the whole grain. In the opinion of the delegation these considerations justified the elaboration of an international standard for milled rice.

87. The delegation of Senegal informed the Committee that in his country there was considerable consumption of imported broken rice and that insect infestation often occurred. In order to protect the health of the consumer the delegation considered that a Code of Practice was necessary.

88. The Committee noted that international trade in the product was largely in bulk and that the sampling and quality control was controlled in international contractual agreements between exporter and importer. It was furthermore not possible to quantify

the amount of broken rice as opposed to milled rice moving in international trade and milled rice was traded in a variety of types.

89. It was pointed out that international Codex Standards, when issued for acceptance, implied that the provisions would be integrated into national legislation and that in the case of milled rice provisions for name and description in a standard would present a major obstacle.

90. The delegation of Italy was of the opinion that more information on milled rice was required before a decision could be taken on whether Standards or Codes of Practice could be elaborated and reserved its position until such time as expert advice could be taken.

91. The Committee noted that many producing and consuming countries were not present at the session and it was therefore difficult to have further information readily and thus arrive at a balanced conclusion. ISO had already identified some of the problems with regard to standardization of the products, but because of the diversity of forms which the final product took, the Committee agreed that Governments and in particular the Coordinating Committees of Africa and Asia should be consulted.

Conclusion

92. The Committee decided that at this time no decision to work on Standards or Codes of Practice for milled rice should be made until the Committee had an opportunity to examine the comments of Governments and Coordinating Committees at its Second Session.

MAIZE

93. Because maize was a major world staple, it had been recommended by the consultants that consideration be given to the standardization of whole grain maize, and the factors to be included in the Standard had been proposed.

94. The Committee was informed that the Codex Coordinating Committee for Africa at its Third Session, recognizing the importance of the commodity to many countries of the region, had begun work on a proposed regional Draft Standard for Maize prepared by the delegation of Ghana.

95. At its Fourth Session the Coordinating Committee had examined the Standard in the light of comments at Step 3 and made some amendments and advanced the Standard to Step 5 as a regional standard. It had also been agreed that, in view of the formation of the present Committee and of the importance of maize for human consumption to other regions, it be recommended to the Commission that the Regional Standard should be presented to the Committee for elaboration as a world-wide standard.

96. At its 13th Session (ALINORM 79/38, para. 535), the Commission had agreed that consideration of the standard should be an item on the agenda of the present session of this Committee. Should the Committee decide not to develop a worldwide standard for maize, then it would be open to the Coordinating Committee for Africa to continue to elaborate a regional standard.

97. The delegation of Poland was of the opinion that trade in maize for human consumption was sufficiently widespread to justify the elaboration of a worldwide standard.

98. The Committee discussed briefly the way in which maize grains were marketed and used domestically in countries of the region. It noted that much of the grain was sold in the open market "out of the bag" and was home processed by grinding or pounding.

Conclusion

99. The Committee agreed to proceed with the elaboration of a worldwide standard for maize. At a later stage in the Session the standard (see CX/CCP 80/5, Appendix II) would be examined in detail (see paras 138-154).

MILLED MAIZE PRODUCTS

100. The Committee examined the technological and scientific data and the statistical information on milled maize products contained in paras 510 to 553 of working paper CX/CCP 80/4.

101. In considering the above data, the delegation of Mexico called attention to the alkaline treatment of maize for the production of maize flour for tortillas. It was pointed out that information on such treatment at household level was contained in para. 498 of the paper and that information on industrially produced alkaline treated maize flour was contained in para. 519.

102. The delegation of the Netherlands emphasized that the data on the typical yields and composition of maize products in Table 19 should be interpreted as typical data only since they were not applicable in all regions.

Consideration of Standards or Codes of Practice for Whole Maize Meals

103. The Committee noted that in a large number of African and Latin American countries the daily intake of maize meals and foods prepared on the basis of maize meals and flours was very large, i. e. that maize was the staple food in these countries.

104. Attention was also drawn to difficulties in interpreting statistical data for maize flour and meal, especially since both terms were used alternatively.

105. The delegation of Mexico expressed the view that the development of a Code of Practice for milled maize products was a good complement to a standard for maize grains.

106. The delegation of the United States did not agree with the recommendation in para. 544 of the working paper that the elaboration of standards for maize meals should be referred to Coordinating Committees and opted for a world-wide standard for whole maize meal. It was noted that the delegation of the United States did not understand the need for all the criteria outlined in para. 545.

107. The Secretariat informed the Committee that the 5th Session of the Coordinating Committee for Africa would discuss the need for the above products at a future session.

Conclusion

108. The Committee decided to commence elaboration of Standards for whole maize meal (flours) and grits for direct human consumption on a worldwide basis and recommended that the African Coordinating Committee submit their views on specific requirements for products in the African region to this Committee. More details on the above standards would be considered under the item on future work.

SORGHUM

109. The Committee noted that in countries in the semi-arid zones of Africa and certain Asian countries, sorghum and milled sorghum products constituted the staple food; in the United States and in South America, sorghum was grown as feed grain. The delegation of Spain indicated that sorghum was also grown in its country as a second crop and in irrigated soil and that it was used as feed. The delegation of Senegal drew the Committee's attention to efforts to use industrially processed sorghum and millet flours in other products such as bread and biscuits. Whereas tests for products containing a considerable proportion of millet flour had been successful (30% in bread, 80% in biscuits) for use of sorghum flour had not been conclusive.

Consideration of a Need for Standards or Codes of Practice for Sorghum Grain

110. The Committee noted the recommendation contained in the working paper to work as a starting point on a Code of Practice and embark later on a Standard in view of an increasing trade, especially in Africa and Near East countries.

111. The delegation of Senegal welcomed the idea to elaborate a Standard for sorghum grains in intra-African trade.

112. The Secretariat informed the Committee that the 4th session of the Coordinating Committee for Africa had informed the Commission of its intention to elaborate an African Regional Procedure for Dried Sorghum and Millet Grains and that Senegal would submit a draft standard to the next session of that Committee.

113. Consideration was given to a proposal to develop, in addition to the work in the African region, a worldwide Code of Practice for sorghum.

114. With regard to the development of a worldwide standard for sorghum, concern was expressed that a standard with high priority on a regional level might only be of low priority on the worldwide level, and a delay would not be of benefit to the countries of the African region.

Conclusion

115. The Committee agreed with the view of the delegation of the United Kingdom that the Coordinating Committee for Africa should proceed with the elaboration of a standard for sorghum grains. When the standard was issued for comments at Step 3, this Committee would have the opportunity to decide whether it should be developed on a worldwide basis.

MILLED SORGHUM PRODUCTS

116. The Committee noted the data provided on milled sorghum products, such as whole meal and extracted flour and pearled sorghum relating to production, quality criteria, treatment and food additives, enrichment, special types and applications.

117. The delegation of Senegal pointed out that all of the above products were prepared domestically.

Conclusion

118. The Secretariat informed the Committee that the Coordinating Committee intended to elaborate an African Regional Standard for Milled Sorghum Products and that Senegal was preparing the supporting paper. The Committee decided to proceed as for the Standard for Sorghum Grains (see para. 115).

MILLET

119. The Committee noted that the Coordinating Committee for Africa had commenced work on standards for millet flour and concurred that regional standards for dried millet grains and millet flour would be the most appropriate way to develop international standards. It was further agreed that the views of the Coordinating Committee for Asia should also be sought on this matter.

OTHER GRAINS

120. The question was raised as to whether other grains such a buckwheat and quinoa could be given consideration by the Committee at a future date. The Committee agreed that under its present broad terms of reference, although such grains as the Leguminaceae could not be included, buckwheat and quinoa had a close affinity to the cereal grains and could be examined by the Committee if the needs for Standards or Codes of Practice were justified in the future.

STARCH AND GLUTEN

121. The Committee took note of the information supplied in document CX/CCP 80/4 on starch and gluten and agreed that no Standards or Codes of Practice were required for these products.

CONSIDERATION OF SUMMARY OF CRITERIA FOR CONSIDERATION IN THE STANDARDIZATION OF CEREAL AND CEREAL PRODUCTS

122. The Committee had before it working document CX/CCP 80/5 giving the above information which had also been prepared jointly by the Tropical Products Institute and the Flour Milling and Baking Research Association. The paper contained recommendations for criteria which could form part of standards for grains as such and for milled cereal products. Other additional criteria had been suggested for inclusion in Codes of Practice for specific products. The Committee decided to consider the above information in connection with the discussion of the draft standards for wheat flour and maize grains respectively.

PROPOSED DRAFT STANDARD FOR WHEAT FLOUR - STEP 2

123. The Committee decided to examine section-by-section the proposed draft standard for wheat flour contained in Appendix I of document CX/CCP 80/5 at Step 2. The revised text of the standard is contained in Appendix II.

SCOPE

124. It was agreed to include club wheat, triticum compactum, and mixtures of triticum compactum with triticum aestivum in the standard and to amend Sections 1.1 and 1.3 (now 1.2 of Appendix II) accordingly.

125. The description "white" was deleted from the term "white wheat flour" in Section 1.1 Since Section 1.3 (now 1.2 of Appendix II) was amended by substituting the term "meal" for "high extraction flours".

126. A number of delegations felt that the draft standard should apply only to flour sold direct to the consumer for domestic consumption. They requested that the term "direct" be added to the phrase "for human consumption" in Section 1.1 to make it clear that the product was intended for direct human consumption. Several delegations opposed this suggestion as they felt that a standard which did not cover flour intended for the manufacture of further processed products would be of little relevance to developing

countries. It was pointed out in the course of the discussion that Section 1.4 (now 1.3) also needed to be revised to make clear whether or not the standard applied to flour for use in bakeries. It was agreed that the term "direct" should be added to Section 1.1 in square brackets and that the text of Section 1.4 should be revised to include alternative material in square brackets. It was also agreed that the attention of governments should be drawn to this discussion and specific comments on the issue requested.

127. Section 1.2 of the draft was deleted entirely and as a consequence Sections 1.3 and 1.4 were renumbered accordingly.

DESCRIPTION

128. Section 2.1 was brought into conformity with the Scope Section 1.1 and further amended to make the requirements practicable. It was agreed to place Sections 2.2 to 2.9 in square brackets.

ESSENTIAL COMPOSITION AND QUALITY FACTORS

129. Section 3.1.1 was consequentially amended to reflect the Committee's decision concerning Section 2.1. Some delegations were of the opinion that it was inappropriate to make specifications or requirements for the grain in Section 3.1.1 as in their opinion it was only possible to check upon the compositional factors of the final product, i. e. flour. Others were of the view that it was necessary to include certain provisions in the standard for the raw materials from which the flour was derived. It was agreed to place the revised text of Section 3.1.1 within square brackets and to request specific government comments on this matter. The specific limits previously included in the Section 3.1.1 were deleted.

130. The Committee decided to elicit comments on Sections 2.1 and 3.1.1 from the Coordinating Committee for Asia, which had expressed particular interest in the Standard. The delegation of Mexico reserved its position on the text of Sections 2.1 and 3.1.1.

131. In discussing very briefly Sections 3.1.2 to 3.1.9 dealing with such matters as ash content, acid-insoluble ash, crude fibre content, acidity, protein content, wet-gluten content and alpha-amylase activity several delegations expressed the view that a number of the above criteria should be deleted.

132. It was pointed out, however, that in deleting these criteria governments would have no further opportunity to examine these provisions. A number of delegations felt that the figures contained in Sections 3.1.2 to 3.1.9 would have to be discussed more in depth and that they could not agree with some of them.

133. In view of the above the Committee decided to place Sections 3.1.2 to 3.1.9 in square brackets with the understanding that comments would be sought on both the need for these provisions and the validity of the limits indicated.

134. It was noted that the section on Optional Ingredients contained a number of food additives and the Secretariat was instructed to categorize them properly to amend Sections 3.3.1 and 4 accordingly and to place Section 4 in square brackets.

135. It was also agreed that the section on Labelling would have to be brought into line with the amended text of the sections on Description and Essential Quality Criteria,

STATUS OF THE PROPOSED DRAFT STANDARD FOR WHEAT FLOUR

136. The Committee agreed that it might be appropriate to defer discussion of the remaining sections of the Standard to its next session. It was recognized that in view of the extensive changes proposed to some of the Sections discussed, governments should give further consideration to the full text of the Standard. The Secretariat was instructed to mark these sections of the proposed draft standard which had not been discussed.

137. The Committee agreed to advance the Proposed Draft Standard for Wheat Flour to Step 3 of the Procedure (see Appendix II).

CONSIDERATION OF A PROPOSED DRAFT STANDARD FOR MAIZE

138. The Committee had before it the Proposed Draft Standard for Maize at Step 5 which had been elaborated as an African Regional Standard by the Coordinating Committee for Africa (Appendix II to CX/CCP 80/5).

139. The Committee was reminded that it had agreed earlier during the Session to elaborate a worldwide standard for Maize Grains for direct human consumption. The Committee was informed of the decision taken by the 13th Session of the Commission with regard to the above standard, namely (a) to examine, outside the Step Procedure, whether the current wording of the Standard was appropriate to be elaborated as a worldwide standard and (b) to determine the appropriate Step for the Standard (see paras 93-99).

140. In the light of the above instructions the Committee examined the Standard and specifically the Scope Section for which an amendment had been proposed by the delegation of the United States to clarify the meaning of the term 'for direct human consumption"-

141. The Committee agreed that the standard should apply to maize for direct human consumption in packaged form or sold loose from the package direct to the consumer.

142. The delegations of Mexico and Spain, supported by other Spanish-speaking delegations, requested the Committee to modify the Spanish version of the text to include both terms "empaquetado" and "ensacado" to clarify that the standard would apply to products packed in packages and in sacks. The amended text of the scope is contained in Section 1 of Appendix III.

143. The Committee accepted a proposal by the Chairman to limit discussions at this stage to the sections on Scope, Description and Essential Composition and Quality Criteria, in the same way as decided for the standard for wheat flour.

144. Several delegations were of the opinion that Section 2.1 (Product Definition) presented problems with requirements for evenly dried and matured grains. The Committee decided to place "evenly" and "matured" in square brackets.

145. The delegation of Argentina informed the Committee that flint maize produced in Argentina was of red or dark orange colour. The Committee agreed to include red as a third colour in Section 2.2.1 and to make the appropriate consequential amendments to Sections 2.2.1 and 2.2.2.

146. The view was expressed that Section 3.4.2 on broken or chipped grains constituted a safeguard with respect to mature grains. The Committee did not agree with the above view.

147. The delegation of Spain drew attention to an alternative method to determine the content of broken grains. The Committee added the alternative method to Section 3.4.2 and decided to request specific comments on the matter.

148. Section 3.1.2 - General Requirements - was amended to clarify the exact meaning by substituting "impurities and insects" for "foreign matter and damage of insects or diseases".

149. Several delegations held the view that the table on tolerances for defects in Section 3.5 needed a more thorough examination. The Committee agreed with the above view and placed the whole section in square brackets in order to request specific comments on the section.

150. In view of the revised scope, Section 6.3 (grains in bulk), was deleted.

151. The delegation of the United States informed the Committee that the text of the method for the determination of moisture content (air oven method) was incorrect and supplied the correct version, which is contained in the revised text of the Standard in Appendix III to this Report. Several other delegations were of the opinion that also other sections needed more discussion and indicated that the square brackets already contained in the Standard should be retained, especially in the case of the figure for moisture content in Section 3.3.1. The delegation of the United States expressed the view that the recommendation of the paper concerning moisture content (para. 6 of CX/CCP 80/5) was not statistically sound. The Commission accepted an offer by the delegation of the United States to prepare a working paper on this subject for the next session.

152. In recognizing the difficulties in discussions arising from lack of clear definitions, the Committee decided that a working paper should be prepared on definitions to be included in the above Standard, to assist the Committee. The delegation of Argentina agreed to prepare the paper assisted by the United States. The delegation of the Federal Republic of Germany offered to supply data.

153. The Committee fully discussed the question of the Step at which the Standard should be placed; it was agreed that Steps 3 or 6 would be appropriate. Whilst several countries were of the opinion that in view of the extensive amendments the Standard should be returned to Step 3, other countries were of the opinion that the Standard should be advanced to Step 6. These delegations pointed out that the Commission had already had an opportunity to examine the Standard at its 13th Session and that this Committee should continue to elaborate the Standard in the light of Government comments until it was fully satisfied with the text of the Standard (Steps 6 and 7 of the Procedure).

154. The Committee decided to advance the draft standard for Maize to Step 6 of the Procedure and instructed the Secretariat to mark clearly those sections of the Standard which had not been discussed. The delegation of Mexico reserved its position on this decision since it felt that essentially it would have been appropriate to place the standard at Step 3 for discussion as a worldwide standard. Several delegations agreed with the delegation of Mexico.

FUTURE PROGRAMME OF WORK

155. The Committee noted that at a result of discussion of the agenda at the present session, the following decisions summarized below had been made.

1. The Committee agreed to its Terms of Reference.
2. No Standards or Codes of Practice for Wheat Grain (see paras 19-98).
3. Worldwide Standard to be elaborated for Wheat Flour (see paras 39-42).
4. Obtain more information on Semolina via-à-vis African regional standard (see paras 44-47).
5. No Standard or Codes of Practice for Rye Grain or Milled Rye Products (see paras. 50-57).
6. No Standard or Code of Practice for Triticale (see paras 58-60).
7. No Standard or Code of Practice for Barley Grain and Milled Products but information to be sought from Regional Coordinating Committees (see paras 61-69).
8. No Standard or Code of Practice for Oats; seek views of Governments and Regional Committees re Standard for Rolled Oats (see paras 70-76).
9. Possible consideration at some future time of standards or codes of practice for further processed products including composite flours, compounded foods, pasta products and breakfast cereals (see paras 48-49).
10. No Standard or Code of Practice for Rice Grain (Paddy) (see paras 78-81).
11. No Standard or Code of Practice for Milled Rice but Coordinating Committees for Asia and Africa to be consulted concerning the need for a standard (see paras 82-92).
12. Elaborate Worldwide Standard for Maize Grain for Human Consumption (see paras 93-99)
13. Elaborate Worldwide Standard for Whole and Degermed Maize Meals; also consider possible standards for flours and grits (draft to be prepared by the U.S.A.) (see paras 100-108).
14. Regional African Standards will be elaborated for Dried Sorghum and Millet Grains and Sorghum and Millet Flours (see paras 109-119).
15. The Committee advanced the Proposed Draft Standard for Wheat Flour to Step 3 and requested comments.
16. The Committee advanced the Draft Standard for Maize (Corn) to Step 6 and requested comments.
17. The Committee established an ad hoc working group to prepare a working paper on definitions for inclusion in the Standard for Maize for the next session. Argentina to prepare a working paper in consultation with the United States. The Federal Republic of Germany would supply information to Argentina.
18. Prepare working paper on para. 6 of document CX/CCP 80/5, Moisture Content, for the next session (to be prepared by U.S.A.).

19. Prepare working paper on definitions in Wheat Flour Standard for next session. To be prepared by Dr. Kent (United Kingdom).

156. The Committee agreed that the above decisions provided a full programme of work for the next session of the Committee.

157. With regard to points 17 and 19 above, it was noted that in addition to the working paper on definitions in the standard for Maize which the delegation of Argentina offered to prepare, the delegation of the United Kingdom (Dr. Kent, co-author of papers CX/CCP 80/4 and 80/5) had agreed to prepare a paper setting out the definitions to be included in Section 2 of the standard for Wheat Flour. The delegation of the Federal Republic of Germany would be able to provide data.

158. The delegation of the United States agreed to prepare a paper containing a Proposed Draft Standard (first draft) for Maize Meals for consideration at the next session of the Committee.

DATE AND PLACE OF NEXT SESSION

159. It was noted that the Government of the U.S.A. would be in a position to host the next session of the Committee in or around May 1981. The precise date would, however, have to be determined following discussions in the Codex Executive Committee as decided at the 13th Session of the Codex Alimentarius Commission (para. 558, ALINORM 79/38). The delegation of Senegal reminded the Committee of the offer made at the 13th Session of the Codex Alimentarius Commission (ALINORM 79/38, paras 112 and 256). by the delegation of the United States when it stated that it would inquire whether its Government was willing to host the Committee outside the United States. The Committee was informed that discussions on this point were continuing and that a decision would be communicated to the Committee at a later stage.

OTHER BUSINESS

160. The delegation of the United States of America stated that the information provided at this first session of the Committee had demonstrated that for many of the products under consideration industrial processing was at an early stage; home processing of raw materials and intermediate products still provided major contributions to the basic diet in member countries of the Codex Alimentarius Commission. There was still a lack of information on the extent to which worldwide standardization would ameliorate the situation in developing countries or fully accommodate the needs of members of the Commission. It was recognized that economic consideration often hindered active participation of representatives of interested governments at Codex Committees. The Committee hoped that those interested in its work programme would maintain close communication with the Secretariats of the host government and the Codex Alimentarius Commission so that the Committee could be made aware of both international and regional developments as soon as possible.

161. The Committee expressed its appreciation to the consultants who had prepared the background papers (CX/CCP 80/4 and 80/5) of high quality under extreme pressure and acknowledged the valuable contribution these documents had made to the successful start to the work of the Committee.

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APPENDIX I

LIST OF PARTICIPANTS (*)
LISTE DES PARTICIPANTS
LISTA DE PARTICIPANTES

(*) The heads of delegations are listed first; alternates, advisers and consultants are listed in alphabetical order.
Les chefs de délégations figurent en tête et les suppléants, conseillers et consultants sont énumeres par ordre alphabetique.
Figuran en primer lugar los Jefes de las delegaciones; los Suplentes, Asesores y Consulto-res aparecen por orden alfabético.

Chairman
President
Presidente

Mr. David GALLIART
Deputy Administrator for Programme Operations
Federal Grain Inspection Service
U.S. Department of Agriculture
Room 1628, South Building
Washington, D.C. 20036
U.S.A.

Assistant to the Chairman
President Adjoint
Presidente Adjunto

Mr. Gerald R. PARLET
Assistant to the Deputy Administrator
Department of Agriculture
Room 2649, South Building
Washington, D.C. 20036
U.S.A.

ARGENTINA
ARGENTINE

Mr. José Maria FROGONE
Technical Manager
National Grain Board
Junta Nacional de Granos
Paseo Col6n 367
1063 Buenos Aires
Argentina

Mr. Alberto Fernandez BASAVILBASO
First Secretary (Economic and Commercial)
Embassy of Argentina
1600 New Hampshire Avenue, N.W.
Washington, D.C. 20009
U.S.A.

Mr. Saturnino M. ZEMBORAIN
Counselor (Agricultural)
Embassy of Argentina
1600 New Hampshire Avenue, N.W.
Washington, D.C. 20009

AUSTRALIA
AUSTRALIE

Mr. J.R. MERTON
Assistant Secretary
Food Service Branch
Department of Primary Industry
Canberra ACT
Australia

Mr. Gardner MURRAY
Veterinary Attache
Office of the Minister (Commercial)
Embassy of Australia
1601 Massachusetts Avenue, N.W.
Washington, D.C. 20036
U.S.A.

BELGIUM
BELGIQUE
BELGICA

Mr. Julien RONCHAINE
Agricultural Attaché
Embassy of Belgium
3330 Garfield Street, N.W.
Washington, D. C. 20008
U.S.A.

BRAZIL
BRESIL
BRASIL

Mr. Policarpo VITTI
Agriculture Engineer
Secretary of Agriculture, S. Paulo
Institute of Food Technology
Ministry of Agriculture
S.P. Avenida Brasil, 2880, C.P. 139
Campinas
Brazil

CANADA

Mr. Russel TKACHUK
Head, Basic Wheat Research
Canadian Grain Commission
Winnipeg
Manitoba
Canada

Mr. S.W. GARLAND
Director
Crop Production Division
Agriculture Canada
Sir John Carling Bldg.
Ottawa, Ontario
Canada

Dr. N. TAPE
Director
Food and Nutrition Service
Agriculture Canada
Sir John Carling Bldg.
Ottawa, Ontario
Canada

CHILE

Mr. Francisco OSSA
Counselor
Embassy of Chile
1732 Massachusetts Avenue, N.W.
Washington, D.C. 20036
U.S.A.

DENMARK
DANEMARK
DINAMARCA

Mr. Khud DAMGAARD
Agricultural Counselor
Royal Danish Embassy
3200 Whitehaven Street, N.W.
Washington, D.C. 20008
U.S.A.

ECUADOR
EQUATEUR

Mr. Raul NIETO
Minister-Counselor (Commercial Affairs)
Embassy of Ecuador
2535 15th Street, N.W.
Washington, D.C. 20009
U.S.A.

EGYPT
EGYPTE
EGIPTO

Mr. Mohamed Sherif El-HERRAWI
Member of the Egyptian Committee of Codex
Member, Board of the Egyptian Federation of Industries
Rashid Rice Mills Company
Alexandria
Egypt

FINLAND
FINLANDE
FINLANDIA

Dr. Erkki PETAJA
Director of Customs Laboratory
Box 512
SF-00101 Helsinki 10
Finland

Dr. Kalevi SALMINEN
Head of Food Bureau
National Board of Trade and Consumer Interests
Helsinki 53
Finland

Dr. Pekka PAKKALA
Chief Inspector
National Board of Health
Siltasaarenkatu 12A
00530 Helsinki 53
Finland

FRANCE
FRANCIA

Mr. Robert LOUBRIEU
Chef du Bureau
Service des Relations Internationales de l'ONIC
Paris
France

Mr. Raymond RUINEAU
Inspecteur général
Service de la Répression des frauds et du contrôle de la qualité
Ministère de l'Agriculture
44 Boulevard de Grenelle
75015 Paris
France

GERMANY, FED. REP. of
ALLEMAGNE, REP. FED. d'
ALEMANIA, REP. FED. de

Dr. Elisabeth HUFNAGEL
Chief Executive Officer
Federal Ministry for Youth, Family and Health
Deutschherrenstrasse 87
D-5300 Bonn 2
Fed. Rep. of Germany

Dr. Rudolf JAHNEN
Chief Executive Officer
Federal Ministry for Food, Agriculture and Forestry
Rochusstr. 1
D-5300 Bonn 1
Fed. Rep. of Germany

GUATEMALA

His Excellency
General Felipe Doroteo MONTERROSO
Ambassador of Guatemala
2220 R Street, N.W.
Washington, D.C. 20008
U.S.A.

Mr. Oscar Alfredo OROZCO-MARTINEZ
Economist
INDECA
Ministry of Agriculture
Guatemala City
Guatemala

HUNGARY
HONGRIE
HUNGRIA

Dr. Jozsef NEMETH
Counselor (Agriculture)
Embassy of Hungary
3910 Shoemaker Street, N.W.
Washington, D.C. 20008
U.S.A.

ITALY
ITALIE
ITALIA

D. ssa Orietta MANCINI
Section Director
Department of Health
Istituto Superiore di Sanità
Viale Regina Elena, 299
00161-Rome, Italy

D.ssa Claudia TASSI-MICCO
Research Expert
Istituto Superiore di Sanità
Viale Regina Elena, 299
00161-Rome, Italy

LESOTHO

Miss Nehen JONATHAN
Chief Nutrition Officer
Ministry of Agriculture and Marketing
Maseru
Lesotho

MEXICO
MEXIQUE

Dr. H. Barrera-Benltez
Consejero Cientffico y Técnico
Consejo Nacional de Ciencia y Tecnología
Mexico 20, D. F.
Mexico

Mr. Jesús URIBE RUIZ
Economic Adviser
CONACYT
Mexico 20, D. F.
Mexico

Mr. Julian CARRILLO
Engineer for Agronomy
Centro de Adaptacion de Nuevas Especies - CONACYT
Mexico 20, D. F.
Mexico

Dr. Victor M. HORCASITAS
Counselor (Agricultural Affairs)
Embassy of Mexico
2829 16th Street, N.W.
Washington, D.C. 20009
U.S.A.

Mr. Baltazar PERAL
Assistant Agricultural Attaché
Embassy of Mexico
2829 16th Street, N.W.
Washington, D.C. 20009
U.S.A.

NETHERLANDS
PAYS-BAS
PAISES-BAJOS

Mr. W.J. De KOE
Food Inspector
Ministry of Public Health and Environmental Hygiene
P.O. Box 439
2260 AK-Leidschendam
Netherlands

Mr. M.J. Zijp
Principal Administrator
Agriculture and Horticulture Division
Ministry of Agriculture and Fisheries
P.O. Box 20401
The Hague
Netherlands

Mr. Theo EVERS
Attaché (Health and Environmental Protection)
Embassy of the Netherlands
4200 Linnean Avenue, N.W.
Washington, D.C. 20008
U.S.A.

Mr. O. C. KNOTTNERUS
General Commodity Board for Arable Products
The Hague
Netherlands

Mr. G.L. PEELS
Commission for the Dutch Food and Agricultural Industry
UNILEVER N.V.
Burgm. S'Jacobplein 1
Rotterdam
Netherlands

Mr. Eric DENIG
Counselor (Agriculture and Emigration)
Embassy of The Netherlands
4200 Linnean Avenue, N.W.
Washington, D.C. 20008
U.S.A.

NORWAY
NORVEGE
NORUEGA

Dr. P. A. ROSNESS
Deputy Director
Government Quality Control (Processed Fruits and Vegetables)
Oslo
Norway

POLAND
POLOGNE
POLONIA

Mr. Stanislaw TOMASZEWSKI
Chief of Division of Standards and International Corporation
Quality Inspection Office
Ministry of Foreign Trade and Shipping
Warsaw
Poland

Mr. Maciej JAROSINSKI
Manager of Department
Polish Commercial Consular Office New York, New York 10017
U.S.A.

Mr. Leopold K. MAJEWSKI
Agricultural Attaché
Embassy of Poland
2640 16th Street, N.W.
Washington, D. C. 20009
U.S.A.

SENEGAL

Mr. Pouye AMADOU
Inspector, Food Control
Institute of Technology
Dakar
Senegal

SIERRA LEONE
SIERRA LEONA

Mr. P.W. BONGLO
Second Secretary
Embassy of Sierra Leone
1701 19th Street, N.W.
Washington, D.C. 20009
U.S.A.

SPAIN
ESPAGNE
ESPANA

Mr. Constantino RIVAS MARTINEZ
Jefe de la Sección de Tipificación y Análisis
Servicio Nacional de Productos Agrarios
Ministerio de Agricultura
Madrid
Spain

Mr. Jose Luis SAINZ
Agricultural Counselor
Embassy of Spain
2700 15th Street, N.W.
Washington, D.C. 20009
U.S.A.

SWEDEN
SUEDE
SUECIA

Mrs. Eila SHKANEN
Deputy Head of Food Standards Division
The National Swedish Food Administration
Codex Contact Point
Uppsala
Sweden

Mr. Staffan DARVELID
Counselor (Agricultural Affairs)
Embassy of Sweden
600 New Hampshire Ave., N.W.
Washington, D.C. 20037
U.S.A.

SWITZERLAND
SUISSE
SUIZA

Mr. P. ROSSIER
Head of Codex Section
Federal Office of Public Health
Haslerstrasse 16
CH-3008 Berne
Switzerland

Mr. T.L. AVIGDOR
Expert en Législation alimentaire
Societé d'assistance technique pour produits Nestlé S.A.
CH-1814 La Tour-de-Peilz
Switzerland

SYRIA, Arab Rep.
REPUBLIQUE ARABE SYRIENNE
REPUBLICA ARABE SIRIA

Mr. Ahmad SH'AR
Second Secretary
Embassy of Syria
2215 Wyoming Avenue, N.W.
Washington, D.C. 20008
U.S.A.

THAILAND
THAILANDE
TAILANDIA

Prof. Amara BHUMIRATANA
Director
Institute of Food Research and Product Development
Kasetsart University
P.O. Box 4-170
Bangkok 4
Thailand

Dr. Prayoon DEEMA
Director, Pesticide Research Laboratory
Division of Entomology and Zoology
Department of Agriculture
Bangkhaen
Thailand

Mr. Somchai MUENNARINTR
Scientist, Biological Science Division
Department of Science Service
Ministry of Science, Technology and Energy
Bangkok
Thailand

UNITED KINGDOM
ROYAUME-UNI
REINO-UNIDO

Mr. C.I. LLEWELYN
Principal
Food Standard Division
Ministry of Agriculture, Fisheries and Food
Great Westminster House
Horseferry Road
London SW1
United Kingdom

Mr. Colin R. MYLCHREEST
Senior Executive Officer
Cereals Division
Ministry of Agriculture, Fisheries and Food
49 Parliament Street
London SW1
United Kingdom

Mr. L.E. GEORGE
Principal Scientific Officer, Food Science Division
Ministry of Agriculture, Fisheries and Food
Great Westminster House
Horseferry Road
London SW1
United Kingdom

Dr. N.L. KENT
Head of Information and Library Group
Flour Milling and Baking Research Association
Chorleywood
Rickmansworth
Hertfordshire
United Kingdom

UNITED STATES OF AMERICA
ETATS-UNIS D'AMERIQUE
ESTADOS UNIDOS DE AMERICA

Dr. R. WEIK
Assistant to the Director
Bureau of Foods
Food and Drug Administration
200 C Street, S.W.
Washington, D.C. 20204
U.S.A.

Dr. James L. DRISCOLL
Director, Standardization Division
Federal Grain Inspection Service
Department of Agriculture
Richards-Gebaur AFB, Bldg. 221
Grandview, Missouri 64030
U.S.A.

Dr. Prince G. HARRILL
Deputy Director, Food Technology
Bureau of Foods
Food and Drug Administration
200 C Street, S.W.
Washington, D.C. 20204
U.S.A.

Dr. Byron MILLER
Research Leader
U.S. Grain Marketing Research Center
Science and Education Administration
Department of Agriculture
1515 College Avenue
Manhattan, Kansas 66502
U.S.A.

Ms. Edith CHRISTENSEN
Chief, Rice and Commodities Branch
Inspection Division
Federal Grain Inspection Service
Room 0637-S
Department of Agriculture
Washington, D.C. 20205
U.S.A.

VENEZUELA

Dr. Gabriel PACHECO TRONOCONIS
Head of the Food Hygiene Division
Ministry of Health and Social Welfare
Caracas
Venezuela

Mr. Oscar PIETRI
Minister-Counselor (Agricultural Affairs)
Embassy of Venezuela
2445 Massachusetts Avenue, N.W.
Washington, D.C. 20008
U.S.A.

Mr. Rogelio VALLARDARES
Counselor (Scientific and Technological Affairs)
Embassy of Venezuela
2445 Massachusetts Avenue, N.W.
Washington, D.C. 20008
U.S.A.

OBSERVER
OBSERVATEUR
OBSERVADOR

SOUTH AFRICA
AFRIQUE DU SUD
SUDAFRICA

Mr. H.L. CRONJE
Assistant Director, Agronomy Products
Division of Inspection Services
Department of Agricultural Economics and Marketing
Pretoria
South Africa

ORGANIZATIONS
ORGANISATIONS
ORGANIZACIONES

INTERNATIONAL ASSOCIATION FOR CEREAL CHEMISTRY (ICC)

Dr. Claudia LINTAS
Deputy Italian National Delegate to ICC
Istituto Nazionale della Nutrizione
Via Lancisi, 29
00161-Rome, Italy

COUNCIL OF THE EUROPEAN COMMUNITIES

Mr. Uwe HESSE
Principal Administrator of the Secretariat
Council of the European Communities
Brussels
Belgium

COMMISSION OF EUROPEAN COMMUNITES (EEC)

Mr. Gerd JARCHOW
Administrator
Commission of European Communities
200, rue de la Loi
B-1049 Brussels
Belgium

Mr. Jean-Claude SCHUTZ
Administrator
Commission of European Communities
200, rue de la Loi
B-1049 Brussels
Belgium

INTERNATIONAL FEDERATION OF GLU GLUCOSE INDUSTRIES (IFG)

Mr. Charles FELDBERG
International Federation of Glucose Industries
CPC International Inc.
Englewood Cliffs, New Jersey 07632
U.S.A.

Ms. Gloria BROOKS-RAY
International Federation of Glucose Industries
CPC International Inc.
Englewood Cliffs, New Jersey 07632
U.S.A.

INTERNATIONAL LIFE SCIENCE INSTITUTE

Mr. Roger D. MIDDLEKAUFF
Secretary
International Life Science Institute
900 17th Street, N.W.
Washington, D. C.
U.S.A.

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)

Mr. Raymond TARLETON
Executive Director
American Association of Cereal Chemists
St. Paul, Minnesota 55121
U.S.A.

WORLD HEALTH ORGANIZATION
(WHO)

Mr. Frank A. BUTRICO
Chief, Division of Environmental Health Protection
Regional Office for the Americas – WHO
523 23rd Street, N.W.
Washington, D.C. 20037
U.S.A.

Mr. Guillermo H. DAVILA
Sanitary Engineer
Division of Environmental Health Protection
Regional Office for the Americas - WHO
523 23rd Street, N.W.
Washington, D.C. 20037
U.S.A.

FAO SECRETARIAT
SECRETARIAT DE LA FAO
SECRETARIA DE LA FAO

Mr. G.O. KERMODE
Chief, Joint FAO/WHO Food Standards Programme
Food and Agriculture Organization
Rome, Italy

Mr. H.J. McNALLY
Senior Officer
Joint FAO/WHO Food Standards Programme
Food and Agriculture Organization
Rome, Italy

Mrs. B.M. DIX
Food Standards Officer
Joint FAO/WHO Food Standards Programme
Food and Agriculture Organization
Rome, Italy

Mr. J.M. HUTCHINSON
Food Standards Officer
Joint FAO/WHO Food Standards Programme
Food and Agriculture Organization
Rome, Italy

ALINORM 81/29
APPENDIX II

PROPOSED DRAFT STANDARD FOR WHEAT FLOUR

Advanced to Step 3

1. SCOPE

1.1 This standard applies to flour for *[*direct*]* human consumption milled from common wheat, Triticum aestivum, or club wheat, Triticum compactum, or mixtures thereof.

1.2 This standard does not apply to meal, wholemeal or semolina (farina) milled from common wheat, Triticum aestivum, or club wheat, Triticum compactum, or mixtures thereof, nor to any product milled from durum wheat, Triticum durum.

1.3 This standard does not apply to flour for use as a brewing adjunct, to flour used for the manufacture of starch and/or gluten, *[*nor to flour for any food or non food industrial use*] [*except bakery*]*

2. DESCRIPTION

2.1 Flour is the product intended for *[*direct*]* human consumption prepared from grain of common wheat, Triticum aestivum, or club wheat, Triticum compactum, or mixtures thereof, by grinding or milling processes in which the bran and germ are largely removed and the endosperm is comminuted to a suitable degree of fineness.

2.2 Heat-treated flour is flour in which the enzymes have been wholly or partially inactivated by a heat treatment or which has been milled from heat-treated wheat.

2.3 Pregelatinized flour (quellmehl) is flour that has been heat treated so as to gelatinize the starch, thereby increasing the swelling capacity in water.

2.4 Instantized flour is flour from which the fine particles have been removed or in which the fine particles have been caused to agglomerate.

2.5 Air-classified flour is flour that has been submitted to a process of air classification in which a particle size separation is made at one or more sub-sieve sizes. Air-classified flour fractions differ from the parent flour in particle size, protein content and other characteristics.

2.6 Self-raising flour is flour to which self-raising ingredients have been added.

2.7 Enriched flour is flour to which a nutrient or nutrients have been added.

2.8 High-protein flour is flour in which the protein content has been enhanced by air classification or by the addition of gluten.

2.9 Starch-reduced flour is flour in which the carbohydrate content is significantly lower than that in normal flour.

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 Essential Composition

3.1.1 The wheat from which the flour is milled shall be of sound and marketable quality, free from abnormal smell and substantially free from pests, and of a colour and quality corresponding to the average quality of common wheat. It shall be practically

ungerminated and practically free from impurities, mould, seeds of weeds and other cereals.

3.1.2 Flour shall conform to the following compositional requirements, except in so far as certain requirements may be modified in the case of certain types of flour.

3.1.3 Ash - The yield of ash upon incineration shall not exceed 0.9% on a dry weight basis. This requirement shall not apply to flour to which chalk (calcium carbonate) has been added, nor to self-raising flour.

3.1.4 Acid-insoluble ash shall not exceed 0.05% on dry weight basis.

3.1.5 Crude fibre content shall not exceed 0.3% on dry weight basis.

3.1.6 Acidity - The acid value should not exceed the level specified in legislation of the country in which the flour is sold.

3.1.7 Protein (N x 5.7) shall be not less than 7% on dry weight basis. This requirement shall not apply to air-classified flour.

3.1.8 Wet gluten content shall be not less than 21% (m/m). This requirement shall not apply to air-classified flour.

3.1.9 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.

3.2 Technological Specification [1]

The successful use of flour for the preparation of further processed products is dependent upon the possession by the flour of certain technological qualities. Guidelines setting out these requirements for various types of further processed products as prepared in various countries could be incorporated in Codes of Practice.

3.3 Optional Ingredients [1]

3.3.1 The following ingredients may be added to flour:

- malted wheat flour or malted barley flour, in quantity not exceeding 1% (m/m),
- raising agents for self-raising flour: sodium bicarbonate, mono-calcium phosphate, sodium acid pyrophosphate, potassium acid tartrate, glucono-delta-lactone, acid sodium aluminium phosphate, [2]
- gluten,
- bean flour, within prescribed limits,
- soya flour, within prescribed limits,
- lecithin. [2]

[2] These substances will be moved to Section 4 - Food Additives.

3.3.2 Nutrients - The addition of vitamins, chalk and other minerals shall be in conformity with the legislation of the country in which the product is sold.

3.4 Quality Factors [1]

[1] These sections have not yet been discussed.

3.4.1 The flour and any added ingredients shall be clean, safe, suitable and of food quality.

3.4.2 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.

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, 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 13% (m/m).

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

3.5 Particle Size [1]

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.

3.5. 2 In the case of instantized flour, the whole of the product should pass through a sieve of 840 µm aperture size and not more than 20% should pass through a sieve of 74 µm aperture size.

4. FOOD ADDITIVES [1]

4.1 The use of flour treatment agents and the addition of emulsifiers, enzymes and preservatives shall be in conformity with the legislation of the country in which the product is sold.

4.2 Flour Treatment Agents

4.2.1 The Codex Alimentarius Commission Guide to the Safe Use of Food Additives, CAC/FAL 5-1979, lists the following flour treatment agents with the levels which are regarded as safe levels of treatment:

- ascorbic acid	0-200 mg/kg
- azodicarbonamide	0- 45 mg/kg
- benzoyl peroxide	0- 40 mg/kg
- chlorine dioxide	0- 30 mg/kg
- potassium bromate	0- 20 mg/kg
- stearoyl tartrate	0-500 mg/kg

4.2.2 Treatment of flour with L-cysteine, chlorine, sulphur dioxide or sodium metabisulphite is practised in some countries.

4.2.3 Treatment of flour by the electric arc process is also permitted in some countries.

4.3 Enzymes

The addition of fungal or bacterial amylase and proteolytic enzymes of suitable food quality is permitted.

5. CONTAMINANTS [1]

[1] These sections have not yet been discussed.

5.1 Pesticide Residues

5.1.1 The flour shall be prepared with special care under good manufacturing practices, so that residues of those pesticides which may be required in the production,

storage or processing of the wheat, intermediate milling products, or flour, or of the premises and equipment used for processing do not remain, or, if technically unavoidable, are reduced to the maximum extent possible.

5.1.2 Maximum residue limits for pesticides shall be those recommended by the Codex Alimentarius Commission (CAC/RS 65-1974; CAC/RS 71-1976).

5.2 Other Contaminants

The flour shall be practically free from pharmacologically active substances such as toxins derived from poisonous weed seeds or ergot.

6. HYGIENE [1]

6.1 To the extent possible in good manufacturing practice, the flour shall be free from objectionable matter.

6.2 The wheat used for milling the flour 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, the flour:

(a) shall be substantially free from pathogenic organisms;

(b) shall be substantially 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.

6.4 It may be desirable to specify maximum limits for specific microorganisms or types of microorganisms for flour which is to be used for particular end uses. Any such specification should be included in a Code of Practice.

6.5 The establishment of a detailed microbiological specification for flour is referred to the Codex Committee on Food Hygiene, while the establishment of methods of examination for level of microbiological contamination is referred to the Codex Committee on Methods of Analysis and Sampling.

6.6 The establishment of a standard for acceptable levels of mycotoxins in flour is referred to the contamination section of the Codex Committee on Food Additives.

6.7 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).

7. PACKAGING [1]

7.1 The 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 [1]

[1] The sections have not yet been discussed.

8.1 The following provisions in respect of the labelling of the product are subject to endorsement by the Codex Committee on Food Labelling.

8.2 Name of the Food

8.2.1 The product shall be described by any of the following names, which shall have the meanings ascribed to them:

8.2.2 Flour - The essential composition shall be as set out in Section 3.1 of this standard.

8.2.3[1] Products labelled Flour for breadmaking, Flour for biscuits, Flour for cake or Highratio cake flour shall be deemed to conform in essential composition to the requirements of Section 3.1 of this standard and also to conform with the technological specification of any appropriate Codes of Practice that may be established.

8.2.4 [1] Products labelled Heat-treated flour, Pregelatinized flour, Instantized flour, Air-classified flour, Self-raising flour, Enriched flour, High-protein flour, or Starch-reduced flour shall be understood to conform with the descriptions of these products set out in Section 2.2 to 2.9 of this standard.

[1] Changes may have to be made in light of decisions taken in Sections 2 and 3.

8.3 List of Ingredients

A complete list of the optional ingredients present in the product shall be declared on the label in descending order of proportion except that in the case of added vitamins and minerals, these shall be arranged as separate groups for vitamins and for minerals, respectively, and within these groups the vitamins and minerals need not be listed in descending order of proportion.

8.4 Declaration of Treatment and Food Additives

Mention shall be made on the label or on the invoice of any flour treatment agents or food additives present in the product and of the levels of treatment or addition.

8.5 Declaration of Nutritive Value

In addition to any other nutritional information required by national legislation, the total quantity in the final product of each vitamin and mineral added according to Section 3.3.2 shall be declared per 100 g.

8.6 Name and Address

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

8.7 Country of Origin

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

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

8.8 Lot Identification

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

8.9 Storage Instructions

Storage instructions shall appear on the label.

9. METHODS OF SAMPLING AND ANALYSIS [1]

[1] This section has not yet been discussed.

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

9.1 Sampling

9.1.1 According to ISO 2170-1972 Cereals and pulses - sampling of milled products.

9.1.2 A draft standard on mechanical sampling is in preparation (ISO/DIS 6644 Cereals and milled products - automatic sampling by mechanical means).

9.2 Determination of Moisture

According to ISO 712-1979 Cereals and cereal products - determination of moisture (routine method).

9.3 Determination of Granularity

According to ISO 2591-1973 Test sieving.

9. 4 Determination of Ash

According to ISO 2171-1972 Cereals, pulses and derived products - determination of ash.

9. 5 Determination of Acid-insoluble Ash

9.5.1 No method has been standardized internationally.

9.5.2 A method for determination of ash insoluble in hydrochloric acid is quoted in Modern Cereal Chemistry by D.W. Kent-Jones & A.J. Amos, Northern Publ. Co., 5th Edn., 1957, p. 566.

9.6 Determination of Acidity

According to AOAC Methods 14.064 to 14.066 (Official Methods of Analysis of the AOAC, 12th Ed., 1975, page 232).

9.7 Determination of Crude Fibre

According to ISO/DIS 5498 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.

9.8 Determination of Protein

9.8.1 According to ISO 1871-1975 Agricultural Food Products - General directions for the determination of nitrogen by the Kjeldahl method, or by AOAC method 14.026 (Official Methods of Analysis of the AOAC, 12th Ed., 1975, page 226). Protein content is calculated by multiplying the nitrogen content by 5.7.

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

9.9 Determination of Alpha-amylase Activity

According to ISO 3093-1974 Cereals, determination of Falling Number.

9.10 Determination of Wet Gluten

According to ISO 5531-1978 Wheat Flour - determination of wet gluten.

9.11 Determination of Thiamine

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

9.12 Determination of Riboflavin

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

9.13 Determination of Niacin

According to the AOAC Methods 43.044-43.050 (Official Methods of Analysis of the AOAC, 12th Ed., 1975, pages 827-829).

9.14 Determination of Iron

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

PROPOSED DRAFT STANDARD FOR MAIZE (CORN)
(at Step 6)

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 and/or shelled flint maize (Zea mays L.). It does not apply to processed maize.

2. DESCRIPTION

2.1 Product Definition

Maize shall be the shelled, *[*evenly*]* dried *[*matured*]* grains, characteristic of the species Zea mays L.

2.2 Presentation

2.2.1 Maize may be presented as yellow, white or *[*red*]* or a mixture of these colours that are natural to the species. It may also be presented as flint or dent separately.

2.2.2[1] Yellow maize includes all varieties of yellow and may not include more than 5% by weight of grains of other colours of maize. White maize must not contain more than 2% by weight of coloured maize grains. Mixed maize includes lots of maize not falling into classes of white or yellow.

2.2.3[1] The three basic classes are further qualified as Flint or Dent if 95% or more of the grains by weight are of a particular variety.

[1] Changes will have to be made in this section to reflect the addition of "red" to 2.2.1.

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 General Requirements

3.1.1 Lots of maize grains shall not contain grains with any abnormal or foreign odour or flavour.

3.1.2 Lots of 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 [1]

Lots of maize grains shall be free from adulteration.

3.2.1 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 or flavour is injuriously affected or its bulk or mass altered.

3. 3 Analytical Characteristics

3.3.1 Moisture Content

The moisture content of lots of dried maize grains shall not exceed [15%] (m/m).

3.2.2 Fat Acidity [1]

Fat acidity, expressed as the number of milligrams of normal potassium hydroxide required to neutralize the free fatty acids from 100 g of grain and calculated on moisture-free basis, shall not exceed 20.

3.4 Definition of Defects [1]

3.4.1 Blemished grains means grains which are insect damaged, stained, diseased or discoloured.

3.4.2 Broken or Chipped Grains

This may be defined as grains (a) which have been broken or chipped beyond the pericarp and horny endosperm or in the embryo area and which pass through a sieve having a base plate perforated with round holes with a diameter of 12/64 (4.75 mm) or (b) which are smaller than half the size of the grain of the variety involved.

3.4.3 Germinated Grains [1]

This is grain which has sprouted or in which the process of germination is visible within the embryo.

3.4.4 Shrivelled Grain [1]

*[*This is grain which is shrivelled over its entire surface and not just over the embryo area only*]*.

3.4.5 Extraneous Vegetable Material (E.V.M.) means any leaf or cob material from the maize plant or other vegetable material such as grass weeds or other cereals.

3.4.6 Filth [1]

[1] This section has not yet been discussed.

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

3.5 Tolerances for Defects

Based on a sample unit of 500g, the product shall have not more than the following:

3.5.1	Total blemished grains	5% m/m
3.5.1.1	Stained grains	nil
3.5.1.2	Insect damaged grains	5% m/m
3.5.1.3	Diseased grains	3% m/m
3.5.1.4	Discoloured grains	2% m/m
3.5.2	Broken or chipped grains	5% m/m
3.5.3	Germinated Grains	1% m/m
3.5.4	Shrivelled grains	1% m/m
3.5.5	E.V.M.	1% m/m
3.5.6	Filth	0.5% m/m

4. CONTAMINANTS [1]

If pesticides and other permitted chemicals are used to control insects, rodents and other animals, 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. Maximum residue limits for pesticides shall be those recommended by the Codex Alimentarius Commission (CAC/RS 65-1974, CAC/RS 71-1976, CAC/RS 100-1978).

5. HYGIENE [1]

5.1 It is recommended that the product covered by the provisions of this standard 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 (Ref. No. CAC/RCP 1-1969).

5.2 To the extent possible in good production practice, the product shall be free from objectionable matter.

6. PACKAGING AND LABELLING [1]

6.1 Bags shall be clean, sound, sufficiently strong and properly sewn. Bags and liners, if used, shall be of materials which do not present a hazard to human health. Markings shall be of edible ink or lead-free paint.

6.2 Each bag of maize grains shall be officially sealed. The bag or seal shall show at least the following information:

(a) The country of origin
(b) The name of the product
(c) Any other identification marks necessary in accordance with Codex regulations in force

7. METHODS OF ANALYSIS AND SAMPLING [1]

[1] This section has not yet been discussed.

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

7.1 Moisture - Air Oven Method (AACC Method 44.15A).

This method determines moisture content as loss in weight of a sample when heated under specific conditions.

Apparatus

1. Oven (either gravity-convection or mechanical-convection), capable of being maintained at 103ºC. (±1º) and provided with good ventilation. Thermometer shall be so situated in oven that tip of bulb level with top of moisture dishes but not directly over any dish.

2. Moisture dishes having diameter of ca. 55 mm. and height of ca. 15 mm. They should be of heavy-gage aluminium with slightly tapered sides and provided with tightly fitting slip-in covers which are designed to fit snugly under dishes when they are placed in oven. Both dish and cover should be identified by same number. Before using, dry for 1 hr. at 130ºC, cool in desiccator, and obtain tare weight (see Note 1).

3. Air-tight dessicator containing activated alumina, Molecular Sieves (type 4A or 4A X W), or other equally suitable desiccant (see Note 2).

4. Balance, accurate to at least 1 mg.

Procedure

Place approx. 15 g. of representative portion of unground sample in each of two or more tared moisture dishes. Weigh covered dishes and contents. Subtract wt. of each dish from total wt. and record result as wt. of sample. Put covers under dishes and heat for 72 h. in oven regulated at 103º ± 1ºC. Dishes should be placed on single shelf with bulb of oven thermometer as close as possible to them. At end of heating period, remove shelf containing dishes, cover dishes immediately and place in desiccator. Weigh dishes when they reach room temperature. Determine loss in weight as moisture by using equation 1 under Calculation.

Replicate determinations should check within 0.2% moisture.

Calculation: $$\% \text{ moisture} = \frac{A}{B} \times 100$$

in which

A = moisture loss in g.
B = original weight of sample

Notes

1. Tare weight will usually remain constant within few tenths of mg. for approximately 1 year if dishes are damped and then carefully wiped clean with soft cloth.

2. Silica gel and anhydrous calcium chloride are not suitable desiccants.

7.2 Fat Acidity (AACC Method 02-01)

Fat acidity is defined as the number of milligrammes of potassium hydroxide required to neutralize the free fatty acids from 100 g of grain and calculated on a moisture-free basis. It is an estimate of the degree of soundness of the grains.

Reagents

(a) Alcohol-Benzene-Phenolphtalein solution. To 1 litre benzene add 1 litre 95%

ethanol and 0.4 g phenolphtalein to form 0.2% solution.

(b) Alcohol-phenolphtalein solution. To 1 litre 95% ethanol add 0.4 g phenolphtalein (0.04% solution).

(c) Potassium hydroxide standard solution - 0. 0178N, CO_2 - free standard solution (1 ml = 1 mg KOH).

(d) Petroleum ether, B. pt. range 40º-60ºC.

Apparatus

(a) Grain mill - suitable for grinding small samples

(b) Fat Extraction device - Soxhlet (Double paper thimbles or Alundum RA - 360 thimbles).

Procedure

Obtain a representative sample of about 200 g. Grind sample so that not less than 90% will pass No. 40 U.S. Standard sieve (Mesh size 40 u). If sample is too moist to grind readily, dry at temperature of about 100ºC just long enough to remove excess moisture.

Extract about 10 g ground sample with petroleum ether for about 16 hours in extractor. Start as soon as possible after grinding and never let ground sample remain overnight. Completely evaporate solvent from extraction on steam bath. Dissolve residue in extraction flask with 50 ml alcohol-benzene-phenolphtalein solution. Titrate dissolved extract with standard Potassium Hydroxide (KOH) solution to distinct pink; in case of yellow solution to orange-pink. If emulsion forms during titration dispel by adding second 50 ml portion of benzene-alcohol-phenolphtalein solution. End point should match colour of portion of solution made by adding 2.5 ml 0. 01% potassium permanganate ($KMn\ O_4$) solution to 50 ml potassium dichromate ($K_2Cr_2O_7$) solution of proper strength to match colour of original solution being titrated. (Add 0. 5% $K_2Cr_2O_7$ solution dropwise to 50 ml H_2O until colour matches. Then add 2.5 ml 0.01% $KMn\ O_4$ solution).

Make blank titration on 50 ml benzene-alcohol-phenolphtalein solution and subtract this value from titration value of sample. If additional 50 ml portion benzene-alcohol-phenolphtalein solution was added, double blank titration.

Calculation

Report fat acidity as mg KOH required to neutralize free fatty acids from 100 g maize on dry-matter basis by formula:

Fat acidity value = 100 x (titration - blank)

7.3 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).