

codex alimentarius commission

FOOD AND AGRICULTURE
ORGANIZATION
OF THE UNITED NATIONS

WORLD HEALTH
ORGANIZATION

Via delle Terme di Caracalla 00100 ROME Tel.: 57971 Telex: 625852-
625853 FAO I Cables: Foodagri Rome Facsimile: (6) 57973152-

JOINT OFFICE:

5782610

ALINORM 91/29

JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX ALIMENTARIUS COMMISSION

Nineteenth Session
Rome, 1–10 July 1991

REPORT OF THE SEVENTH SESSION OF THE
CODEX COMMITTEE ON CEREALS, PULSES AND LEGUMES
Washington, D.C., 22–26 October 1990

Note: This document incorporates Codex Circular Letter CL 1990/42-CPL.

TO: - Codex Contact Points
- Interested International Organizations

FROM: Chief, Joint FAO/WHO Food Standards Programme, FAO, Via delle Terme di Caracalla, 00100 Rome, Italy

SUBJECT: **Distribution of the Report of the Seventh Session of the Codex Committee on Cereals, Pulses and Legumes (ALINORM 91/29)**

The report of the Seventh Session of the Codex Committee on Cereals, Pulses and Legumes is attached. It will be considered by the 19th Session of the Codex Alimentarius Commission to be held in Rome from 1–10 July 1991.

A. MATTERS OF INTEREST TO THE COMMISSION ARISING FROM THE REPORT OF THE SEVENTH SESSION OF THE CODEX COMMITTEE ON CEREALS, PULSES AND LEGUMES

The following matters will be brought to the attention of the 19th Session of the Codex Alimentarius Commission:

1. Draft Standard for Durum Wheat Semolina and Durum Wheat Flour at Step 8; ALINORM 91/29, paras. 33–46 and Appendix III.
2. Draft Amendment to the Fat Acidity Provision in the Codex Standard for Wheat Flour at Step 8; ALINORM 91/29, paras. 12–18.

Governments wishing to propose amendments or comments on the Draft Standard for Durum Wheat Semolina or Durum Wheat Flour and the Draft Amendment of the Fat Acidity Provision in the Codex Standard for Wheat Flour should do so in writing in conformity with the Guide to the Consideration of Standards at Step 8 (see Codex Alimentarius Procedural Manual, Seventh Edition) to the Chief, Joint FAO/WHO Food Standards Programme, FAO, Via delle Terme di Caracalla, 00100 Rome, Italy, not later than 31 March 1991.

3. Proposed Draft Guideline Levels for Contaminants in Cereals, Pulses and Legumes at Step 5; ALINORM 91/29, paras. 19–24.

Governments wishing to submit comments regarding the implications which the Proposed Draft Guideline Levels for Contaminants in Cereals, Pulses and Legumes or any other provisions thereof may have for their economic interests should do so in writing in conformity with the Procedure for the Elaboration of Worldwide Codex Standards (at Step 5) (see Codex Alimentarius Procedural Manual, Seventh Edition) to the Chief, Joint FAO/WHO Food Standards Programme, FAO, Via delle Terme di Caracalla, 00100 Rome, Italy, not later than 31 March 1991.

B. DOCUMENTS OF INTEREST TO BE ELABORATED FOR DISTRIBUTION AND/OR GOVERNMENT COMMENT PRIOR TO THE EIGHTH SESSION OF THE CCCPL

NOTE: The elaboration of the following proposals are subject to approval by the 19th Session of the Codex Alimentarius Commission.

1. Proposed Draft Codex Standards for Wheat, Durum Wheat and Peanuts (United States); see ALINORM 91/29, paras. 65 and 71.

2. Proposed Draft Codex Standard for Oats (Argentina); see ALINORM 91/29, para. 59.
3. Proposed Draft Amendment of the Codex Standard for Durum Wheat Semolina and Flour to include a Method of Analysis for Particle Size (Governments); see ALINORM 91/29, para. 43.
4. Proposed Draft Amendment of the Codex Standard for Durum Wheat Semolina and Flour to include a Fat Acidity Provision and Related Method of Analysis (Governments); see ALINORM 91/29, para. 44.
5. Proposed Draft Amendment of the Codex Standard for Wheat Flour to revise the Fat Acidity Provision and Related Method of Analysis (France); see ALINORM 91/29, paras. 12–18.

C. REQUEST FOR COMMENTS AND INFORMATION

1. Consideration of the Proposed Draft Standard for Rice at Step 3. ALINORM 91/29, paras. 47–54, and Appendix IV

The Committee agreed to return the proposed Draft Standard for Rice to Step 3 for circulation and comment, with the understanding that the comments will be reviewed at the Committee's Eighth Session.

2. Consideration of Proposed Draft Guideline Levels and Sampling Plans for Aflatoxins in Peanuts at Step 3. ALINORM 91/29, paras. 25–32 and Appendix II

The Committee agreed that the proposed Draft Guideline Levels and Sampling Plans for Aflatoxins in Peanuts be circulated for government comments. The decision was made with the understanding that comments will also be solicited from the Codex Committee on Food Additives and Contaminants and from the Codex Alimentarius Commission.

Governments and international organizations wishing to submit comments on the above subject matter are invited to so no later than 15 May 1992 as follows: Mr. Steven N. Tanner, Assistant to the Administrator, for Technology, USDA, Federal Grain Inspection Service, Room 1095, South Building, P.O. Box 96454, Washington, D.C.20090-6454 (U.S.A.). In addition, please forward a copy of the comments to: Chief, Joint FAO/WHO Food Standards Programme, FAO, Via delle Terme di Caracalla, 00100 Rome, Italy.

SUMMARY AND CONCLUSIONS

The Seventh Session of the Codex Committee on Cereals, Pulses and Legumes reached the following conclusions during its deliberations:

- Agreed to forward the **draft amendment of Section 3.3.2 (fat acidity) of the Codex Standard for Wheat Flour** for adoption by the Commission at Step 8, (paras. 12-18);
- Agreed to forward the **proposed draft guideline levels for contaminants in cereals, pulses and legumes** for endorsement by the Codex Committee on Food Additives and Contaminants and for adoption by the Commission at Step 5, (paras. 19-24);
- Agreed to circulate the **proposed draft guidelines levels and sampling plans for aflatoxins in peanuts** to the Codex Committee on Food Additives and Contaminants and to governments for comment at Step 3, (paras. 25-32);
- Agreed to forward the **Draft Codex Standard for Durum Wheat Semolina and Durum Wheat Flour** for adoption by the Commission at Step 8, (paras. 33-46);
- Agreed to elaborate a **proposed revision of the Codex Standard for Durum Wheat Semolina and Durum Wheat Flour** to include a method of analysis for determination of particle size, (para. 43);
- Agreed to elaborate a **proposed revision of the Codex Standard for Durum Wheat Semolina and Durum Wheat Flour** to include a fat acidity provision and related methods of analysis, (para. 44);
- Agreed to circulate the **proposed draft Codex Standard for Rice** for government comments at Step 3, (paras. 47-54) and;
- Agreed to elaborate **proposed draft Codex Standards for Oats, Durum Wheat, Wheat and Peanuts** pending approval by the Commission, (paras. 55-71).

TABLE OF CONTENTS

	<u>Paragraph</u>
INTRODUCTION	1
OPENING OF THE SESSION	2 - 3
ADOPTION OF THE AGENDA	4
MATTERS OF INTEREST ARISING FROM THE COMMISSION AND OTHER CODEX COMMITTEES	5 - 10
MATTERS OF INTEREST ARISING FROM INTERNATIONAL ORGANIZATIONS	11
CONSIDERATION OF FAT ACIDITY PROVISIONS IN THE CODEX STANDARD FOR WHEAT FLOUR	12 - 18
PROPOSED DRAFT GUIDELINE LEVELS FOR CONTAMINANTS IN CEREALS, PULSES AND LEGUMES	19 - 24
GUIDELINE LEVELS AND SAMPLING PLANS FOR AFLATOXINS IN CEREALS PULSES AND LEGUMES	25 - 32
DRAFT STANDARD FOR DURUM WHEAT SEMOLINA AND DURUM WHEAT FLOUR	33 - 46
PROPOSED DRAFT STANDARD FOR RICE	47 - 54
CONSIDERATION OF PROPOSALS TO ELABORATE CODEX STANDARDS FOR OATS, WHEAT, DURUM WHEAT AND PEANUTS	55 - 71
FUTURE WORK	72
OTHER BUSINESS	73
DATE AND PLACE OF NEXT SESSION	74

APPENDICES

APPENDIX I:	LIST OF PARTICIPANTS
APPENDIX II:	PROPOSED DRAFT GUIDELINE LEVELS AND SAMPLING PLANS FOR AFLATOXINS IN PEANUTS FOR HUMAN CONSUMPTION
APPENDIX III:	DRAFT STANDARD FOR DURUM WHEAT SEMOLINA AND DURUM WHEAT FLOUR
APPENDIX IV:	PROPOSED DRAFT STANDARD FOR RICE

INTRODUCTION

1. The Seventh Session of the Codex Committee on Cereals, Pulses and Legumes was held in Washington, D.C., from 22-26 October 1990 by courtesy of the Government of the United States of America. The Session was chaired by Mr. Steven Tanner, Assistant to the Administrator for Technology, Federal Grain Inspection Service, United States Department of Agriculture. A list of the participants at the Session is attached as Appendix I to this report.

OPENING OF THE SESSION (Agenda Item 1)

2. Mr. John C. Foltz, Administrator, Federal Grain Inspection Service, U.S. Department of Agriculture, highlighted the importance of developing valid and relevant standards that foster fair trade and enhance the safety and quality of the world's food supply. Mr. Foltz introduced the guest speaker, Mrs. Jo Ann R. Smith, Assistant Secretary for Marketing and Inspection Services, U.S. Department of Agriculture.

3. Mrs. Smith emphasized the benefits of Codex work for consumers, government and producers and noted that the efforts of the Commission will be strengthened through the forthcoming Conference on Food Standards, Chemicals in Food and Food Trade. Mrs. Smith also addressed the importance of this committee's deliberations concerning the prevention of technical barriers to international trade and strengthening the relationship between Codex and the General Agreement on Tariffs and Trade (GATT), especially in view of current deliberations in the GATT Working Group on Sanitary and Phytosanitary Regulations and Barriers. Mrs. Smith concluded her remarks by noting the importance of past efforts and future work of the Committee, which are considered essential to ensuring a safe and economical world food supply.

ADOPTION OF THE AGENDA (Agenda Item 2)

4. The Committee had before it the Provisional Agenda for the Session (CX/CPL 90/1) and agreed to adopt the agenda as presented.

MATTERS OF INTEREST ARISING FROM THE CODEX ALIMENTARIUS COMMISSION AND OTHER CODEX COMMITTEES (Agenda Item 3A)

5. The Committee had before it working paper CX/CPL 90/2 which, among other issues, summarized matters of interest arising from the activities of other Codex Committees.

6. The Committee noted that there were a number of matters which would be discussed under other agenda items and agreed to defer specific discussions on these issues until the particular agenda item was presented.

Proposed Draft Codex Standard for Rice

7. The Committee noted that the Commission approved the elaboration of a Codex Standard for Rice, including Milled Rice, notwithstanding the reservations of the Delegation of Thailand who stated that the ISO Standard for Rice was sufficient (paras. 475-477, ALINORM 89/40). These reservations were also endorsed by the 7th Session of the Coordinating Committee for Asia, (paras. 171-176, ALINORM 91/15). However, the most recent 37th Session of the Executive Committee noted that the CAC approached this matter with a considerable degree of caution, and that the views of all Coordinating Committees had been available to the Commission at the time of this discussion. The CCEXEC also noted that Codex procedures allow for other opportunities to examine and discuss the merits of proceeding with such a standard, (para. 60,

ALINORM 91/3). The Committee agreed to discuss this subject under Agenda Item 8 (see paras. 47-54).

Codex Standard for Wheat Flour

8. The Committee noted that the Commission endorsed (paras. 464-469, ALINORM 89/40) the provisions for chlorine, chlorine dioxide, benzoyl peroxide, azodicarbonamide and potassium bromate in the Wheat Flour Standard (CODEX STAN. 152-1985) as published in Volume XVIII of the Codex Alimentarius. The Committee was advised that these amendments will be included in the standard when revised.

Codex Standards for Certain Pulses, Sorghum Grain and Sorghum Flour

9. The Committee was informed that the above standards were adopted by the Commission (paras. 456, 458 and 460 respectively, ALINORM 89/40) and have been published in Supplement 1 to Volume XVIII of the Codex Alimentarius, as Codex Standards 171-189, 172-189 and 173-189, respectively.

Draft Codex Standard for Durum Wheat Semolina and Durum Wheat Flour

10. The Committee noted, that the Commission adopted the above standard at Step 5 (para. 461, ALINORM 89/40) while the labelling sections were endorsed by the 20th Session of the Codex Committee on Food Labelling, (para. 40, ALINORM 89/22). In addition, the Committee noted that the methods of analysis proposed were endorsed by the 16th Session of the Codex Committee on Methods of Analysis and Sampling (Part III, Appendix IV, ALINORM 89/23), while the sampling methods were temporarily endorsed (para. 40, ALINORM 89/23). The Committee agreed to discuss this subject in further detail under Agenda Item 7 (See paras. 33-46).

MATTERS ARISING FROM ACTIVITIES OF OTHER INTERNATIONAL ORGANIZATIONS (Agenda Item 3B)

11. The Committee noted Conference Room Document 1, entitled "Progress Report on the Activity of ISO/TC 34/SC 4 Cereals and Pulses" covering the activities and deliberations of the International Organization for Standardization Working Group from July 1988 to July 1990.

CONSIDERATION OF SECTION 3.3.2 (FAT ACIDITY) AND METHODS OF ANALYSIS FOR THE DETERMINATION OF FAT ACIDITY IN THE CODEX STANDARD FOR WHEAT FLOUR (Agenda Item 4)

12. The Committee noted that the amendment to increase the provision for fat acidity in the Codex Standard for Wheat Flour from 30 mg to 50 mg KOH/100g was adopted at Step 5 by the Commission while taking government comments into account (CL 1988/51-CPL). The Commission advanced the amendment to Step 6 (para. 471, ALINORM 89/40) for additional government comments (CL 1989/30-CPL). Documents CX/CPL 90/7 and Conference Room Document 10 summarized government comments submitted at Steps 5 and 6, and the Committee proceeded to consider the amendment at Step 7.

13. The Delegation of France informed the Committee that information had been provided (Conference Room Document' 10) of a study undertaken in support of an earlier proposal made by France and the Groupement de l'Association de la Meunerie Européenne (GAM) to consider amending the Codex Standard for Wheat Flour to include an ISO method to replace the AOAC method for determination of fat acidity. It was recalled that this data was requested by the Committee at its previous session in order to Justify the proposal, (paras. 27-29, ALINORM 89/29). On the basis of results

obtained from this data, the Delegation of France proposed that a maximum fat acidity value of 70-80 mg/100g (expressed as sulphuric acid) be adopted by the Committee in accordance with ISO method 7305 in order to amend Section 3.3.2 of the Standard.

14. The Delegation of the United States pointed out that the Codex Standard for Wheat Flour referred to a specific limit of fat acidity (expressed as mg of KOH) which is tied exclusively to the AOAC method currently in the Standard. The Delegation of the United States noted that the AOAC and ISO methods do not give comparable results for the determination of fat acidity in wheat flours as they do not measure this level on the same basis. The Delegation also noted that data presented in the GAM study were limited to two samples only and did not represent the status of commodities in international trade.

15. The observer of GAM emphasized that the data presented were limited to two samples only as they complemented previous studies undertaken by ISO when standardizing this method in order to provide additional information. The observer noted that the results of the AOAC method could vary as a function of the moisture content of the same sample. The Delegation of France supported this statement.

16. The Delegation of the United Kingdom, supported by Canada, the United States and Spain, emphasized that the proposed amendment to the fat acidity level was linked to the current AOAC method, and that only one limit should be included in the Standard. It was noted that if a new method was proposed, it would require a corresponding change in the fat acidity basis and measurement.

17. At the suggestion of the Delegation of the United Kingdom, the Committee agreed to forward the draft amendment of section 3.3.2 (Fat Acidity) of the Codex Standard for Wheat Flour to Step 8 for adoption by the Commission with the understanding that the corresponding AOAC method would be maintained. The Committee also noted that this limit should only apply to white flours of extraction rates up to 75%.

18. The Committee also agreed that an exhaustive document could be prepared by France in order to support the elaboration of a proposed revision of this section to include the ISO method. The proposal would be prepared for circulation and government comment at Step 3, with the understanding that this procedure would require the approval of the 19th Session of the Commission.

PROPOSED DRAFT GUIDELINE LEVELS FOR CONTAMINANTS IN CEREALS, PULSES AND LEGUMES (Agenda Item 5)

19. The Committee examined working document CX/CPL 90/3 and Conference Room Document 5 when discussing this Agenda item, which summarized government comments on the proposed draft guideline levels for arsenic, cadmium, mercury and lead as elaborated at the sixth CCCPL session, (paras. 33-38, ALINORM 89/29). The Committee recalled that these levels were proposed on the basis of an earlier survey undertaken by the Committee (CX/CPL 88/3), and government comments were solicited at step 3 under CL 1988/51-CPL.

20. The Committee was informed that the most recent 22nd Session of the Codex Committee on Food Additives and Contaminants (CCFAC) had also considered the establishment of guideline levels for cadmium and lead in various food groups, while taking account of the levels proposed by the CCCPL. The CCFAC, however, could not agree on the establishment of specific levels in view of differences in levels of contamination in various regions and differences in national regulations (paras. 147-158,

ALINORM 91/12). As a result of these discussions, the CCFAC decided to seek further government comment (CL 1990/17-FAC) on national regulations, methods of compliance/enforcement and supporting information (e.g., intake data, trading problems, etc.).

21. In discussing the establishment of guideline levels, the Committee agreed to the importance of establishing realistic proposals to prevent the creation of possible technical barriers to trade, and noted that levels were more logically established for individual commodity groups as opposed to all foods in general. The Delegation of France, as supported by several other Delegations, noted the importance of determining naturally occurring contaminant levels in commodities where levels are proposed. The Delegation of France also noted that maximum levels for heavy metals should be set on raw as well as processed products (e.g., bran).

22. The Committee focused its discussion on establishing a guideline level of 0.1 mg/kg for cadmium, as proposed in written comments from the Federal Republic of Germany and Norway.

23. The Delegations of France, Sweden, the United Kingdom, Australia and Switzerland supported the establishment of this level as it was felt that the earlier level proposed by the Committee (0.05 mg/kg) was unrealistically low. The Delegations of Canada and the Netherlands, while noting that the level may need to be higher depending on the commodity, agreed that the level of 0.1 mg/kg might be acceptable in the future, but at present the level of 0.15 mg/kg is required in view of data collected in a Dutch study concerning acceptable cadmium limits.

24. Discussions concerning the establishment of guideline levels for arsenic, mercury and lead confirmed the Committee's general support for the levels established at its previous session. The Delegation of Sweden, however, felt that the proposed level for lead was too high. Nevertheless, the Committee decided to advance the following proposed draft guideline levels through the Codex Committee on Food Additives and Contaminants for endorsement and to the Commission for adoption at Step 5.

Contaminant	<u>Proposed Draft Guideline Levels for Cereals Pulses and Legumes</u>
Arsenic	0.5 mg/kg
Cadmium	0.1 mg/kg
Mercury	0.05 mg/kg
Lead	0.5 mg/kg

CONSIDERATION OF GUIDELINE LEVELS AND SAMPLING PLANS FOR AFLATOXINS IN CEREALS, PULSES AND LEGUMES (Agenda Item 6)

25. The Committee had before it working documents CX/CPL 90/8 and Conference Room Documents 3 and 12 when discussing this Agenda Item, which summarized government comments received concerning this issue in response to CL 1988/50-CPL and CX/CPL 90/8 - Add.1.

26. The Committee recalled its discussion at its previous session concerning this subject (paras. 39-51, ALINORM 89/29), whereby it was concluded that a simple and practical sampling plan for cereals, pulses and legumes could be used based on the principle of average of the lot by a single randomly selected composite (CX/CPL 88/9, App.1, Plan IIC). In addition, the previous CCCPL Session, while recognizing that guideline levels for aflatoxins were closely tied to the sampling plan used, decided to propose levels of 5 µg/kg for aflatoxin B₁ or, alternatively 15 µg/kg for total aflatoxin in

cereals, pulses and legumes. The Committee had agreed to solicit government comments on the proposed draft sampling plan and guideline levels in document CL 1988/50-CPL.

27. As summarized in Document CX/CPL 90/8, Add.1, the Committee also noted discussions held at the 22nd Session of the Codex Committee on Food Additives and Contaminants concerning the establishment of guideline levels and sampling plans for aflatoxins in foods in general. The Committee was informed that the CCFAC had decided to propose a sampling plan based on a minimum sample size of 3 kg for a lot of at most 25,000 kg for bulk samples. The latest CCFAC Session also agreed to a compromise level of 10 fig/kg for total aflatoxin in all foods. Comments concerning the proposed sampling plan and level have been solicited in document CL 1990/17-FAC, (paras. 116-146, ALINORM 91/12).

28. The Committee reaffirmed its earlier decision that any proposed guideline level would need to be linked to a sampling plan, and decided to consider the two issues simultaneously. The Committee noted the written comments of the Netherlands, as contained in CRD 3, whereby the sampling plan proposed at the earlier CCCPL Session for peanuts was reintroduced for discussion (CX/CPL 88/9, Appendix 1, Plan IIB). In addition, the Committee noted the written comments of the United States, which suggested that sampling plans and guideline levels should be established for specific commodities based on available data rather than applying the peanut data to cover all foods. It was noted by the Delegation of the United States that a plan and level could be proposed for peanuts by the Committee in view of the existence of extensive data. In proposing an aflatoxin sampling plan, the United States recommended that the Committee consider the 31st report of JECFA (Technical Report Series 759) which urged the control of aflatoxin at the lowest practical level without severely compromising the availability of a food product. The Delegation of the United States also expressed a need for the development of sufficient data to evaluate the impact of any proposed sampling plan on the availability of specific commodities in international trade.

29. The Delegation of Denmark agreed with the plan proposed by the CCFAC of a sample size of 3 kg for a lot of at most 25,000 kg for bulk samples. The Delegations of Switzerland, Egypt and the United States did not support the CCFAC plan as the sample size was felt to be inadequate. The Committee decided not to consider the CCFAC plan for the basis of its discussions and continued to focus its attention on a sampling plan and guideline level for peanuts only.

30. In view of the difficulty in establishing sampling plans and guideline levels for cereals, pulses and legumes in general, the Committee also agreed to withhold a decision concerning its earlier proposals, pending the outcome of deliberations at the forthcoming CCFAC meeting. The Committee continued to discuss the two plans proposed by the United States and the Netherlands for peanuts as contained in Conference Room Document 3, and decided that both plans should be circulated for government comments. A corresponding guideline level for total aflatoxins in peanuts for human consumption was also agreed upon at a level of 15 $\mu\text{kg}/\text{kg}$ (raw) and 10 $\mu\text{kg}/\text{kg}$ (processed). The Committee noted that the data indicated that 15 $\mu\text{kg}/\text{kg}$ was a practical limit for raw peanuts, which was the product in trade. Data also indicated that normal processing would be expected to result in residues in processed peanuts within the 10 $\mu\text{kg}/\text{kg}$ figure. The Delegation of France also noted that it was necessary to establish a B₁ level for aflatoxins.

31. The Committee also agreed with a suggestion made by the Delegation of the United States to strongly recommend to FAO and WHO the convening of an expert consultation on sampling plans for aflatoxins to examine the various issues concerning this subject. The Delegations of Australia, Canada and the United Kingdom supported the need for an expert consultation.

32. The proposed draft guideline levels and sampling plans for total aflatoxins in peanuts are attached to this report as Appendix II. Government comments are being solicited at Step 3, with the understanding that the Commission will agree to the elaboration of these proposals. In addition, the Committee agreed to forward these discussions to the 23rd Session of the CCFAC for comment.

CONSIDERATION OF THIS DRAFT CODEX STANDARD FOR DURUM WHEAT SEMOLINA AND DURUM WHEAT FLOUR (Agenda Item 7)

33. The Committee had before it document CX/CPL 90/4 when discussing this agenda item, which summarized government and international organization comments on the Draft Standard for Durum Wheat Semolina and Durum Wheat Flour (ALINORM 89/29, Appendix V) at Step 6, as requested in CL 1989/30-CPL. The Committee noted its earlier discussions concerning the elaboration of this Standard, as summarized under Agenda Item 3A (see para. 10).

34. The Committee decided to discuss the proposed Standard on a point-by-point basis while focusing on the provisions placed in square brackets. The Committee accepted most provisions of the Standard as proposed. However, the following specific provisions were discussed in detail as follows:

Section 3. Essential Composition and Quality Factors

35. The Committee agreed to remove the square brackets in Section 3.2.1, [and any added nutrients].

36. The Committee also decided to remove the square brackets in Section 3.4 concerning Nutrients.

37. The Committee noted the opinion that particle size criteria do not represent essential quality factors for semolina and durum wheat flour and therefore, should not remain in Section 3.5. However, several Delegations pointed out that it was necessary to maintain a definition in order to distinguish between durum wheat semolina and durum wheat flour and proposed the footnote to Section 3.5 as a definition for particle size. The Committee agreed to delete Section 3.5 and to include in a new Section 2.1.2 the following description from the footnote to Section 3.5:

"The particle size of durum wheat flour should be such that not less than 80 passes through a silk gauze or man-made textile sieve with an aperture of 315 microns. A durum wheat product that does not conform to the above particle size would be classified as durum wheat semolina."

The observer of the Union des Associations des Sémouliers des C.E. noted its opposition to establishing a definition to distinguish these flours as the Customs Cooperation Council had already defined this problem. The Delegation of Spain also noted that it did not make sense to classify a product which contains 79 particles of durum wheat flour and only 21% particles of semolina as durum wheat semolina, since the product is in fact unsifted durum wheat flour as in agreement with the Brussels Nomenclature published by the Customs Cooperation Council. The Delegation of Spain, therefore, did not agree with the substitution of Section 3.5 with the new Section 2.1.2.

Section 7. Labelling

38. The Codex Secretariat informed the Committee that this Section was endorsed by the Codex Committee on Food Labelling at its 20th Session. However, proposals made by the Secretariat to amend this Section in accordance with newly adopted Codex procedures were accepted by the Committee.

39. The Committee agreed to remove the square brackets from Sections 7.1.2, 7.2, 7.2.1 and 7.3. The Committee also decided to delete Sections 7.4 through 7.9 as these requirements were covered by the General Labelling Standard.

Section 8. Methods of Analysis and Sampling

40. The Committee was informed that the 16th Session of the Codex Committee on Methods of Analysis and Sampling (CCMAS) had agreed that the various references included in these standards represented sampling procurement methods, and did not conform with the recommendations included in the Instructions on Codex Sampling Procedures (CX/MAS 1-1987). As a result of this discussion, the proposed sampling plans were only temporarily endorsed by the CCMAS (para. 40, ALINORM 89/23).

41. The Committee proposed that a drafting group consisting of representatives from Egypt, France and the United States should assist the Secretariat in reviewing this Section while taking the comments of the CCMAS into account concerning a reference to the choice of an appropriate inspection level and lot acceptance criteria.

42. The Committee agreed with the proposal of the drafting group and included the amended Section as 8.1.

43. The Committee noted that the proposed method for the Determination of Particle Size (Granularity) in Section 8.3 was related to Section 3.5 which the Committee had previously decided to remove. However, the Committee agreed that another new method needed to be elaborated to distinguish between durum wheat semolina and durum wheat flour as defined in the new Section 2.1.2. The Committee decided to indicate that this method would be elaborated for amendment of the Standard at a future date.

44. The Committee noted that the method for the Determination of Fat Acidity in Section 8.5 should be deleted as the Standard did not include a provision for fat acidity. Several Delegations, however, supported the establishment of a limit for fat acidity in the Standard as it was considered important in protecting consumer health. The Committee, while noting that the Standard was in the final stages of elaboration, decided to delete the method reference in Section 8.5, pending the elaboration of a fat acidity limit and related method of analysis as a future amendment to the Standard.

45. The Committee noted that the methods proposed in Section 8.7 in square brackets for the detection of other wheat flours by electrophoresis were related to problems of adulteration as opposed to measurements of quality. The Committee agreed to delete this Section.

Section 9. Status of the Standard

46. The Committee agreed to advance the Draft Standard for Durum Wheat Semolina and Durum Wheat Flour to Step 8 of the Codex Procedure for endorsement at the 19th Session of the Commission. The revised Standard is attached as Appendix III to this report.

PROPOSED DRAFT CODEX STANDARD FOR RICE (Agenda Item 8)

47. The Committee recalled its previous discussion concerning this issue (see para. 7), whereby it was noted that the most recent 18th Session of the Codex Alimentarius Commission approved the elaboration of a Worldwide Codex Standard for Rice, (paras 475-477, ALINORM 89/40). The Committee was also Informed that this decision was reaffirmed by the 37th Session of the Executive Committee (Para 60, ALINORM 91/3).

48. The proposed draft Codex Standard for Rice (CX/CPL 90/5) as prepared by the United States, France and the Netherlands, was circulated for government comments at Step 3. Comments received from governments were summarized in Conference Room Documents 2 (CX/CPL 90/6), 6, 7, 11, 13 and 15.

49. The Committee proceeded to discuss the proposed draft standard for rice on a section-by-section basis, while taking written as well as oral comments into account. General concerns were expressed as to the merits of proceeding with such a standard, especially when it was noted that the ISO standard was not followed in several aspects. In view of the variety of opinions and comments received concerning the standard, the Chairman suggested the creation of a Working Group in order to produce a revised proposed draft standard for forwarding and adoption by the Commission at Step 5, based on government comments and the ISO rice standard (ISO 7301:1988). The Committee agreed with this proposal, and a Working Group was formed under the Chairmanship of the United Kingdom, with participants from the governments of Brazil, Canada, France, Italy, Netherlands, Thailand and the United States.

50. The amended proposed draft standard for rice (unnumbered) was presented to the plenary session by the Chairman of the Working Group, Mr. C. Cockbill (United Kingdom). The Committee was informed that the Working Group considered the ISO standard and government comments when amending the standard. The Working Group focused its efforts on the sections concerning Description (Section 2), Classification (Section 3), Composition (Section 4), Labelling (Section 8) and Methods of Analysis and Sampling (Section 9).

51. The Committee noted that the Description section was drawn directly from the ISO standard, while the labelling section conformed to revised labelling procedures as adopted by the Commission. The Chairman of the Working Group also noted that the Classification section was enclosed in square brackets to encourage discussion on the three different options and figures presented within these options (i.e., average kernel length, average kernel length/width ratio, combination of average kernel length and length/width ratio). The Committee noted that the Method of Analysis and Sampling Section would need to be developed for determining classifications, depending upon which option is selected. The Committee was also informed that the Essential Composition and Quality Factors Section followed the ISO standard as much as practical. In this Section, the Working Group questioned the need for part 4.5.2 of the standard, and noted that the tolerance for organic extraneous matter (Table 1) should be amended to read 0.5 for all types of rice (i.e., 1.5% figures were put into square brackets), as the Codex standard is also intended to cover products for human consumption. The Chairman thanked the Working Group for its efforts and proposed that the standard be forwarded for adoption by the Commission at Step 5.

52. In discussing the amended proposed draft standard, the Delegation of India noted several inconsistencies between the proposed draft Codex and ISO Standard. The Delegation of India stated that the inconsistencies in respect to classification could be

minimized if a length/breadth ratio alone was used as a criteria for classification. Length/breadth ratios of less than 2.5 (short grains), between 2.5 and 3.0 (medium grains) and 3.0 and above (long grains) were suggested. It was further noted that scented varieties of rice should also be included in the classification. The Delegations of India and the United States also stated the need for lower moisture levels. The Delegation of Australia also made several comments concerning the proposed draft standard.

53. Although the Delegation of India suggested incorporating amendments to the standard based on oral comments voiced in plenary, it was agreed that it would be difficult to introduce these changes at this stage of elaboration. Therefore, the Committee concluded and agreed that the proposed draft standard would not be in an acceptable form for adoption by the Commission at Step 5. In recognizing the need to consider comments raised at the meeting and in order to proceed while taking the views of other governments into account, the Committee agreed to return the proposed draft standard to Step 3 for circulation and further comment.

54. The proposed Draft Codex Standard for Rice is attached to this report as Appendix IV. Government comments will be solicited at Step 3 with the understanding that these comments will be reviewed at the Committee's Eighth Session.

CONSIDERATION OF PROPOSALS TO ELABORATE STANDARDS FOR OATS, WHEAT, DURUM WHEAT AND PEANUTS (Agenda Item 9)

55. The Committee had before it documents CX/CPL 90/9 - Part I and CX/CPL 90/9 Part II concerning proposals for the elaboration of Codex Standards for Oats, Wheat, Durum Wheat and Peanuts. Comments received on these proposals were summarized in Conference Room Documents 4, 8, 9 and 14 for presentation to the Committee.

Proposal for the Elaboration of a Proposed Draft Codex Standard for Oats

56. The Delegation of the United States presented a summary of its position paper on oats (CX/CPL 90/9-Part 1) which noted that even though world average production figures were dropping, in several countries imports of this commodity were increasing. The Committee was informed that oats have high nutritional value and their use for human consumption had increased in several countries. The Delegation of the United States also noted that several countries have specific standards and grades (e.g., United States, Canada, Australia, Colombia, EEC) for whole oats and therefore, it would be beneficial to standardize oats on a worldwide basis to facilitate trade and prevent duplication of efforts.

57. The Delegation of the United Kingdom pointed out that even though oat consumption was increasing, the information provided by the United States concerning decreases in worldwide trade did not support the elaboration of a Codex standard. The Delegation of India supported this view and suggested that the Committee should concentrate its efforts on other priority items such as wheat.

58. The Delegation of Egypt, as supported by Argentina and Australia, underlined the importance of elaborating a Codex standard for oats in order to harmonize the existing national regulations for this commodity. The Delegation of Switzerland also noted that their interest in oats and other high nutrition products used for human consumption was increasing.

59. The Delegation of Argentina volunteered to prepare a proposed draft Codex standard for oats with assistance provided by Sweden. The Committee agreed to

circulate the proposed draft standard for government comments at Step 3 prior to its next Session, with the understanding that the elaboration of the standard will be endorsed at the 19th session of the Commission.

Proposal for the Elaboration of Proposed Draft Codex Standards for wheat and Durum wheat

60. The Committee was informed that the ISO Specification for Wheat (ISO 7970:1989) was finalized and attached to document CX/CPL 90/9 - Part II (Appendix 1) for the Committee's consideration. The Committee also noted that the ISO was considering the establishment of a specification for durum wheat (VI 0-85). In this regard, the Committee was informed that the Secretariat was in contact with ISO concerning the Committee's efforts in this area, and had requested ISO to withhold its deliberations in elaborating a durum wheat specification in order to avoid duplication of work with Codex.

61. The Delegation of Argentina, supported by Canada, Spain, Italy, Egypt, India, and the United States, expressed interest in elaborating separate specific standards for wheat and durum wheat in view of the differences in product characteristics and technological uses.

62. The Delegation of the United Kingdom agreed that even though there was a great amount of international trade in wheat, the elaboration of a Codex standard for a product traded in bulk did not appear to be justified, especially when an ISO specification already existed. The Delegation suggested that Codex efforts should continue to focus on consumer-oriented standards.

63. The Delegation of France supported the Delegation of the United Kingdom and indicated that Codex should avoid duplication of work with ISO as both organizations had specific terms of reference and areas of expertise.

64. The Secretariat reminded the Committee that the responsibility of Codex is not only limited to questions related to the facilitation of international trade, but also includes consumer protection activities. It was noted that Codex standards were considered of utmost importance in relation to the prevention of technical and sanitary barriers to trade, and therefore, went into considerable more detail than ISO specifications. The Committee was also reminded that the elaboration of Codex standards for these products were justified by Codex criteria and were well within the Committee's terms of reference.

65. Several countries supported the elaboration of proposed draft Codex Standards for Wheat and Durum Wheat. The Delegation of United States volunteered to elaborate these standards with assistance from Canada, Netherlands, India, Argentina, France, Italy, Spain and Australia. The Committee agreed to this proposal.

66. The Committee also agreed that the group should limit its activities to the elaboration of two specific standards, Durum Wheat (*Triticum durum*) and Wheat (*Triticum aestivum*). It was also understood that this work would be undertaken through correspondence in order to elaborate standards for circulation and government comment at Step 3 prior to the Committee's next session. The Committee was also informed that the 19th Commission session will need to endorse these proposals.

Proposal for the Elaboration of a Proposed Draft Codex Standard for Peanuts

67. The Committee was informed that ISO had commenced the elaboration of a peanut specification (ISO/DIS 6478.2.) which was attached to document CX/CPL 90/9 Part II for consideration by the Committee.

68. The Committee also noted and endorsed the comments of the Codex Committee on Food Additives and Contaminants (para. 144, ALINORM 91/12) as it agreed that the proposed levels for aflatoxin in the ISO draft standard were unnecessarily high.

69. The Delegation of Argentina, supported by the Delegations of Australia, Canada, Denmark, Spain, India and the United States, expressed the opinion that peanuts were an important commodity in international trade and that the elaboration of a Codex standard was justified. The Delegation of Switzerland also noted the importance of a Codex standard in view of the use of this commodity for the production of peanut oil.

70. The Delegation of the United Kingdom, supported by the Delegation of France, questioned the need for such a standard as the major issue (i.e., contamination with aflatoxins) is already addressed by the CCCPL and other Codex Committees.

71. The Delegation of United States, assisted by the Delegations of Egypt and Australia, offered to elaborate the proposed draft standard for peanuts with the understanding that it will be circulated for government comments at Step 3 prior to the next session of the Committee. The Committee agreed with this proposal, and noted that the elaboration of the standard will need to be endorsed at the 19th Session of the Commission.

FUTURE WORK (Agenda Item 10)

72. The Committee concluded and agreed that the following matters will be discussed at its next session, subject to approval by the Commission:

- Proposed Draft Codex Standards for Rice, Oats, Wheat, Durum Wheat and Peanuts (at Step 4);
- Proposed Draft Guideline Levels and Sampling Plans for Aflatoxins in Peanuts (at Step 4);
- Draft Guideline Levels for Contaminants in Cereals, Pulses and Legumes (at Step 7);
- Proposal to elaborate a revision of the Fat Acidity Provision and related Method of Analysis in the Codex Standard for Wheat Flour (at Step 4);
- Proposal to elaborate a Fat Acidity Provision and Related Method of Analysis in the Codex Standard for Durum Wheat Semolina and Durum Wheat Flour (at Step 4);
- Proposal to elaborate a Method of Analysis for the Determination of Particle Size in the Codex Standard for Durum Wheat Semolina and Durum Wheat Flour (at Step 4).

OTHER BUSINESS (Agenda Item 11)

73. The Committee did not have any other business for discussion.

DATE AND PLACE OF NEXT SESSION (Agenda Item 12)

74. The Committee noted that its Eighth Session would be held in Washington, D.C. at a date tentatively scheduled for October 1992.

CODEX COMMITTEE ON CEREALS, PULSES AND LEGUMES**Summary Status of Work**

Standard/Guideline Level	Step	For Action By:	Document Reference
Draft Standard for Durum Wheat Semolina and Durum Wheat Flour	8	19th CAC	Appendix III, ALINORM 89/29
Draft Amendment of the Fat Acidity Provision in the Codex Standard for Wheat Flour	8	19th CAC	para. 17, ALINORM 91/29
Proposed Draft Guideline Levels for Contaminants in Cereals, Pulses and Legumes	5	23rd CCFAC 19th CAC Governments 8th CCCPL	para. 24, ALINORM 91/29
Proposed Draft Guideline Levels and Sampling Plans for Aflatoxins in Peanuts	3	23rd CCFAC 19th CAC Governments 8th CCCPL	Appendix II, ALINORM 91/29
Proposed Draft Codex Standard for Rice	3	Governments 8th CCCPL	Appendix IV, ALINORM 91/29
Proposed Draft Codex Standards for Wheat, Durum Wheat and Peanuts	1, 2 and 3	19th CAC United States Governments 8th CCCPL	paras. 65 and 71, ALINORM 91/29
Proposed Draft Codex Standard for Oats	1. 2 and 3	19th CAC Argentina Governments 8th CCCPL	para. 59, ALINORM 91/29
Proposed Draft Amendment of the Codex Standard for Durum Wheat Semolina and Durum Wheat Flour to include a Method of Analysis for Particle Size	1. 2 and 3	19th CAC Governments 8th CCCPL	para. 43, ALINORM 91/29
Proposed Draft Amendment of the Codex Standard for Durum Wheat Semolina and Durum Wheat Flour to include a Fat Acidity Provision and Related Methods of Analysis	1, 2 and 3	19th CAC Governments 8th CCCPL	para. 44, ALINORM 91/29
Proposed Draft Amendment of the Codex Standard for Wheat Flour to revise the Fat Acidity Provision and Related Methods of Analysis	1, 2 and 3	19th CAC France Governments 8th CCCPL	paras. 12-18, ALINORM 91/29

Appendix I

LIST OF PARTICIPANTS LISTE DES PARTICIPANTS LISTA DE PARTICIPANTES

Chairman: Mr. Steven N. Tanner
Président: Assistant to the Administrator for Technology
Presidente: USDA, Federal Grain Inspection Service
Room 1095 South Building
P.O. Box 96454
Washington, D.C. 20090-6454, U.S.A.

**Assistant to
Chairman:** Mr. Les Malone
Assistant to the Administrator
USDA, Federal Grain Inspection Service
Room 1095 South Building
P. O. Box 96454
Washington, D.C. 20090-6454, U.S.A.

MEMBER COUNTRIES **PAYS MEMBRES** **PAISES MIEMBROS**

ARGENTINA **ARGENTINE**

Mr. Hugo Luxardo
Technical Director
National Grain Board
Paso Colon 36F
Buenos Aires
Argentina

Mr. Federico Sergio Fische
Commercial Attaché
Embassy of Argentina
1600 New Hampshire Avenue, N.W.
Washington, D.C. 20009, U.S.A.

AUSTRALIA **AUSTRALIE**

Dr. Sarah Kahn
Veterinary Counsellor
Embassy of Australia
Office of the Minister (Commercial)
1601 Massachusetts Avenue, N.W.
Washington, D.C. 20036-2273
U.S.A.

Mr. John Sault
Counsellor (Agriculture)
Australian Embassy
1601 Massachusetts Avenue, N.W.
Washington, D.C, U.S.A.

BRAZIL **BRESIL** **BRASIL**

Mr. Eduardo A. I. De Seixas
Counselor
Embassy of Brazil
3006 Massachusetts Avenue, N.W.
Washington, D.C. 20008, U.S.A.

CAMEROON **CAMEROUN** **CAMERUN**

Mr. Andre Kesseng A. Mbassa
Economic Counselor
Embassy of Cameroon
2349 Massachusetts Avenue, N.W.
Washington, D.C. 20008, U.S.A.

CANADA

Dr. R. Tkachuk
Research Scientist
Grain Research Laboratory Division
Canadian Grain Commission
Agriculture, Canada
1404-303 Main Street
Winnipeg, Manitoba R3C 3G8
Canada

Mr. J. L. Mercer
Special Projects Officer
Bureau of Veterinary Drugs
Health Protection Branch
Health and Welfare Canada
Brook Claxton Building 312
Tunney's Pasture
Ottawa, Ontario, K1A-1B7
Canada

**DENMARK
DANEMARK
DINAMARCA**

Mr, Erik Klindt Andersen
Agricultural Counselor
The Royal Danish Embassy
3200 Whitehaven Street, N.W.
Washington, D.C. 20008, U.S.A.

Mr. Jan S. Wiuff
Agricultural Attaché
The Royal Danish Embassy
3200 Whitehaven Street, N.W.
Washington, D.C 20008, U.S.A.

**EGYPT
EGYPTE
EGIPTO**

Prof. Dr. Raouf Elsadany
11 Fawzi El Mottii St.
Heliopolis
Fac. of Agrie. Moshtohor KB
Zagazig University
Egypt

Dr. Abdel Azim El Gazzar
Agriculture
Egypt

**FRANCE
FRANCIA**

M. Francois Hudry
Chef de Délégation
D.G.C.C.R.F.
13 rue Saint-Georges
75009 Paris, France

M. Raymond Cauvet
Secrétaire Général
Comité Français de la Sémoulerie
Industrielle
48 avenue Victor Hugo
75783 Paris CEDEX 16
France

Mme. Claire Mazerand
Directrice des Laboratoires E.N.S.M.I.C.
Centre d'Etudes et de Recherches
sur les Céréales et les Dérives
16 rue Nicholas Fortin
75013 Paris, France

**INDIA
INDE**

Dr. G. K. Girish
Joint Commissioner
Ministry of Food & Civil Supplies
New Delhi, India

**ITALY
ITALIE
ITALIA**

Prof. Raimondo Cubadda.
Istituto Nazionale della
Nutrizione
00161 Rome, Italy

Dr, Cesare Calvan!
Ministero Agricoltura
via XX Settembre 20
Rome, Italy

Dr. Gennaro Piscopo
Funzionario
Ministero Dell'Agricoltura E Delle
Foreste
via XX Settembre 20 Rome
Italy

Dr. Flavio Mazzini
Ente Nazionale Risi
Milan, Piazza Pip XI, 1
Italy

MADAGASCAR

Mr. Biclair HG Andrianantoandro
Counselor
Economic and Commercial Affairs
Embassy of Madagascar
2374 Massachusetts Avenue, N.W.
Washington, D.C. 20008, U.S.A.

**MEXICO
MEXIQUE**

Mr. Marco Martinez
Agricultural Counselor
Embassy of Mexico
1911 Pennsylvania Avenue, N.W.
Washington, D.C. 20006, U.S.A.

**NETHERLANDS
PAYS-BAS
PAISES BAJOS**

Dr. R. D. Woittiez
Dept. for Arable Farming and
Horticulture
Ministry of Agriculture,
Nature Management and Fisheries
P.O. Box 20401
2500 EK The Hague
The Netherlands

Mr. O. C. Knottnerus
Adviser
General Commodity Board for Arable
Products
P.O. Box 29739
2502 LS The Hague
The Netherlands

Mr. M.O. Munnikhof
Agricultural Attaché
Royal Netherlands Embassy
4200 Linnan Avenue, N.W.
Washington, D.C. 20008, U.S.A.

**SPAIN
ESPAGNE
ESPANA**

Sr. D. Jose M. Vallejo
Subdirector General
Laboratorios Agroalimentarios
Ministerio de Agricultura, Pesca y
Alimentación
Paseo Infanta Isabel, 1
28014 Madrid, Spain

Mr. D. Juan Carlos Calvo Huerta
Funcionario
Ministerio de Sanidad y Consumo
Jefe de Sección de la Secretaria
General de la C.I.O.D.
c/o Bravo Murillo 4
28015 Madrid, Spain

**SWEDEN
SUEDE
SUECIA**

Mrs. Eva Loenberg
Senior Administrative Officer
National Food Administration
Box 622
S-751 26 Uppsala, Sweden

**SWITZERLAND
SUISSE
SUIZA**

Mr. P. Rossier
Head of Codex Section
Federal Office of Public Health
Haslerstrasse 16 CH-3000
Berne 14, Switzerland

**THAILAND
THAILANDE
TAILANDIA**

Mr. Sthaphorn Vaidhyakarn
Chief
Agricultural Scientist 8
Rice Research Institute
Department of Agriculture
Bangkok, Thailand

Mr. Jumnon Laoeid
Expert on Commodity Analysis
Department of Foreign Trade
Ministry of Commerce
Rajdamnern Avenue
Bangkok 10200
Thailand

Mr. Chutinun Siriyanda
Commercial Technical Officer 4
Department of Foreign Trade
Rajdamnern Avenue
Bangkok 10200

Mr. Apichai Karoonyavanich
Agricultural Counselor
Embassy of Thailand
2300 Kalorama Road, N.W.
Washington, D.C. 20008, U.S.A.

Mr. Phot Inganinanda
Board of Trade of Thailand
134/7 Phaya Thai Rd.
Bangkok 10400, Thailand

Mr. Vuttichai Wanglee
Director, Rice Inspection Committee
Board of Trade of Thailand
134/7 Phaya Thai Rd.
Bangkok 10400, Thailand

Mr. Phaiboon Kuonsongtum
Board of Trade of Thailand
134/7 Phaya Thai Rd.
Bangkok 10400, Thailand

Mr. Arun Anprasertporn
Rice Manager
SGS Far East Ltd.
994 Sukhumvit Rd. 55
Bangkok, Thailand

Mr. Charun Pornkuntham
Senior Scientist
Department of Agriculture
Bangkok 10900, Thailand

Mr. Kawkiat Viriyakitpattana
Commodity Standards Technical
Officer 5
Office of Commodity Standards
Department of Foreign Trade
Ministry of Commerce
Rajdamnern Avenue
Bangkok 10200, Thailand

UNITED KINGDOM
ROYAUME-UNI
REINO UNIDO

Mr. C. Cockbill
Head
Food Standards Division
Ministry of Agriculture, Fisheries and
Food
Ergon House
17 Smith Square
London SW1P 2JR, U.K.

Dr. R. Harding
Food Science Division
Ministry of Agriculture, Fisheries and
Food
Ergon House
17 Smith Square
London SW1P 3JR

UNITED STATES
ETATS-UNIS
ESTADOS UNIDOS

Mr. Charles Cooper
Assistant Director
Center for Food Safety and Applied
Nutrition (HFF-3)
Food and Drug Administration
200 C Street, S.V.
Washington, D.C. 20204, U.S.A.

Mr. David Shipman
Chief
Standards and Procedures Branch
USDA
Federal Grain Inspection Service
Room 1661 South Building
P.O. Box 96454
14th & Independence Avenue, S.W.
Washington, D.C. 20090-6454, U.S.A.

Ms. Elizabeth J. Campbell
Division of Regulatory Guidance
Center for Food Safety and Applied
Nutrition (HFF-312)
Food and Drug Administration
200 C Street, S.W.
Washington, D.C. 20204, U.S.A.

Mr. Durward Dodgen
Division of Food Chemistry and
Technology
Center for Food Safety and Applied
Nutrition (HFF-415)
Food and Drug Administration
Washington, D.C. 20204, U.S.A.

Ms. Marianne Plaus
Agricultural Marketing Specialist
Standards and Procedures Branch
Field Management Division
U.S. Department of Agriculture
P.O. Box 96454, Room 1661-S
Washington, D.C. 20090-6454, U.S.A.

Mr. John Mack Manis
Agricultural Marketing Specialist
Federal Grain Inspection Service
U.S. Department of Agriculture
Washington, D.C. 20090-6454, U.S.A.

Dr. William Horwitz
Scientific Advisor
Center for Food Safety and Applied
Nutrition (HFF-7)
Food and Drug Administration
200 C Street, S.W.
Washington, D.C. 20204, U.S.A.

Mr. Arthur R. Johnson
Center for Food Safety and Applied
Nutrition
Food and Drug Administration
200 C Street, S.W.
Washington, D.C. 20204, U.S.A.

Dr. James F. Lin
Center for Food Safety and Applied
Nutrition (HFF-414)
Food and Drug Administration
200 C Street, S.W.
Washington, D.C. 20204, U.S.A.

Ms. Jeannette H. Anderson
International Marketing Director
National Peanut Council of America
1500 King St. #301
Alexandria, VA 22314, U.S.A.

Mr. James A. Bair
Director of Government Relations
Millers' National Federation
Suite 305 West Wing
600 Maryland Avenue, S.W.
Washington, D.C. 20024, U.S.A.

Ms. Betsy Faga
President
American Corn Millers Federation
6707 Old Dominion Drive, Suite 240
McLean, VA 22101, U.S.A.

Mr. Kyd D. Brenner
Director of Public Affairs
Corn Refiners Association, Inc.
1100 Connecticut Avenue
Suite 1120, N.W.
Washington, D.C. 20006, U.S.A.

Mr. James F. Frahn
Vice President
Director of Planning and Evaluation
U.S. Wheat Association, Suite 801
Washington, D.C. 20006, U.S.A.

Dr. Allen Matthys
Director
Regulatory Affairs
National Food Processors Association
1401 New York Avenue, N.W.
Washington, D.C. 20005, U.S.A.

Mr. Raymond Tarleton
Executive Vice President
American Association of Cereal
Chemists
3340 Pilot Knob Road
St. Paul, MN 55121, U.S.A.

Mr. Lowrie M. Beacham
2600 Valley Drive
Alexandria, VA 22302, U.S.A.

Mrs. Gloria E. S. Cox
Chief Executive Officer
12006 Auth Lane
Silver Spring, MD 20902, U.S.A.

Dr. John P. Modderman
Staff Scientist
Keller and Heckman
1150-17th Street, N.W., Suite 1100
Washington, D.C. 20036-4614, U.S.A.

Dr. William J. Cook
Mount Gretna Inn
Kauffman and Pine Streets
Mount Gretna, PA 17064, U.S.A.

Mr. Gary W. McKinney
Manager of Trade Servicing
U.S. Feed Grains Council
1400 K St., N.W., Suite 1200
Washington, D.C. 20005, U.S.A.

Mr. Tom O'Connor, Director of Technical
Services
National Grain and Feed Association
1201 New York Avenue, Suite 830
Washington, D.C. 20005, U.S.A.

**INTERNATIONAL ORGANIZATIONS
(OBSERVERS)**

**INTERNATIONAL FEDERATION OF
GLUCOSE INDUSTRIES (IFG)**

Mrs. Gloria Brooks-Ray
Director
Regulatory Affairs Nutritional Sciences
CFC International Inc.
P.O. Box 8000 International Plaza
Englewood Cliffs, NJ 07632, U.S.A.

**INTERNATIONAL PEANUT FORUM
(IPF)**

Mrs. Julie G. Adams
Assistant Director
International Marketing
c/o National Peanut Council of America
1500 King Street, Suite 301
Alexandria, VA 22314, U.S.A.

**UNION DES ASSOCIATIONS DES
SEMOULIERS DES CE.
(SEMOULIERS)**

Dr. Fabrizio Vitali
General Secretary
Via dei Crociferi, 44
00187 Rome, Italy

**GROUPEMENT DE L'ASSOCIATION
DE LA MEUNERIE EUROPEENNE
(G.A.M.)**

Mme Claire Mazerand
Directrice des Laboratoires
E.N.S.M.I.C.
Centre d'Etudes et de Recherches sur
les Céréales et les Dérivés
16 rue Nicolas Fortin
75013 Paris, France

JOINT FAO/WHO SECRETARIAT

Mr. David Byron
Food Standards Officer
Joint FAO/WHO Food Standards
Programme
Food and Agriculture Organization
Via delie Terme di Caracalla
00100 Rome, Italy

Dr. Enrico Casadei
Food Standards Officer
Joint FAO/WHO Food Standards
Programme
Via delie Terme di Caracalla
00100 Rome, Italy

UNITED STATES SECRETARIAT

Ms. Rhonda S. Nally
USDA, Food Safety and Inspection
Service
Room 3175 South Building
14th and Independence Avenue, S.W.
Washington, D.C. 20250, U.S.A.

Ms. Patty L. Woodall
USDA, Food Safety and Inspection
Service
Room 3175 South Building
14th and Independence Avenue, S.W.
Washington, D.C. 20250, U.S.A.

Mrs. Phoebe Mikalaski
USDA, Federal Grain Inspection Service
Room 0630 South Building
P.O. Box 96454
Washington, D.C. 20090-6454, U.S.A.

Ms. Colleen Rogal
USDA, Federal Grain Inspection Service
Room 1095 South Building
P.O. Box 96454
14th & Independence Avenue, S.W.
Washington, D.C. 20090-6454

Mrs. Barbara Hayden
Center for Food Safety and Applied
Nutrition (HFF-3)
Food and Drug Administration
200 C Street, S.W.
Washington, D.C. 20204, U.S.A.

SPECIAL U.S. PARTICIPANTS

Mrs. Jo Ann R. Smith (Guest Speaker)
Assistant Secretary
Marketing and Inspection Services
U.S. Department of Agriculture
Washington, D.C. 20250, U.S.A.

Mr. John C. Foltz
Administrator
Federal Grain Inspection Service
U.S. Department of Agriculture
Room 1094, South Building
Washington, D.C. 20090-6454, U.S.A.

Mr. David R. Galliant
Deputy Administrator
Federal Grain Inspection Service
U.S. Department of Agriculture
Room 1094, South Building
Washington, D.C. 20090-6454, U.S.A.

Mr. William V. Eisenberg
6408 Tone Drive
Bethesda, MD 20817, U.S.A.

Mr. Roy Barrett
Assistant to the Assistant Administrator
Foreign Agriculture Service
U.S. Department of Agriculture
Room 5099, South Building
Washington, D.C. 20250, U.S.A.

Mr. Lyle Sebranek
Foreign Agriculture Service
U.S. Department of Agriculture
Room 5071, South Building
Washington D.C. 20250, U.S.A.

Ms. Constance B. Henry
Division of Regulatory Guidance
Center for Food Safety and Applied
Nutrition (HFF-312)
Food and Drug Administration
200 C Street, S.W.
Washington, D.C. 20204, U.S.A.

Ms. Janet A. Springer
Division of Mathematics
Center for Food Safety and Applied
Nutrition (HFF-110)
Food and Drug Administration
200 C Street, S.W.
Washington, D.C. 20204, U.S.A.

**PROPOSED DRAFT GUIDELINE LEVELS AND SAMPLING PLANS FOR
AFLATOXINS IN PEANUTS FOR HUMAN CONSUMPTION**

(at Step 3)

Part A: Proposed Draft Guideline Levels for Peanuts (total aflatoxins).

Raw	15 micrograms per kg
Processed	10 micrograms per kg

Part B: Proposed Draft Sampling Plan for Aflatoxin in Shelled Peanuts. (Submitted by the Netherlands)

Proposed Draft Inspection Scheme

Classification of Peanuts in the Lot (average)	Number and Subsamples Weight of Per Lot ¹	Acceptance Criterion (microgram aflatoxin B1 per kg)
60 nuts per ounce or more	4 x 5 kg	In each subsample 3 µg/kg or less.
Less than 60 nuts per ounce	4 x 10	Ditto

¹ The number and weight of the subsamples is independent of the size of the lot. However, the lot should not exceed 25,000 kg. The lot should be homogeneous and originate from one shipment.

Before sampling, the lot should be divided into four equal parts. From each part a subsample is taken. The subsample should be made up of small equal samples which are taken out of each 250 kg of the part of the lot.

Probability of Acceptance

When the above described scheme is applied, the probability of acceptance calculated according to the method and on the basis of the distribution of Aflatoxin B in peanuts as described by J. Waibel in his article "Stichprobengrösse für die Bestimmung von Aflatoxin in Erdnüssen," in Deutsche Lebensmittel-Rundschau (vol. 73, nr. 11, November 1977, page 353 t/m 357), is as follows.

In this case, it is assumed that a sorted and cleaned lot has a degree of contamination of 1 peanut/15,000 peanuts. Besides, it is assumed that the average weight per peanut is respectively 0.35 g (classification 60/oz or more) and 0.65 g (classification less than 60/oz).

Table 1

Classification Peanuts in a Lot (average)	Probability of Acceptance (%) When the Average Aflatoxin of the B ₁ Content of the Lot is (microgram per Kg)							
	1	2	3	5	10	15	20	30
60/oz or more	71	29	15	7	4	3	3	2.5
Less than 60/oz	74	29	14	6	3	2	2	2

Part C: Proposed Draft Sampling Plan for Aflatoxin in Shelled Peanuts (Submitted by the United States)

I. **Introduction:** The proposed U.S. Aflatoxin Sampling Plan for Peanuts represents the sampling and analytical methods used by the U.S. Peanut Administrative Committee (PAC). The plan is designed to ensure that consumers are provided with reliable, high quality peanut products. The plan and testing technology have been constantly updated, incorporating research developments wherever warranted and technologically possible.

II. Sampling Plan: The proposed U.S. aflatoxin sampling plan for raw shelled peanuts before they go to food manufactures for processing is a multi-sample sequential type of testing plan. A 144 pound (65.4 kg) sample is randomly taken by continuous automatic samplers at the time of bagging (equivalent to a sample from every bag filled), or collections are made from every fourth bag after bagging has been completed, or collections are made by other approved methods from bulk, containers. This lot sample is divided into three 48 lb (21.8 kg) samples. One sample is passed through the Dickens subsampling mill and the entire (1100 g) subsample is extracted in 3 liters of methanol-water (55:45) and 1 liter of hexane. Duplicate 50 ml aliquots of the extract are analyzed by the AOAC Method II-TLC. The results are averaged, and if the mean is less than or equal to 8 $\mu\text{kg/kg}$, the lot is accepted. If the mean is greater than 45 $\mu\text{kg/kg}$, the lot is rejected. If the mean is greater than 8 $\mu\text{kg/kg}$ and less than or equal to 45 $\mu\text{kg/kg}$, the second 48 lb (21.8 kg) sample is analyzed in the same manner as the first sample. The four results are averaged and if the mean is 12 $\mu\text{kg/kg}$ or less, the lot is accepted. If the mean is greater than 23 $\mu\text{kg/kg}$, the lot is rejected. If the mean is greater than 12 $\mu\text{kg/kg}$ and less than or equal to 23 $\mu\text{kg/kg}$, the third sample is processed and analyzed like the first two. This time the six results are averaged. If the mean is 15 $\mu\text{kg/kg}$ or less, the lot is accepted and if it is more than 15, the lot is rejected.

<u>Step</u>	<u>Sample #</u>	<u>Accept (\leq kg/kg)</u>	<u>Reject ($>$kg/kg)</u>
1	1	8	45
2	1 + 2	12	23
3	1 + 2 + 3	15	16

Proceed to Step 2 if the result from Step 1 was greater than 8 $\mu\text{kg/kg}$ and less than or equal to 45 $\mu\text{kg/kg}$.

Proceed to Step 3 if the result from Step 2 was greater than 12 $\mu\text{kg/kg}$ and less than or equal to 23 $\mu\text{kg/kg}$.

To evaluate a sampling plan, it is necessary to examine the operating characteristic (O.C) curve, which is the probability of accepting lots with given aflatoxin levels. Figure 1 (attached) shows the O.C curve as calculated by the whitaker Model¹ for the proposed U. S. aflatoxin sampling plan with a 15 $\mu\text{kg/kg}$ guideline level.

¹ T.B. Whitaker at North Carolina State University used a negative binomial distribution and Monte Carlo solution techniques to evaluate the sampling plan and predict the acceptance probabilities.

III. General Comments

1. The U.S. aflatoxin testing plan for raw peanuts was developed to meet the risk parameters of seller and buyers. The plan was designed to balance the buyers risk (lots $> 15 \mu\text{kg/kg}$ accepted) with the sellers risk (lots $\leq 15 \mu\text{kg/kg}$ rejected).

Before determining the sample sizes, method analytical procedures, etc., acceptable risk and confidence factors must be established. It is therefore difficult to directly compare the U. S. to the Dutch sampling system without taking these issues into consideration, since the Dutch method which was previously discussed was based on a lower (3 $B_1 \mu\text{kg/kg}$) accept level, treating the peanuts as a finished good ready for consumption rather than as a raw commodity subject to further processing.

2. The approach for evaluating a sampling plan can be divided into three areas:

- a) Measure the variability associated with the testing process (that is to measure the sampling, subsampling and analytical variability).

- b) Develop mathematical expressions (statistical functions) that simulate the distribution of contaminated kernels in a lot of shelled peanuts.
 - c) Develop computer models to simulate a specific testing design and predict from the model such attributes as the number of lots accepted, number of lots rejected, number of good lots rejected, number of bad lots accepted, amount of aflatoxin in the accepted lots, amount of aflatoxin in the rejected lots, number of samples, subsamples and analyses used to make a decision, and the cost of the testing program.
3. The incidence of contamination from aflatoxin in shelled peanuts and the average level vary by crop year, depending on weather and field conditions. These variabilities are taken into consideration in the PAC testing program.
4. Any evaluation of sampling plans must also take into account differences in sample size, number of samples, differences in subsamples, differences in subsample size, differences in the type of analytical procedures and acceptance levels.

IV. Conclusions

U.S. methodologies for sampling and analysis have been in place for over 20 years, combining experimentation with theoretical models. Government scientists and University statisticians developed the method to evaluate aflatoxin testing plans (including entire process of sampling, comminution, subsampling, and analysis) for shelled peanuts. Over the course of 15 years, the models simulating aflatoxin testing plans have been consistently reviewed and improved, with resulting conclusions and techniques scrutinized by formal and informal technical-groups.

The variability associated with the degree of contamination as well as sampling, subsampling and analytical variations have all been taken into consideration.

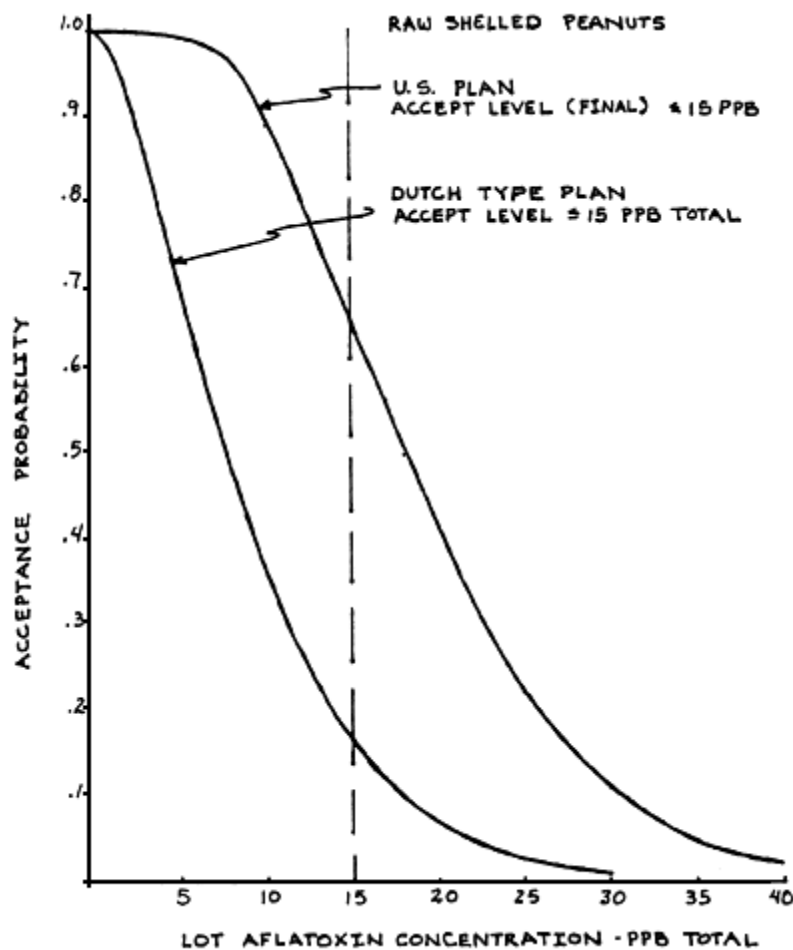
Figure 1

**COMPARISON OF SAMPLING PLANS PROPOSED BY THE NETHERLANDS
AND THE UNITED STATES (Accept level of 15 $\mu\text{g}/\text{kg}$ total aflatoxin)**

Acceptance probabilities for both plans were computed by methods described by Whitaker, et al., 1969, 1972, 1974, 1976 and 1979 where the distribution of contaminated kernels was described by the negative binomial distribution.

The acceptance probabilities for the U.S. plan reflect the variability associated with (a) samples of 43,000 kernels, (b) sample preparation with the AMS subsampling mill, and (c) TLC quantification.

The acceptance probabilities of the Dutch type plan reflect the variability associated with (a) samples of 15,800 kernels, (b) sample preparation with a vertical cutter type mill, and (c) HPLC quantification.



REFERENCES

Whitaker, T.B. and E.H. Wiser. 1969. Theoretical Investigations into the Accuracy of Sampling Shelled Peanuts for Aflatoxin. *Journal of the American Oil Chemists' Society.* 46:377-379.

Whitaker, T.B. and J.V. Dickens, R.J. Munroe and E.H. Wiser. 1972. Comparison of the Observed Distribution of Aflatoxin in Shelled Peanuts to the Negative Binomial Distribution. *Journal of the American Oil Chemists' Society.* 49:590-593.

Whitaker, T.B., J.V. Dickens, and R.J. Munroe. 1974. Variability of Aflatoxin Test Results. *Journal of the American Oil Chemists' Society.* 51:214-218.

Whitaker, T.B., J.V. Dickens, and E.H. Wiser. 1976. Monte Carlo Technique to Simulate Aflatoxin Testing Programs for Peanuts. *Journal of the American Oil Chemists' Society.* 53(8):545-547.

Whitaker, T.B. and J.V. Dickens. 1979. Evaluation of the Peanut Administrative Committee Testing Program for Aflatoxin in Shelled Peanuts. *Peanut Science.* 6:7-9.

Appendix III

DRAFT STANDARD FOR DDRDM WHEAT SEMOLINA AND DURUM WHEAT FLOUR (At Step 8)

1. SCOPE

1.1 This standard applies to durum wheat semolina, including whole durum wheat semolina and durum wheat flour for human consumption prepared from durum wheat (*Triticum durum* Desf.) which are prepackaged ready for sale to the consumer or destined for use in other food products.

1.2 It does not apply:

- to any product prepared from common wheat (*Triticum aestivum* L.) or club wheat (*Triticum compactum* Host.) or mixtures thereof, or to mixtures of these wheats in combination with durum wheat (*Triticum durum* Desf.)
- to durum wheat flour or semolina for non-food industrial or animal feed use.

2. DESCRIPTION

2.1. Product Definition

2.1.1 Durum wheat semolina and durum wheat flour are the products prepared from grain of durum wheat (*Triticum durum* Desf.) by grinding or milling processes in which the bran and germ are essentially removed and the remainder is comminuted to a suitable degree of fineness. Whole durum wheat semolina is prepared by a similar comminuting process, but the bran and part of the germ are retained.

2.1.2 The particle size of durum wheat flour should be such that not less than 80 passes through a silk gauze or man-made textile sieve with an aperture of 315 microns. A durum wheat product that does not conform to the above particle size would be classified as durum wheat semolina.

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 Raw Material

3.1.1 The wheat from which durum wheat semolina and durum wheat flour are milled shall be of sound and marketable quality.

3.2 Quality Factors - General

3.2.1 The durum wheat semolina and durum wheat flour and any added nutrients shall be clean, safe, suitable and of food quality.

3.2.2 All processing of the wheat, including drying, milling and other treatments of wheat; intermediate milling products, and milled durum wheat semolina and durum wheat 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 durum wheat semolina and durum wheat flour.

3.3 Quality Factors - Specific

3.3.1 Durum wheat semolina and durum wheat flour shall conform to the following requirements:

3.3.2 Ash

- (i) Durum wheat semolina - not more than 1.3 on a dry basis.
- (ii) Whole durum wheat semolina - not more than 2.1% on a dry basis.
- (iii) Durum wheat flour - not more than 1.75% on a dry basis.

3.3.3 Protein - (N x 5.7)

- (i) Durum wheat semolina - shall not be less than 10.5% on a dry basis.
- (ii) Whole durum wheat semolina - shall not be less than 11.5% on a dry basis.
- (iii) Durum wheat flour - shall not be less than 11.0% on a dry basis.

3.3.4 Moisture Content - The moisture content of the products shall be governed by good manufacturing practice. The moisture content shall not exceed 14.5%.

3.4 Nutrients - the addition of vitamins, minerals, and specific aminoacids shall be in conformity with the legislation of the country in which the product is sold.

4. CONTAMINANTS¹

¹ Subject to review pending finalization of levels of heavy metal contaminants.

Durum wheat semolina and durum wheat flour shall be free from heavy metals in amounts which may represent a hazard to health.

5. HYGIENE

5.1 It is recommended that the products covered by the provisions of this Standard should be prepared in accordance with the Code of Hygienic Practice - General Principles of Food Hygiene recommended by the Codex Alimentarius Commission (CAC/RCP 1-1969, Rev. 1, 1979).

5.2 When tested by appropriate methods of sampling and examination, the durum wheat flour and semolina shall be:

5.2.1 To the extent possible in good manufacturing practice, free from objectionable matter.

5.2.2 Free from micro-organisms, substances originating from micro-organisms, or other poisonous substances, in amounts which may represent a hazard to health.

6. PACKAGING

6.1 Durum wheat semolina and durum wheat flour shall be packed and transported in containers which will safeguard the hygienic, nutritional and technological qualities of the product.

6.2 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.

7. LABELLING

In addition to the requirements of the Codex General Standard for the Labelling of Prepackaged Foods (CODEX-STAN 1-1985) the following specific provisions apply:

7.1 Name of the Food

7.1.1 The name of the food declared on the label shall be "durum wheat semolina", "whole durum wheat semolina", or "durum wheat flour" as appropriate.

7.1.2 In addition thereto, there shall be added any qualifying term required by the national legislation in the country where the product is sold (e.g., enriched).

7.2 List of Ingredients

7.2.1 A complete list of ingredients shall be declared in accordance with Section 4.2 of the General Standard, except that in the case of added vitamins and added minerals, these shall be arranged as separate groups for vitamins and minerals, respectively, and within these groups the vitamins and minerals need not be listed in descending order of proportion.

7.3 Declaration of Nutritive Value

If vitamins and/or minerals are added to the product, the following information shall be given:

"The total quantity in the final product of each vitamin and/or mineral added in accordance with Section 3.4 for 100 g of the food as sold for consumption."

7.4 Labelling of Non-Retail Containers

Information for non-retail containers shall either be given on the container or in accompanying documents, except that the name of the product, lot identification and name and address of the manufacturer or packer shall appear on the container. However, lot identification and the name and address of the manufacturer or packer may be replaced by an identification mark, provided that such mark is clearly identifiable with the accompanying documents.

8. METHODS OF ANALYSIS AND SAMPLING

8.1 Sampling

8.1.1 Instructions for obtaining primary samples according to:

ISO 2170-1980 - Cereals and Pulses - Sampling of Milled Products.

ICC 130 - Sampling of Milled Products (Semolinas, Flours, Agglomerated Flours and By-Products) (Stated to be Identical to ISO 2170-1980).

ISO 6644-1981 - Cereals and Milled Cereal Products - Automatic Sampling by Mechanical Means.

ICC 138 - Mechanical Sampling of Milled Products (Semolinas, Flours, Agglomerated Flours, and By-Products) (Method for sampling the moving product). Stated to be identical to ISO 6644-1981.

AACC 64-60 - Sampling of Flour, Semolina, and Similar Products: Feeds and Feedstuffs In Sacks.

8.1.2 The size of the sample to be taken from homogeneous lots should be in accordance with Table 3 of the Instructions on Codex Sampling Procedures (CX/MAS 1-1987, Appendix V);

8.1.3 For all determinations, the laboratory sample should be prepared according to the Variables Plan for Proportion Defective: Known Standard Deviation (CX/MAS 1-1987. Appendix IV).

8.1.4 For all determinations, analysis should be performed on the "blended bulk sample".

8.2 Determination of Moisture

8.2.1 ISO 712-1985 - Cereals and Cereal Products - Determination of Moisture Content (Routine reference method). Air oven (Type I).

8.2.2 ICC 110/1 - Determination of Moisture Content of Cereals and Cereal Products - Practical Method. Stated to be identical to ISO 712-1985.

8.3 Determination of Particle Size (Granularity) (To be elaborated)

8.4 Determination of Ash

8.4.1 A0AC 14th Ed. (1984) - Cereal Foods - Direct Method, 14.006 (550°C to constant weight) (Type I method).

8.4.2 ISO 2171-1980 - Cereals, Pulses and Derived Products - Determination of Ash, Method B - 550°C constant weight. Stated to be identical to AOAC Method.

8.5 Determination of Protein

8.5.1 ICC 105/1 - Method for the Determination of Crude Protein in Cereals and Cereal Products for Food and for Feed. Selenium/copper catalyst (Type II Method).

Appendix IV

PROPOSED DRAFT STANDARD FOR RICE (At Step 3 of the Codex Procedure)

1. SCOPE

This standard applies to rice as defined in Section 2.6, 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. It does not apply to other products derived from rice.

2. DESCRIPTION

2.1 Rice is whole and broken kernels obtained from the species *Oryza sativa* L., including *Oryza sativa* L. *glutinosa* (known as glutinous, waxy, or sweet rice)

2.2. Paddy rice is rice which has retained its husk after threshing.

2.3 Husked rice [brown rice or cargo rice] is paddy rice from which the husk only has been removed. The process of husking and handling, particularly of parboiled rice, may result in some loss of bran.

2.4 Milled rice is husked rice from which all or part of the bran and germ have been removed by milling. It is further classified as follows:

2.4.1 Undermilled rice is obtained by milling husked rice but not to the degree necessary to meet the requirements of well-milled rice.

2.4.2 Well-milled rice is obtained by milling husked rice in such a way that some of the germ and all the external layers and most of the internal layers of the bran have been removed.

2.4.3 Extra-well-milled rice is obtained by milling husked rice in such a way that almost all of the germ, all of the external layers and the largest part of the internal layers of the bran, and some of the endosperm, have been removed.

2.5 Parboiled rice is obtained by soaking paddy or husked rice in water and subjecting it to a heat treatment so that the starch is fully gelatinized, followed by a drying process.

2.6 This standard applies to husked rice, milled rice, and parboiled rice.

3. CLASSIFICATION

3.1 Rice shall be classified as long grain, medium grain or short grain on the basis of [the average kernel length] [the average kernel length/width ratio] [a combination of the average kernel length and the length/width ratio].

3.2 Long grain rice

3.2.1 Husked rice or parboiled husked rice with a length/width ratio of [3.1 or more].

3.2.2 Milled rice or parboiled milled rice with a length/width ratio of [3.0 or more].

3.3 Medium grain rice

3.3.1 Husked rice or parboiled husked rice with a length/width ratio of [2.1 - 3.0].

3.3.2 Milled rice or parboiled milled rice with a length/width ratio of [2.0-2.9].

3.4 Short grain rice

3.4.1 Husked rice or parboiled rice with a length/width ratio of [2.0 or less].

3.4.2 Milled rice or parboiled milled rice with a length/width ratio of [1.9 or less].

3.2 Long grain rice has an average kernel length of [6.6 mm or more].

3.3 Medium grain rice has an average kernel length of [6.2 mm or more but less than 6.6 mm]

3.4 Short grain rice has an average kernel length of [less than 6.2 mm].

3.2 Long grain rice

3.2.1 Rice with an average kernel length of [more than 6.0 mm] and with a length/width ratio of [more than 2 but less than 3]; or

3.2.2 Rice with an average kernel length of [more than 6.0 mm] and with a length/width ratio of [3 or more].

3.3 Medium grain rice has an average kernel length of [more than 5.2 mm but not more than 6.0 mm] and a length/ width ratio of [less than 3.1.

3.4 Short grain rice has an average kernel length of [5.2 mm or less] and a length/width ratio of [less than 2].

Note to Governments: These three options for classification are provided for comment. Before the standard can be finally agreed to a decision between them will need to be made and only one of them, or a combination of them selected to form part of the standard. Besides these three options, the figures contained within each option are also only tentative at this stage, but will have to be determined finally before the standard is agreed.

4. ESSENTIAL COMPOSITION AND QUALITY FACTORS

4.1 Essential Composition

4.1.1 Whole Kernel

The kernel without any broken part.

4.1.2 Head Rice

The kernel, the length of which is greater than or equal to three quarters of the average length of the corresponding whole kernel.

4.1.3 Large Broken Kernel

Fragment of kernel, the length of which is less than three-quarters but greater than one-half of the average length of a corresponding whole kernel.

4.1.4 Medium Broken Kernel

Fragment of kernel, the length of which is less than or equal to one-half but but greater than one-quarter of the average length of a corresponding whole kernel.

4.1.5 Small Broken Kernel

Fragment of kernel, the length of which is less than or equal to one-quarter of the average length of a corresponding whole kernel but which does not pass through a metal sieve with round perforations 1.4 mm in diameter.

4.1.6 Chip

Fragment of kernel which passes through a metal sieve with round perforations 1.4 mm in diameter.

4.2 Quality Factors - General

4.2.1 Rice shall be sound, clean of good quality and free from foreign odours or odour which indicates deterioration.

4.2.2. Rice shall be free from living insects and shall not exceed the maximum impurity content set out in Section 4.5.

4.3 Quality Factors - Specific

4.3.1 Moisture Content

The moisture content of rice shall not exceed 15 %.

4.3.2 Nutrients

The addition of vitamins, minerals, and specific amino acids shall be in conformity with the legislation of the country in which the product is sold.¹

¹ Governments accepting the standard are requested to indicate the requirements in force in their country.

4.4 Defects

4.4.1 Extraneous Material

Organic or inorganic components other than kernels of rice, whole or broken:

(a) organic extraneous matter such as foreign seeds, husks, bran, fragments of straw, dead insects, etc.

(b) inorganic extraneous matter such as stones, sand, dust, etc.

4.4.2 Heat Damaged Kernels

Kernels, whole or broken, that have changed their normal color as a result of heating. This category includes whole or broken kernels that are yellow due to alteration. Parboiled rice in a batch of non-parboiled rice is also included in this category.

4.4.3 Damaged Kernels

Kernels, whole or broken, showing obvious deterioration due to moisture, pests, disease, or other causes, but excluding heat-damaged kernels.

4.4.4 Immature Kernels

Kernels, whole or broken, which are unripe and/or underdeveloped.

4.4.5 Chalky Kernels

Kernels, whole or broken, except for glutinous rice, of which at least three-quarters of the surface has an opaque and floury appearance.

4.4.6 Red Kernels

Kernels, whole or broken, with a red-colored pericarp covering more than one-quarter of their surface, but excluding heat-damaged kernels.

4.4.7 Red Streaked Kernels

Kernels, whole or broken, with red streaks, the lengths of which are greater than or equal to one-half of that of the whole kernel, but where the surface covered by these red streaks is less than one-quarter of the total surface.

4.4.8 Pecks

Kernels, whole or broken, of parboiled rice of which more than one-quarter of the surface is dark brown or black in color.

4.4.9 Other Kinds of Rice

4.4.9.1 Paddy in husked rice, in husked parboiled rice, in milled rice and in milled parboiled rice.

4.4.9.2 Husked rice in husked parboiled rice, in milled rice and in milled parboiled rice.

4.4.9.3 Hilled rice in husked parboiled rice and in milled parboiled rice.

4.4.9.4 Glutinous in non-glutinous rice.

4.5 Tolerance for Defects

4.5.1 Based on a sample, the maximum content of extraneous matter and defective kernels [or chips] in husked and milled rice, whether or not parboiled shall not be greater than the values specified in Table 1.

4.5.2 All commercial contracts should show clearly the total percentage of broken kernels permitted, classified according to the agreed categories and the relative proportions of each category.

Note to Governments: It is questioned whether this provision (i.e. Section 4.5.2) is proper for a Codex standard, being essentially a matter for traders.

TABLE 1

Defects	Husked Rice	Milled Rice	Husked Parboiled Rice	Milled Parboiled Rice
	%	%	%	%
Extraneous Matter				
Organic	[1.5]	0.5	[1.5]	0.5
Inorganic	0.5	0.5	0.5	0.5
Faddy Rice	2.5	0.3	2.5	0.3
Husked Rice	---	1.0	---	1.0
Milled Rice	---	---	2.0	2.0
Heat-Damaged Kernels	4.0 *	3.0	8.0 *	6.0
Damaged Kernels	4.0	3.0	4.0	3.0
Immature Kernels	12.0	2.0	12.0	2.0
Chalky Kernels	11.0 *	11.0	---	---
Red Kernels	12.0	4.0	12.0	4.0
Red-Streaked Kernels	---	8.0	---	8.0
Glutinous Rice	1.0 *	1.0	1.0 *	1.0
Pecks	---	---	4.0 *	2.0

Chips 0.1 0.1 0.1 0.1

* After Hilling for Control Purposes

Note to Governments: It is considered that in the Codex standard the tolerance for organic extraneous matter should be 0.5 for all rice unlike the ISO standard, since the Codex standard is linked to rice prepared for human consumption.

5. CONTAMINANTS

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

6. HYGIENE

6.1 It is recommended that the product covered by the provisions of this standard should be prepared in accordance with the appropriate sections of the "Recommended International Code of Practice, General Principles of Food Hygiene"(CAC/RCP 1-1969, Rev. 1) (1979).

6.2 When tested by appropriate methods of sampling and examination, the product shall be:

6.2.1 To the extent possible in Good Manufacturing Practice, free from objectionable matter, having regard to the tolerances indicated in Section 4.5 where applicable,

6.2.2 Free from micro-organisms, substances originating from micro-organisms, or other poisonous substances in amounts which may represent a hazard to health.

7. PACKAGING

7.1 Rice shall be packaged in containers which will safeguard the hygienic, nutritional, technological, and organoleptic qualities of the food.

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

7.3 When the product is packaged in sacks, these must be clean, sturdy, and strongly sewn.

8. LABELLING

In addition to requirements of the Codex General Standard for the Labelling of Prepackaged Foods (CODEX STAN 1-1985) the following specific provisions apply:

8.1 The Name of the Food

The name of the food to be declared on the label shall be "husked rice," "milled rice," "husked parboiled rice," or "milled parboiled rice," as appropriate. The term "long grain," "medium grain," or "short grain," in accordance with Section 3 shall precede the name of the food.

8.2 Declaration of Nutritive Value

If vitamins and/or minerals are added to the product, the following information shall be given:

"The total quantity in the final product of each vitamin and/or mineral added in accordance with Section 4.3.2 for 100 grams of the food as sold for consumption."

8.3 Labelling of Non-Retail Containers

Information on non-retail containers shall either be given on the container or in accompanying documents, except that the name of the product and the name and address of the manufacturer or packer shall appear on the container. However, the name and address of the manufacturer or packer may be replaced by an identification mark, provided that such a mark is clearly identifiable with the accompanying documents.

9. METHODS OF ANALYSIS AND SAMPLING

9.1 Sampling

9.1.1 ISO 950-1981 Cereals - Sampling (as grain).

9.1.2 Additional Methods

AACC 64-70A - Wheat and Whole Grains.

AACC 64-50 - Sampling of Feed Grains and Feed Stuffs.

AOAC 14th ED. (1984) 7.001 Bag Sampling.

9.2 Determination of Moisture

9.2.1 ISO 712-1985 Cereals and Cereal Products - Determination of Moisture (Routine Reference Method). (Type I; air oven).

9.2.2 ICC 110/1 Determination of Moisture Content of Cereals and Cereal Products (Reference Method). (Stated to be identical to ISO 712-1985).

9.3 Test Methods

ISO 712 and Annex A to ISO DIS 7301.

Note to Governments: Methods for determining classifications will need to be developed depending on which option in Section 3 is selected.