codex alimentarius commission

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

WORLD HEALTH ORGANIZATION

Telex 610181 FAO I

JOINT OFFICE: Via delle Terme di Caracalla 00100 ROME: Tel. 57971 Cables Foodagri

ALINORM 81/30

CODEX ALIMENTARIUS COMMISSION
Fourteenth Session 1981

REPORT OF THE FIRST SESSION OF THE
CODEX COMMITTEE ON VEGETABLE PROTEINS
Ottawa, 3-7 November 1980

INTRODUCTION

1. The First Session of the Codex Committee on Vegetable Proteins, hosted by the Government of Canada, was held in Ottawa from 3-7 November 1980. Representatives and observers from 24 countries and six international organizations attended the session (see Appendix I for list of participants).

2. The session was presided over by Dr. Norman W. Tape, Director, Food and Nutrition Service, Agriculture Canada.

3. The Chairman, Dr. Tape, introduced the Minister of Agriculture, the Hon. Eugene Whelan, who formally opened the session. The Minister welcomed the participants and stated that the Committee had the opportunity to share the collective expertise and experience of many countries in the world for the benefit of all mankind. He drew attention to the fact that research on various sources of plant proteins was worldwide and extensive, and he attached considerable importance to the work of establishing world-wide standards for vegetable protein products in the expectation of growing world trade in these commodities. He welcomed the decision of the Codex Alimentarius Commission to embark upon this new and important area of work and was pleased that Canada had been able to host the Committee. He wished the Committee every success in its work. The full text of the Minister's address is contained in Appendix II to this Report.

4. The Chairman then introduced Dr. J. McGowan, Assistant Deputy Minister, Agriculture Canada, Chairman of Canada's Interdepartmental Committee on the Codex Alimentarius and who also served on the Executive Committee of the Codex Alimentarius Commission, as Canada currently represented the Codex region of North America on that Committee. Dr. McGowan referred to the global importance of vegetable proteins. He also referred to Canada's interest in food standards as a major importer and exporter of foods. He briefly outlined several of the topics which had been considered by the Executive Committee of the Codex Alimentarius Commission at its recent session held in Geneva from 13-17 October 1980, mentioning that the importance of the work of the Codex Committee on Vegetable Proteins had been stressed by the Executive Committee. He wished the Committee success in its deliberations.

5. The Chairman then invited Dr. Z.I. Sabry, Director, Food Policy and Nutrition Division, FAO, in whose Division the Rome-based Secretariat of the Joint FAO/WHO Food Standards Programme was located, to address the meeting. Dr. Sabry expressed appreciation, on behalf of the Directors-General of FAO and WHO, to the Canadian Government for having generously accepted responsibility for chairing and hosting the Committee. He referred to Canada's long and active participation in the Food Standards Programme and to the fact that Canada had also been hosting for many years the Codex Committee on Food Labelling - a Committee whose work has had a major impact throughout the world in ensuring better consumer information regarding the nature and composition of foods. He mentioned

CX/FBS

that developing countries which were members of the Codex Alimentarius Commission had stressed the importance of the work of this Committee, and their interest in the development of inexpensive sources of vegetable protein. He also mentioned that member countries of FAO and WHO had expressed a wish to have some common guidelines to assist them in the utilization of vegetable proteins. He stated that, in charting the direction of its future work programme, the Commission would expect the Committee to bear in mind the worldwide interest in this subject and to pay special attention to the needs of the developing countries. He wished the Committee every success in its undertaking.

ADOPTION OF THE AGENDA

6. The Committee adopted its provisional agenda.

EXPLANATION OF CODEX PROCEDURES AND TERMS OF REFERENCE OF THE COMMITTEE

Explanation of Codex Procedures

7. As a considerable number of the participants were attending a Codex meeting for the first time, the Secretariat gave a verbal exposé of the purpose and structure of the Joint FAO/WHO Food Standards Programme. The Secretariat explained, in particular, the procedure for the elaboration of Codex Standards and Codes of Practice, and the working relationship between Codex Commodity Committees and Codex General Subject Committees. The Committee took note of the information given by the Secretariat, which could be found in the Procedural Manual of the Commission and in the Reports of the 12th and 13th Sessions of the Commission.

Terms of Reference of the Committee

8. At the Commission's 12th Session there had been general agreement on the terms of reference of the Committee as proposed in the background document "Vegetable Proteins" (ALINORM 78/32) prepared by a consultant Dr. G.D. Kapsiotis (see also paras 22-25) which had been worded to cover the full spectrum of vegetable proteins. The terms of reference, which had been proposed by the consultant, were as follows:-

> "to elaborate definitions and worldwide standards for vegetable protein products deriving from soya beans, cottonseed, groundnuts, cereals and from other vegetable sources as they come into use for human consumption, and to elaborate guidelines on utilization of such vegetable protein products in the food supply system, on nutritional requirements and safety, on labelling and on other aspects as may seem appropriate."

9. The Secretariat drew the Committee's attention to the views which had been expressed by the delegation of Norway at the 13th Session of the Commission concerning the above terms of reference. These views, which had been presented to the Commission in a conference room document (LIM 1), had been reproduced in CX/VP 80/2 which was before the Committee for consideration. The delegation of Norway had considered that the terms of reference of the Committee had not been finalized by the Commission and that, therefore, the terms of reference could be examined by the Committee at its first session. In this connection, the Commission had indicated at its 13th Session that the Committee could discuss its terms of reference. The delegation of Norway had argued in the Commission against the Codex Committee on Vegetable Proteins concerning itself with guidelines for the utilization of vegetable protein products, as it considered that the use of vegetable protein products in meat products, fish products, etc., should be dealt with by the respective Codex Commodity Committees.

10. The Secretariat also drew the Committee's attention to the view which had been expressed by the delegation of the Philippines at the 2nd Session of the Codex Coordinating Committee for Asia that the Codex Committee on Vegetable Proteins should include mention, in its terms of reference, of vegetable proteins derived from coconuts.

11. In the light of some divergence of views expressed by several delegations at the current session, and taking into account that after discussion of certain of the working documents it might be in a better position to reach agreement, the Committee decided to postpone consideration of this matter to a later point in the agenda.

MATTERS OF INTEREST ARISING FROM THE THIRTEENTH SESSION OF THE CODEX ALIMENTARIUS COMMISSION AND FROM SESSIONS OF OTHER CODEX COMMITTEES

Other Codex Committees

12. The Secretariat briefly reviewed verbally developments which had taken place at the 13th Session of the Commission on the following topics, full details of which are referenced below:-

(i) Reorientation of the work of the Commission (ALINORM 79/38, paras 94-116).

(ii) Economic Impact Statements (ALINORM 79/38, paras 39-41 and 123-125).

(iii) Nutritional considerations in the work of the Commission (ALINORM 79/38, paras 81-93).

13. The Secretariat also informed the Committee that the subject of nutritional considerations in the work of the Commission had been discussed further by the Executive Committee at its recent session held in Geneva from 13-17 October 1980, and that the Executive Committee had agreed on terms of reference for a consultant who would be engaged to prepare a paper on this subject for the 14th Session of the Commission.

CODEX COMMITTEE ON PROCESSED MEAT AND POULTRY PRODUCTS

14. The Committee noted that at its last session the Codex Committee on Processed Meat and Poultry Products (CCPMPP) had discussed a working document on the uses of vegetable protein in processed meat and poultry products, which had been prepared by the Danish Secretariat, and comments on the document from Denmark and the USA.

15. The CCPMPP had agreed that future work on the subject should be carried out in close collaboration with this Committee.

16. Three possible ways of using vegetable protein in meat products were examined and discussed:

(1) For functional purposes
(2) As meat replacers
(3) As optional ingredients.

17. In the light of this discussion and opinions expressed by delegations, the Danish Secretariat had been instructed to prepare draft guidelines for the use of vegetable proteins in meat and poultry products. The guidelines would also take into account discussions at the present Committee and would be sent to governments at Step 3 of the Codex Procedure. The Committee took note of the above information.

ACTIVITIES OF OTHER INTERNATIONAL ORGANIZATIONS

18. The Committee was informed that the International Standards Organization (ISO), through its Committee on Agricultural Products (TC 34), was working on methods of analysis both chemical and microbiological for meat and meat products including a method for the detection of non-meat protein. In addition the International Association of Cereal Chemistry had established methods of analysis, some of which could be applied to Standards for Vegetable Proteins. Other organizations from which appropriate methods might be available were the American Oil Chemists Society (AOCS) and the Association of Official Analytical Chemists (AOAC) and the Food Protein Council.

19. The Committee was informed by the Observer of the International Dairy Federation (IDF) of activities with regard to the use of vegetable proteins in milk products and by the delegation of Norway that the Nordic Committee on Food Analysis was also considering certain aspects of the uses of vegetable proteins and related methods of analysis.

20. The Committee noted that the European Vegetable Protein Federation (EUVEPRO) which consisted of industrial manufacturers' and user industries' associations in the following countries - Belgium,France, the Federal Republic of Germany, Italy, Netherlands and the United Kingdom, was directed to represent the European Community vegetable protein food industry in national and international activities concerned with vegetable proteins.

CONSIDERATION OF BACKGROUND PAPER ON VEGETABLE PROTEINS (ALINORM 78/32)

21. The Committee was informed that the above document had been prepared by a consultant (Dr. G.D. Kapsiotis) at the request of the 11th Session of the Codex Alimentarius Commission and had formed the basis of discussions at its 12th Session on the question of establishing the present Committee. The document reviewed the present and potential sources of vegetable protein, their uses in foods, and existing regulations in countries where vegetable proteins were used.

22. The following points were noted:

(a) Apart from the inclusion of vegetable proteins in commodities for which Codex Committees were elaborating standards, there had been much research into the preparation of proteins from various plant sources for use in emergency feeding and in international programmes and for improving the nutritional values of staple foods and thus the nutritional status of low income groups.

(b) The Protein Advisory Group of the United Nations (PAG), later renamed the Protein Calorie Advisory Group, had developed guidelines for testing the usefulness and safety of protein sources such as food quality groundnut flour, edible cottonseed concentrate, edible soy grits and flour and edible sesame flour. The PAG had been discontinued in 1977 and there was no international organization which kept under review current research and development activities in the exploitation and testing of new sources of vegetable protein.

(c) The dictionary definitions of "vegetable" and "plant" suggested that "plant" had a less restrictive meaning and,in the botanical sense, could be applied to a wider range of source material.

(d) Currently soy beans provided the principal source of vegetable proteins now in use: these were flours and grits, concentrates and isolates which were used both for their functional and nutritional attributes mostly in products which were already on the market.

(e) National regulatory provisions were very complex and variable. Nevertheless there was a clear distinction between regulations in developed economies - which were mostly concerned with the uses of vegetable proteins in processed meat, fish products, poultry and dairy products - and in developing economies where the use of vegetable proteins was practically confined to increasing protein content and improving nutritional quality.

(f) Because of the still fluid situation with regard to establishing regulatory provisions on the use of vegetable proteins in many countries, the development of international standards was opportune and would be an important factor in stabilizing and harmonizing national regulations.

23. The Codex Alimentarius Commission had recognized the importance of the following points:

(1) Vegetable proteins intended for human food, whether in developed or developing economies had to meet definite nutritional requirements and be safe in use.

(2) Vegetable proteins, to be used as food or food ingredients, had to offer economic incentives to both producer and consumer.

(3) The use of vegetable proteins in improving the diets of populations at nutritional risk was of particular economic and social interest when protective foods such as milk, meat, fish, were in short supply or were beyond the economic reach of such groups.

(4) In most developing countries edible fats and oils were generally in short availability and supply. Encouragement to expand production of oil seeds in such countries offered the additional advantage that the proteins of the press cake or the extracted oil seed meal could add to the food supply of the country. To achieve this goal it was necessary that regulatory provisions for the safe use of the vegetable proteins be prepared and promulgated.

The Commission had agreed on terms of reference that covered the full spectrum of vegetable proteins for human consumption and the elaboration of guidelines for the use of such proteins in the food supply system (see also para 8).

24. In the short discussion that followed the presentation of the document, the delegation of Canada expressed the opinion that "plant" was a less restrictive description of the possible source materials than "vegetable" since it covered better such potential sources as yeasts and fungi.

FORMAT AND CONTENT OF STANDARDS FOR VEGETABLE PROTEIN

25. The Committee had before it a document (CX/VP 80/4) on the above subject which had been prepared by three consultants.

26. The document which was introduced by the Secretariat, proposed that immediate attention be given by the Committee to vegetable proteins from oilseeds, pulses and cereals as being the most suitable for the preparation of vegetable protein products.

27. A general definition for the primary forms used in food preparation and food manufacturing was proposed as well as descriptions of the individual primary forms in current use.

28. The Committee noted that in the opinion of the authors the primary forms of vegetable protein products were not intended to contain any flavours, colours or other added material such as fat, oil, water, etc.

29. In the discussions that followed, several delegations pointed out that some of the forms of protein described as primary, e.g. textured vegetable protein, had in fact undergone further processing during which certain additives such as caramel colouring and viscosity control agents were used. Para 1.4 stating that primary forms of vegetable protein were not intended to contain any flavours, colours or other added material could not therefore apply to all primary forms covered by the standard.

Purposes for using Vegetable Protein Products in Food

30. The delegation of Switzerland pointed out that para 2.3 (iii) referring to substitution or replacement of original proteins in food implied that there was a standard as a reference point but that this would not apply to novel proteins and was of the opinion that a further provision should be added to cover this point. The Committee agreed that since the format only was under discussion the matter could be considered later when guidelines were being examined.

General Definition of Vegetable Protein Products

31. Some delegations were of the opinion that the definition in para 2.5 did not make it clear that it referred to primary forms of protein in which the only form of processing referred to was the removal of non-protein constituents from the original material. There was some opinion that a general definition should not be pursued and that instead specific definitions for flours, concentrates and isolates should be elaborated. The Committee decided however in favour of a general definition and agreed to the following

text: "Primary forms of vegetable proteins are vegetable protein products which have been processed in a manner which results in a significant degree of concentration in the final product."

32. With regard to definitions for the three primary forms mentioned above, the Committee agreed not to discuss definitions at this stage but to examine them during consideration of the standards.

Gluten

33. The delegation of Finland pointed out that gluten was in many ways distinctive from the other forms of vegetable protein examined, both in its properties and its uses. Production and trade in gluten was increasing and the delegation was of the opinion that a separate standard for gluten was preferable. The Committee agreed to return to the matter when discussing its future work programme.

FORMAT

34. The Committee then discussed the format proposed by the consultant in the Appendix to document CX/VP 80/4.

Title

35. In line with the agreed general definition the title remained unchanged.

Scope

36. The Committee agreed that 2(b) referring to the purposes for which the products can be used was not required in this section and deleted it.

Essential Composition, Quality and Nutritional Factors

37. The Committee amended (e) to read "limits for antibiological factors when appropriate" and added a provision "(f) optional ingredients".

Packing

38. The Committee noted opinions that a provision indicating the types of materials to be used for packing the products would be too restrictive and was not normally included in standards. It was agreed to delete the provision. It was later agreed to reconstitute a provision for packing in the light of examination of the individual VPP standards (see para 70).

Food Additives

39. The Committee agreed not to limit the provision to processing aids only in the light of a previous statement that other types of food additives were also used during the manufacture of primary forms.

Labelling

40. The Committee agreed to amend (f) to read "information for utilization where necessary" and to add provisions "(g) list of ingredients" and "(h) date marking if required".

41. The amended text of the Format is attached as Appendix III.

CONSIDERATION OF PROPOSED DRAFT RECOMMENDED INTERNATIONAL STANDARDS FOR VEGETABLE PROTEIN FLOURS, VEGETABLE PROTEIN CONCENTRATES AND VEGETABLE PROTEIN ISOLATES

General

42. The Committee had before it document CX/VP 80/5, which was introduced by the Secretariat. Appendices I, II and III of the document contained the three proposed draft standards mentioned above, which covered vegetable protein products prepared from oilseeds, pulses and cereals. The question was raised whether it would not be more desirable to develop separate standards based on the different sources of vegetable protein, i.e. separate standards for soya protein, groundnut protein, cottonseed protein,

etc. One delegation expressed some concern that the three proposed draft standards might have been based mainly on data for soya products, and might become restrictive in the future so far as vegetable protein products from other sources were concerned. The consultants indicated that they had considered the idea of establishing separate standards, based on the different vegetable protein sources, and had, in fact, attempted to do so. However, they had eventually decided to draw up proposed draft general standards, as set forth in document CX/VP 80/5, because after detailed examination of soya protein and such other vegetable proteins as groundnut, cottonseed, sesame, etc., they had come to the conclusion that there were not sufficient differences between them all to warrant separate standards.

43. The delegation of Norway thought that the best approach would be to provide for separate requirements within the general standards for products derived from different sources of vegetable protein. The delegation of the United Kingdom drew attention to the approach of the Codex Committee on Fats and Oils, which had developed individual product standards for the different kinds of vegetable oils and then a general standard for those fats and oils not covered by individual product standards. The delegation of Japan drew attention to a possible approach, citing Japanese agricultural standards on vegetable proteins, by making standard by-use types such as powders, pastes and textured. The Committee decided to proceed to consideration of the proposed draft standards as had been prepared by the consultants, with the thought that this would better enable it to come to a conclusion concerning the best approach to the development of standards for these products.

PROPOSED DRAFT RECOMMENDED INTERNATIONAL STANDARD FOR VEGETABLE PROTEIN FLOURS (VPF)

Title of the Standard

44. The observer from the European Vegetable Protein Federation (EUVEPRO) expressed the view that the word "flour" could give rise to some misunderstanding or confusion. The delegation of the Netherlands agreed with the observer from EUVEPRO and thought that probably phraseology such as "proteinaceous vegetable flours" would be clearer in the title. The delegation of the USA pointed out that "flour" in this context referred to protein content and not to particle size. The delegation of Saudi Arabia suggested the terminology "edible plant protein flours". The delegation of Canada suggested that the term "plant protein" would be preferable to "vegetable protein". The Committee decided to leave the title unaltered and invited governments to comment on this matter.

Scope

45. The Committee noted that the proposed draft standard, as presented by the consultants, applied to one of the primary forms of vegetable protein products - flours - prepared from oilseeds, pulses and cereals, and intended for use by the food processing industry and by the catering trade. The delegation of the USA thought that the standard should leave open the possibility of providing also for vegetable proteins for retail sale to the consumer in the future. The Committee decided that, at this stage, the Scope section should, in the interest of clarity, make it clear that the standard did not apply to vegetable protein flours for retail sale to the consumer, but that governments should be asked for their views on whether the standard should be restricted to products intended for further processing or for use in the catering industry or whether it should also cover products for direct sale to the consumer in retail packing or out of bulk or large size containers.

46. The Committee agreed to amend the first sentence of the Scope section to read as follows:- "This standard applies to vegetable protein flours (VPF) intended for use in foods and which are prepared from oilseeds, pulses and cereals by various separation and extraction processes". The purpose of this amendment (underlined) was to make it clear that the standard applied to vegetable proteins for use in human food as opposed to vegetable proteins for use in animal feed. The Committee amended the second sentence to read "The VPF are intended for use by the food preparation and processing industry". The remaining words in the second sentence were considered unnecessary in a standard.

In the last sentence the Committee decided to change "VPF" to read "protein products" and to delete the word "green" before "leaves".

Definition

47. The Committee amended the definition, principally by deleting the mention of specific techniques for the concentration of protein, since production of the product was not limited to the two techniques which had been listed, and also by providing for the addition of flavours, colours or other added substances.

48. The delegation of Norway stated that, according to the Format for the Elaboration of Codex Standards, provisions containing reference to processes of manufacture should appear under the Description section of the Standard and that, therefore, the sub-section on Nutritional Factors should be moved to the Description section. Other delegations, however, thought that the nutritional factors should more properly appear under Essential Composition and Quality. The Committee decided to make no change in the location of the provision on Nutritional Factors.

49. Concering the figures for protein content which had been suggested in the proposed draft standard, the delegation of Italy considered that an upper limit of 55% would be more appropriate for a general standard instead of 65%, as had been proposed in the draft. The delegation of Japan suggested that the upper limit be 60%. The delegation of Canada expressed some concern regarding the provision for the addition of colours, flavours and other substances.

Raw Materials

50. The Committee amended this provision to provide that the raw materials be "essentially free from other seeds and foreign matter in accordance with G.M.P.".

Foreign Matter

51. The Committee decided to delete this provision relating to freedom from insects, insect fragments, rodent hairs, etc., on the grounds that the objectionable matter which had been listed under this heading in the proposed draft was covered by the provision in the Food Hygiene section which read "To the extent possible in good manufacturing practice, the product shall be free from objectionable matter". The delegation of Norway pointed out that the deletion of the paragraph would be incorrect as the inclusion of a provision for acid insoluble ash in the standard indicated foreign matter in the product.

Moisture

52. The delegation of Japan proposed that the maximum limit of 9% should read 10%. The delegation of Saudi Arabia proposed that the moisture content should be "less than 10%". The Committee decided to retain the figure of 9% in square brackets, thus indicating no firm Committee position on the figure at this stage. The Committee noted that the stability and keeping qualities of some products were affected by high moisture content, especially under humid conditions, and that information was required on this point.

Crude Protein

53. The delegation of Canada suggested a lower limit of 35% and an upper limit of 60%. The observer from the European Vegetable Protein Federation (EUVEPRO) expressed the view that the lower limit should be closer to 50% for the product to be generally acceptable as a protein flour. The delegation of Italy suggested a lower limit of 55%. The Committee decided to leave the figures as they stood in square brackets.

Ash

54. The delegation of Japan proposed a figure of 10% instead of 7% as had been provided for in the proposed draft. The delegation of Canada agreed with the proposal of the delegation of Japan. The delegation of Norway preferred 7%. The Committee decided to maintain a figure of 7% in square brackets.

Acid Insoluble Ash

55. Some delegations were of the opinion that the provision was unnecessary since it was covered under the Hygiene section of the standard. The Committee noted however that acid insoluble ash could also be an indication of adulteration and decided to maintain the value in square brackets.

Oil

56. The Committee decided to add in square brackets for specific government comments "Limits on oil content are not proposed for vegetable protein products which are re-fatted or lecithinated materials". The delegation of Italy was not in agreement with the proposal.

Free Fatty Acids

57. The delegation of the USA suggested that it would be preferable to insert an absolute value, i.e. "The free fatty acids shall not exceed ____%". The Committee agreed to this proposal and decided to ask governments for their views as to an appropriate figure.

Crude Fibre

58. The delegation of Sweden proposed an upper limit of 8% instead of 4% as had been provided for in the proposed draft. The Committee decided to change the figure to 8% and to place it in square brackets for specific government comments.

Technological Specifications

Particle Size

59. The Committee decided to delete the preamble under "Particle Size" on the grounds that it was simply descriptive material which was not necessary, rather than a clear requirement. The Committee also decided to place the remaining part of this section, containing certain specifications for flour and granules, in square brackets. Some delegations thought it was necessary to have a provision on particle size, whilst others thought such a provision was not needed.

Heat Treatment

60. The Committee noted that the protein dispersability index (PDI) did not cover proteins from all sources. The Committee therefore agreed on a more widely applicable provision under the heading "Heat Treatment", as given in the amended version of the proposed draft standard (see Appendix IV).

Nutritional Factors

61. The delegation of the USA thought that it would be better to treat the provisions listed under "Nutritional Factors" as guidelines, rather than as provisions of the standards, keeping in mind that these were intermediate products and that nutritional requirements would be more appropriate in the case of the final product sold to the consumer.

62. The Committee noted that in some cases untreated intermediate products were necessary to impart the necessary qualities to the final product, e.g. the use of soy flours in the baking industry. The Committee also noted that in some countries flours from other vegetable sources were used which did not require the same kind of processing.

63. The representative of WHO pointed out that important health considerations were involved in the standards and that some provision for nutritional assessment must remain.

64. After some further discussion on the details of the provisions the Committee agreed to the revised text given in the amended version of the standard.

Optional Ingredients

65. The Committee considered whether provision for optional ingredients should be included in the standard. Some delegations were of the opinion that addition to primary products should be limited to flavouring and colourings, as otherwise the fundamental nature of the standards would be changed. Others pointed out that in some regulations calculation of protein content was made on the basis of dry weight excluding added colours, flavours "and other substances", which implied that additions other than colours and flavours could be made.

66. The Committee noted that "other substances" might well be other food additives for which technological justification and levels of use would need to be provided. The Committee decided not to include provision for optional ingredients at present. The Committee agreed that governments should be asked for their views on the question of whether there should be provision for optional ingredients in the standard.

Food Additives

Hexane

67. The delegation of the USA was of the opinion that the proposed figure was unrealistically low and proposed a limit of 300 mg/kg. This was based on data obtained using analytical methodology which recovers a greater percentage of the hexane actually recovered. The delegation of Canada stated that the Canadian regulatory limit was 10 mg/kg residue in vegetable oilseed meal. Because of the wide divergences between the proposed figures the Committee decided to maintain the original level of 5 mg/kg in square brackets and to ask governments to comment.

Contaminants - Aflatoxin

68. The Committee noted that the limit of 0.03 mg/kg had been proposed by the former PAG. The problem of aflatoxin contamination was particular to some sources of vegetable protein (e.g. groundnut, cottonseed). The delegation of the United Kingdom pointed out that there was evidence of a variety of mycotoxins in different source materials and that it was not in favour of a specific limit for aflatoxins in the general standard. The Committee recognized that analytical methods allowed lower levels of aflatoxin to be detected but decided to leave the present figure in square brackets for comment. The Committee noted that in Canada the maximum limit was 0.015; in Mexico 0.02; in Thailand 0.02 and in the USA 0.02.

69. With regard to heavy metals, the Committee decided to make no provision for them since no information on such contaminants was available at the present session. It was also noted that at some future date reference to limits for pesticide residues established by the Codex Committee on Pesticide Residues might be necessary. The Secretariat indicated that individual countries or the Committee itself could request the Codex Committee on Pesticide Residues to elaborate maximum limits for pesticide residues in these products.

Packaging

70. In view of the special requirements which might be necessary to maintain the keeping quality of some vegetable protein flours, the Committee reversed the decision recorded in para 39 and agreed to include the following provisions: "VPF shall be packed in suitable hygienic containers which will maintain the product during storage and transport in a dry and sanitary condition".

Labelling

71. The Committee agreed to place the preamble in square brackets since it referred to labelling requirements for prepackaged products for retail sale.

Name of the Food

72. The Committee considered an amended text proposed by the delegation of the USA which covered declaration of the physical forms of the products. An alternative text proposed by the delegation of the Netherlands was also considered. After some discussion the Committee agreed to include in the standard the original text, and the alternatives proposed by the delegations of the Netherlands and the USA in square brackets for government comments, as to the most appropriate of the three.

Information for Utilization

73. The Committee noted that, at present, practically all international trade in vegetable protein was in the primary forms but that future use might include sale direct to the consumer. In the case of products containing a significant amount of oil, special storage instructions might also be required. The Committee decided to amend the text to provide for "specific end uses claimed on the label".

Date Marking

74. The delegation of Saudi Arabia supported by the delegations of Nigeria and Pakistan considered that a provision for date marking, particularly expiry date and date of manufacture, was required in the standard. The Committee agreed to add Date Marking for future consideration, since guidelines on date marking had been developed by the Codex Committee on Food Labelling for consideration by individual Codex Commodity Committees.

List of Ingredients

75. In line with the decision taken during discussion of the format and content of Standards for Vegetable Protein Products the Committee added the above provision.

Methods of Analysis and Sampling

Determination of Solvent Residues

76. The delegation of the USA informed the Committee that the present method involving extraction of hexane with iso-octane lacked sensitivity and that a newer method published in JAOC was more sensitive (see Appendix IV, sub-section 9.2.14). The Committee agreed that this should be brought to the attention of the Codex Committee on Methods of Analysis and Sampling.

Determination of Crude Protein

77. The Committee noted that in the present method a nitrogen conversion factor of 5.7 was used. The Observer from AOAC informed the Committee that this method had now been revised and the conversion factor changed to 6.25; the revised method would appear in the March 1981 edition of the Changes in Methods published in the Journal of the AOAC.

Determination of Free Fatty Acids

78. The Committee noted that as referenced the provision was incomplete since no method for the extraction procedure was included.

79. The Committee also agreed that methods should also be identified for nitrogen solubility index and trypsin inhibitor and other antibiological factors.

Status of the Standard

80. The Committee agreed to advance the Draft Recommended International Standard for Vegetable Protein Flours (VPF) to Step 3 of the Codex Procedure. The revised text is attached as Appendix IV.

PROPOSED DRAFT RECOMMENDED INTERNATIONAL STANDARD FOR VEGETABLE PROTEIN CONCENTRATES (VPC)

81. The Committee examined the above draft standard as contained in CX/VP 80/5, Appendix II. It was agreed that many of the changes to be made were consequential to the amendments made in the Draft Standard for Vegetable Protein Flours. In addition the following specific points were noted.

Definition

82. The delegation of Japan was of the opinion that the limits for protein content should be more than 60% but less than 85%. The Committee decided to maintain the present figures of 65% and 90% in square brackets. The delegation of Italy suggested a figure of 55% for the lower limit.

Moisture Content

83. The delegation of Japan proposed a figure of 10%. The present figure of 9% was maintained in square brackets.

Ash

84. The delegations of Japan and Brazil proposed levels of 11% and 6.5% respectively. The present figure of 6.0 in square brackets was maintained.

Crude Fibre

85. It was agreed to increase the present figure of 4% to 7% and to place it in square brackets.

Heat Treatment

86. The Committee agreed to a proposal by the delegation of the Netherlands to include in the criteria for heat processing "trypsin inhibitor" in square brackets.

Labelling

Name of the Food

87. The delegation of the USA proposed a text to exempt gluten from the provision in this sub-section. The delegation of Finland was of the opinion that the characteristics of gluten were such and differed in so many respects from the provisions of the present standard that the elaboration of a separate standard was justified. Several other delegations agreed with this point of view.

Status of the Proposed Draft Recommended International Standard for Vegetable Protein Concentrates

88. The Committee decided to advance the standard to Step 3 of the Codex Procedure. The revised text is attached as Appendix V.

PROPOSED DRAFT RECOMMENDED INTERNATIONAL STANDARD FOR VEGETABLE PROTEIN ISOLATES (VPI)

89. In examining the standard as contained in CX/VP 80/5, Appendix III, the Committee agreed to make consequential changes to bring the provisions into line with those in the two standards already examined.

90. The following are specific points discussed:

Definition

91. The Committee noted that the delegation of the Netherlands wished to express its opposition to the expression of the protein content exclusive of added colours, flavours and other ingredients. Several delegations supported the view of the delegation of the Netherlands. The delegation of Japan suggested a figure of 85% for protein content

instead of 90% as had been proposed in the draft standard. The delegation of Brazil suggested a figure of 88%. The Committee agreed to retain the figure of 90% in square brackets.

Moisture Content

92. The Committee noted the observations of Japan and Brazil stating that they respectively preferred figures of 10% and 6%. The Committee decided to retain the present figure of 5% in square brackets.

Ash

93. The delegation of Japan proposed a figure of 8%. The delegation of Saudi Arabia was in agreement with the existing value of 4% and the Committee decided to maintain this figure in square brackets.

Food Additives

94. The Committee agreed to add in addition to extraction agents the provision for "other agents - to be identified".

Status of the Standard

95. The Committee agreed to advance the Proposed Draft Recommended International Standard for Vegetable Protein Isolates (VPI) to Step 3 of the Codex Procedure. The draft standard is attached as Appendix VI.

GENERAL COMMENT CONCERNING THE APPROACH TO THE DEVELOPMENT OF STANDARDS

96. The delegation of Canada was of the opinion that the draft standards had many points in common. Because of these common features this delegation thought that a better approach might be to classify the three types of products on the basis of protein content in a common standard, which would include flours, concentrates and isolates without distinction as to the method of manufacture of the product. The representative of EUVEPRO agreed with this point of view. It was agreed that governments should be invited to comment on this.

CONSIDERATION OF DRAFT GUIDELINES FOR THE USE OF VEGETABLE PROTEINS IN FOODS

97. The Committee had before it CX/VP 80/6 on the above subject which had been prepared by consultants. The authors pointed out that this Committee was not concerned with standardization of food products to which vegetable proteins were added: this was the work of the appropriate Codex Commodity Committees. However a review of existing regulations had shown that harmonization was required as regards the use, nutritional value and labelling of vegetable proteins and that practical guidelines on these points were required by Codex Committees and by national authorities.

98. The document listed the uses of vegetable proteins (i) as functional adjuncts, (ii) for protein supplementation and improvement of nutritional quality and (iii) as replacers.

Functional Uses

99. It pointed out that the uses of vegetable proteins in this category were likely to be considerably extended as further sources of vegetable proteins from groundnuts, cottonseed, sunflower, pulses, etc. were developed. The uses of vegetable proteins for functional purposes were summarized in an appendix to the document.

Protein Supplementation and Improvement of Nutritional Values

100. The use of VP depended on nutritional aims and socio-economic conditions of target populations and acceptability within the pattern of traditional food habits. Because of the present high prices of imported vegetable proteins, local vegetable protein sources were used, e.g. peanut flour in India, cottonseed flour in Guatemala,

chick peas, lentils and other pulses in high protein mixtures for infants and young children in North African countries. Guidelines on some aspects of the use of "novel" protein sources had been elaborated by the former PAG.

Substitutions and Extension

101. The document went on to point out that the uses of vegetable proteins for replacement and extension of the original proteins in food were the subject of widely divergent national views and regulations. As a first step it was recommended that "this Committee consider and decide on the types of food products in which vegetable protein products could be used in either substitution for or extension of their original protein components. A decision or recommendation might also be formulated on the levels of use of vegetable protein in the various categories of foods".

102. The authors also suggested that for regulatory purposes the ratio of substitution should be calculated from the protein content on a dry weight basis of the VPP and the food product to which VPP would be added and that this approach should be part of the Guidelines to Commodity Committees.

103. The authors also suggested that the Committee might wish to establish maximum safe levels for lysino-alanine (LAL) which might be present under exceptional processing conditions in some isolates.

Nutritional Equivalence

104. The authors discussed present national regulations for nutritional requirements which were mostly concerned with protein content and quality when VPP were used as extenders or substitutes in the formulated form. Formulated forms were often intermediate products which could be prepared by the processor before adding to the final product. It would often not be possible to control nutritional equivalence unless official in-plant quality control existed.

105. It was recommended in the document that "the CCVP should consider the advantages of establishing the nutritional equivalence on the basis of the finished food product containing the VPP rather than of the simulated substitute food or extender. The nutritional equivalence of the foods containing VPP to that of the original they resemble or simulate should be based on the determination of the following values of the finished product in comparison to the values of the original product:

- Protein content (d.w.b. - N x 6.25)
- Ratio of protein deriving from the VPP to thetotal protein (d.w.b.)
- Proximate composition and vitamins and minerals
- Protein value as PER
- Availability of selected amino acids: lysine, methionine.

The Codex Committee on Methods of Analysis and Sampling should be requested to consider and propose adequate chemical method(s) for the determination of VPP in foods containing added vegetable proteins."

106. In the discussion on the document the following remarks were made by different delegations.

Uses of VPP for their Functional Properties

107. The reference in sub-section 1.1 to the ability of VPP's to function as processing aids should be deleted because it could be taken to mean that when used for functional purposes VPP should be classified as food additives, which would be wrong.

Uses of VPP as Replacers and Extenders of the Original Protein in Foods

108. While it would be useful to develop general guidelines for the Codex Commodity Committees the use of VPP for the above purposes should not be included, since this was the concern of individual Commodity Committees. Labelling guidance should be included in the guidelines but prior consideration should be given to guidelines on nutritional

labelling by the Codex Committee on Food Labelling.

109. The assignment of numerical values for functional, supplementary and replacement purposes was difficult because of considerable overlapping among the three categories.

Work of the Codex Committee on Processed Meat Products

110. As previously reported (see paras 14-17) the above Committee had made a first in-depth examination of the uses of VPP in meat products and it had been agreed that the Danish Secretariat should prepare draft guidelines on the subject taking into account the outcome of the discussion at the first session of this Committee.

Protein Supplementation and Improvement of Nutritive Value

111. These considerations applied to all countries and not just to target groups in certain countries. The nutritive value must therefore be included in standards. However in the case of replacement by VPP of the original protein in foods, clear labelling was of great importance.

New Products

112. The possibility of completely new products containing VPP's must be taken into account when considering labelling.

Uses of VPP in Food Products

113. The recommendation that the Committee should decide on types of food products where VPP could be used (see para 101) was not endorsed. It was considered that this was the proper function of the individual Commodity Committees.

Lysino-alanine (LAL)

114. It was stated by the delegation of the USA that recent information on the toxicity of LAL showed that bound and free LAL were not as toxic as was first thought, and that present processing methods kept LAL at lower levels. The Committee accepted the offer of the delegation of the USA to prepare a paper on the subject for consideration by the Committee at its next session.

115. The delegation of Brazil indicated that national policy in Brazil was directed to increased use of VPP in the form of defatted soy flour for fortification purposes in wheat flour, pasta and crackers and as replacer at a level of 7.5% on a dry basis in comminuted meat products. Edible cottonseed and peanut flour were not yet in use.

Nutritional Equivalence

116. It was suggested by the delegation of the USA that the term "nutritional adequacy" was more appropriate. There were some opinions that assessment of nutritional equivalence was necessary when significant amounts of VPP were incorporated into foods of high biological value, or, where used for their functional characteristics, nutritional adequacy was a better term. The choice between the terms "nutritional adequacy" and "nutritional equivalence" would depend on the particular use of VPP in food products. The term "nutritional value" might cover both. Whereas the term "nutritional adequacy" could be applied to the primary forms of VPP, the term "nutritional equivalence" was proper to food products containing VPP as was the case in the present discussion, and therefore this term should be retained in the guidelines. The difficulty of establishing nutritional equivalence in countries with different food habits, different staple diets and different quantities of animal protein intake was mentioned.

117. It was better in guidelines to give clear guidance on the requirements on nutritional value and leave to the Commodity Committees the decision on what nutritional criteria should be established for individual products.

Protein Efficiency Ratio (PER)

118. It was stated that the AOAC had completed a collaborative study on PER. It was pointed out that PER might not be the most suitable means of protein quality determination. Other more reproducible methods were at present being investigated by the AOAC. The Committee accepted an offer by the delegation of Canada to prepare material on the subject for consideration at its next session. The delegations of Italy and USA offered to collaborate in the preparation of the document.

Methods for the Quantitative Differentiation of Vegetable and Animal Proteins

119. The Committee accepted an offer by the delegation of the Netherlands to provide information on current methods to the next session of the Committee. The delegations of Italy and the UK and the observer of EUVEPRO offered to participate in this work.

LABELLING DECLARATIONS CONCERNING THE USE OF VEGETABLE PROTEIN PRODUCTS (VPP) IN OTHER FOODS

120. The Committee had before it the consultants' document CX/VP 80/7 on the above subject. The document identified the common elements in labelling and made recommendations on labelling provisions for VPP as a functional ingredient, as a protein supplement, as a protein replacement in standardized foods and as a protein replacement in unstandardized, novel or non-nutritional (standardized) foods.

121. The following points were made by different delegations.

Declaration of Nutritive Value

122. This Committee should take note of the recommendations which resulted from the examination of the Guidelines for Nutritional Labelling by the Codex Committee on Food Labelling.

Maximum Level of VPP for Functional Purposes

123. Any maximum level of 3% non-hydrated VPP for functional purposes should be expressed as a percentage m/m and the VPP should be declared in the list of ingredients.

VPP as a Protein Replacement in Unstandardized, Novel or Non-nutritional (Standardized) Foods

124. A provision should be included in the labelling declaration under 10.1 (a) and (b) of the paper to include vegetable protein product in the name of the food.

Protein Replacement in Standardized Foods - Name of Product

125. Several delegations were of the opinion that the consumer would not be correctly informed if the normal or traditional name were maintained for a product in which 30% of VPP is used in considerable quantities. They considered that this would be a new product and the traditional name could no longer be applied.

VPP as an Optional Ingredient

126. The Committee noted that the Codex Committee on Processed Meat and Poultry Products had considered the use of VPP as an optional ingredient and that the labelling requirements for this type of use would be identical to those for VPP's for functional purposes.

CONCLUSION

127. Following the discussions on this and on the previous agenda item, the Committee agreed that documents CX/VP 80/6 and CX/VP 80/7 should be taken together and used in the preparation of Draft Guidelines for the Use of Vegetable Proteins in Foods in conjunction with the comments made at the current session.

128. The delegation of Canada was invited to prepare a revised draft of the Guidelines, which should be circulated to governments for comments before the next session of the Committee.

FUTURE PROGRAMME OF WORK AND WORK ASSIGNMENTS

129. The Committee noted that at its next session it would have before it for consideration:

(a) The following proposed draft standards at Step 4

(i) Vegetable Protein Flours
(ii) Vegetable Protein Concentrates
(iii) Vegetable Protein Isolates.

(b) A proposed draft standard for Gluten at Step 2 (to be prepared by the delegation of Finland).

(c) Draft Guidelines for the use of Vegetable Protein in Foods, which should also include labelling aspects (to be prepared by the delegation of Canada).

(d) Report of Ad Hoc Working Group on Protein Quality Measurement (to be prepared by the delegation of Canada in collaboration with the delegations of Italy and the USA).

(e) Report of the Ad Hoc Working Group on Quantitative Methods for the Differentiation of Vegetable and Animal Proteins (to be prepared by the delegation of the Netherlands in collaboration with the delegations of Italy, the United Kingdom and the observer from EUVEPRO).

(f) Paper on Toxicity of Lysino-alanine (LAL) (to be prepared by the delegation of the USA).

130. Concerning gluten, for which the Committee agreed to establish a separate standard, the delegation of Finland undertook to prepare a first draft of the standard for Gluten. The delegation of the USA indicated that the US Wheat Gluten Council would be willing to assist the delegation of Finland in the elaboration of the proposed draft standard for the product. The Committee agreed that the proposed draft standard for Gluten should be sent to the members of the Committee for comment in advance of the next session of the Committee in order to assure more profitable discussion of the text.

131. The Committee also agreed that the Draft Guidelines for the Use of Vegetable Proteins in Food should be sent to governments for comment in advance of the next session of the Committee.

132. The Committee noted the request of the European Vegetable Protein Federation (EUVEPRO) that, because of the large international trade in soy protein products, separate standards be elaborated for these products. The Committee decided that, in view of the general standards being elaborated, which covered soy protein products, it would be premature, at this stage, to consider embarking upon the elaboration of separate standards for those products.

NEEDS AND CONCERNS OF DEVELOPING COUNTRIES

133. Following a proposal of the Secretariat, and in line with the reorientation in the direction of the Commission's programme of work and its decision to place increased emphasis on the needs and concerns of developing countries, the Committee unanimously agreed to place its collective expertise at the disposal of member countries - particularly developing countries - which might wish to have guidance and advice on such matters as processing technology, safety and nutritional value in connection with, for example, the use of indigenous vegetable proteins in staple foods. In this connection, the Committee unanimously agreed that it would be willing, if requested, to establish a Working Group within the Committee to keep under review current research and developments in the vegetable protein field and to provide advice where required.

DATE AND PLACE OF NEXT SESSION

134. The Chairman informed the Committee that the Government of Canada was prepared to hold the 2nd Session of the Committee in 1981. The Secretariat informed the Committee that the kind offer of the Government of Canada had been made known to the Executive Committee at its recent session held in Geneva from 13-17 October 1980 by the representative of the Region of North America (Canada - Dr. J. McGowan). The Executive Committee thought that the subject matter of the Committee was of such importance and widespread interest to all members of the Commission that countries might wish to have more time than usual to develop their positions regarding the new work and, therefore, might prefer to have a meeting in 1982. It was agreed in the Executive Committee that this matter could be reviewed in the light of the outcome of the Committee's First Session. The Committee noted that the date and place of the Second Session of the Committee would be arranged by the Canadian authorities in consultation with the Secretariat.

135. Reference was made to the possibility of holding Codex Committee sessions in developing countries. It was noted that this matter had been discussed at the 13th Session of the Commission following which countries which host Codex Committees had been requested to indicate whether they would be willing to hold sessions of their Committees in a developing country and, if so, under what conditions. Only a few host countries, including Canada, had replied so far, but the subject would be taken up at the next (14th) Session of the Commission, as a separate item of the agenda. The Secretariat informed the Committee that Canada had indicated that it supported the idea in principle, but that specific details would be needed for approval.

OTHER BUSINESS

136. The Committee expressed its appreciation to Dr. G.D. Kapsiotis (formerly Nutrition Division, FAO, Rome), Dr. M.S. Narasinga Rao (Central Food and Technology Research Institute (CFTRI), Mysore, India) and Dr. F.S. Sosulski (University of Saskatchewan, Canada), authors of the main working documents which were before the Committee, for the high quality and thoroughness of their papers.

LIST OF PARTICIPANTS
LISTE DES PARTICIPANTS
LISTA DE PARTICIPANTES

BRAZIL
BRESIL
BRASIL

CYRO TEIXEIRA
Centro Tecnologia Agricola Alimentar
Embrapa
Rua Jardin Botanico 1024
Rio de Janeiro - R.J., Brasil

MARIO S. CARDOSO
Ministerio da Agricultura
Conjunto Venancio 2000
Bloco B - Sala 344
Brasilia, D.F., Brasil

CANADA

DR. D. EARLE COFFIN
Director, Bureau of Nutritional Sciences
Health Protection Branch
Health and Welfare Canada
Ottawa, Ontario K1A OL2

DR. J.P. BARRETTE
Chief (R&D), Laboratory Services Division
Food Production and Inspection Branch
Agriculture Canada
Ottawa, Ontario K1A OC5

ANDRE W. CAMERON
Coordonnateur aux produits végétaux
Direction de la normalisation des aliments
Agriculture Québec
200 A Chemin Ste Foy, Québec

DR. M.C. CHENEY
Chief, Nutritional Quality Foods Division
Bureau of Nutritional Sciences
Health Protection Branch
Health and Welfare Canada
Ottawa, Ontario K1A OL2

DR. JOHN HOLME
Director, Food Research Institute
Agriculture Canada
Ottawa, Ontario K1A OC5

DR. F. JARGAILLE
Chief, Standard and Labels
Meat Hygiene Directorate
Food Production and Inspection Branch
Agriculture Canada
580 Booth Street
Sir William Logan Building
Ottawa, Ontario

CANADA (cont.)

MR. L. KAMM
Chief, Food Science
Meat Hygiene Directorate
Food Production and Inspection Branch
Agriculture Canada
580 Booth Street
Sir William Logan Building
Ottawa, Ontario

Ms. M. KNOX
Director, Technical Services
Grocery Products Manufacturers of Canada (GPMC)
#101 - 1185 Eglinton East
Don Mills, Ontario

DR. DAVID LEES
Vice-President, Technical
Griffith Laboratories Ltd.
757 Pharmacy Avenue
Scarborough, Ontario

MR. RALPH H. McKAY
Director, Consumer Products Branch
Consumer & Corporate Affairs Canada
Place du Portage
Hull, Quebec K1A OC9

DR. G. SARWAR
Health Protection Branch
Health and Welfare Canada
Ottawa, Ontario K1A OL2

MR. C.G. SHEPPARD
Chief, Manufactured Food Division
Consumer Products Branch
Consumer & Corporate Affairs Canada
Place du Portage
Hull, Quebec K1A OC9

DR. FRANK SOSULSKI
Professor Crop Science
Department of Crop Science
University of Saskatchewan
Saskatoon, Saskatchewan S7N OWO

DR. SUBHASH C. PURI
Chief Statistician
Food Production and Inspection Branch
Agriculture Canada
Ottawa, Ontario K1A OC5

ALINORM 81/30
APPENDIX I

CANADA (cont.)

MR. PAUL L. THIBODEAU
Senior Food Officer
Consumer Products Branch
Consumer & Corporate Affairs Canada
Place du Portage
Hull, Quebec K1A OC9

DR. J. WILLMER
Inspection and Technology Branch
Fisheries and Oceans Canada
240 Sparks Street
Ottawa, Ontario K1A OE6

DENMARK
DANEMARK
DINAMARCA

MRS. ANNE BRINCKER
Acting Assistant Director
Danish Meat Products Laboratory
Ministry of Agriculture
Howitzvej 13
DK-2000 Copenhagen F

ECUADOR
EQUATEUR

GEORGE CHIRIBOGA (Minister)
Acting Ambassador of Ecuador
320 Queen Street
Suite 2226
Ottawa, Ontario, Canada

FINLAND
FINLANDE
FINLANDIA

DR. KALEVI SALMINEN
Head of Food Bureau
National Board of Trade and
Consumer Interests
Box 9
00531 Helsinki 53, Finland

FRANCE
FRANCIA

TERRAL ANDRE
Direction de la Qualite
Ministere de l'Agriculture
44 Boulevard de Grenelle
75732 Paris, France

ARNOLD VAN HECKE
Purina Protein Europe
Advisor and Director, Regulatory
Affairs
c/o Purina Protein France
89 Boulevard de la Liberte
F-5800 Lille, France

HUNGARY
HONGRIE
HUNGRIA

M. KOLIPKA
Counsellor
Embassy of Hungary
7 Delaware
Ottawa, Ontario, Canada

ITALY
ITALIE
ITALIA

DR. CLAUDIO ROCCHIETTA
European Vegetable Protein
Federation (EUVEPRO), Chairman
c/o Tradax SpA
V. Nerino 15
20123 - Milano, Italy

DR. CARNOVALE EMILIA
Instituto Nazionale della Nutrizione
Via Lancisi, 29
00161 - Rome, Italy

DR. GEORGE D. KAPSIOTIS
Scientific Coordinator
National Research Council of Italy
Via Benedetto Musolino 41
00153 - Rome, Italy

JAPAN
JAPON

TOSHIMARU NAKAMURA
Ministry of Agriculture, Forestry
and Fisheries (SHOHI-KEIZAI-SECTION)
1-2-1, Kasumigaseki, Chiyoda-ku
Tokyo, Japan

MR. HIROSHI KANDA
Laboratory of Nisshin Oil Mills Ltd.
Japan Vegetable Protein Food
Association
1-3 Chiwaka-Cho, Kanagawa-ku
Yokohama, Japan

MR. TAKASHI SAKITA
Laboratory of Nisshin Oil Mills Ltd.
Japan Vegetable Protein Food Assoc.
1-3 Chiwaka-Cho, Kanagawa-ku
Yokohama, Japan

MR. KAZUHIRO KONDO
Embassy of Japan
255 Sussex Drive
Ottawa, Ontario, Canada

MEXICO
MEXIQUE

ALMA DOLORES MOTA HERNANDEZ
Direccion General de Normas, de SEPAFIN y
Direccion General de Control de Alimentos, Bebidas y Medicamentos de la Secretaria de Salubridad y Asistencia
Liverpool 80-5o Piso, Mexico 6, D.F

MARIA LUISA BRECHU DE RIVERA
Direccion General de Normas, de SEPAFIN y
Direccion General de Control de Alimentos, Bebidas y Medicamentos de la Secretaria de Salubridad y Asistencia
Liverpool 80-5o Piso, Mexico 6. D.F.

NETHERLANDS
PAYS-BAS
PAISES BAJOS

O.C. KNOTTNERUS
Central Commodity Board on Arable Products
Stadhoudersplantsoen 12
P.O. 29739
2502 LS The Hague
Netherlands

DR. HANS VAN GILS
Committee Edible Vegetable Proteins
Unimills
POB 18
Zwyndrecht

MR. G. LOGGERS
Ministry of Public Health
Dokter Reijersstraat 10
Leidschendam
Netherlands

DR. C.C.J.M. VAN DER MEYS
Director, Nutrition and Quality Affairs
Ministry of Agriculture and Fisheries
Bezuiden Houtseweg 73 S'Gravenhage

NEW ZEALAND
NOUVELLE ZELANDE
NUEVA ZELANDIA

MR. T.N. BARBER
First Secretary (Economic)
New Zealand High Commission
Suite 801, 99 Bank Street
Ottawa, Ontario K1P 7G3, Canada

NIGERIA

MR. G.O. BAPTIST
Assistant Director
Federal Ministry of Health
Food and Drug Administration
P.M.B. 12525
Lagos, Nigeria

MRS. MAUREEN E. BAFOR
Federal Ministry of Health
Food and Drug Administration and Laboratory Services
Federal Secretariat
P.M.B. 12525
Lagos, Nigeria

NORWAY
NORVEGE
NORUEGA

PROF. OLAF R. BRAEKKAN
Vitamin Research Institute
Directorate of Fisheries
5000 Bergen

DR. PER A ROSNESS
Deputy Director
SKVK
Ministry of Agriculture
Gladengveien 3B
Oslo 6, Norway

PAKISTAN

DR. ABDUL AZIZ
Deputy Director General (P.H.)
Ministry of Health, Block "C" Sect:Blg.
Islamabad, Pakistan

PERU

JOSE EYZAGUIRRE
Consejero Economico de la Embajada
Del Peru in Canada
539 Island Park Drive
Ottawa, Ontario, Canada

SAUDI ARABIA
ARABIE SAOUDITE
ARABIA SAUDITA

IBRAHIM ALI AL KHOLAIF
Saudi Arabian Standards Organization
Riyadh
P.O. Box 3437
K.S.A.

ABDUL AZIZ KHAYAT
Saudi Arabian Standards Organization
Riyadh
P.O. Box 3437
K.S.A.

SAUDI ARABIA (cont.)

DR. MOHAMED KAMAL ELSAYED YOUSSEF
Professor of Food Science and Technology
Saudi Arabian Standards Organization
Riyadh
P.O. Box 3437
K.S.A.

SPAIN
ESPAGNE
ESPAÑA

DR. FRANCISCO MONTALVO MARTINEZ
Ministerio de sanidad y seguridad social
Jefe servicio alimentos origen animal
Paseo del prado 18, Madrid, Espana

SWEDEN
SUEDE
SUECIA

PROF. BENGT V. HOFSTEN
Head of Food Laboratory
Swedish National Food Administration
P.O. Box 622
S-75126 Uppsala, Sweden

DR. RAGNAR OHLSON
AB Karlshamns oljefabriker
S-292 00 Karlshamn,
Sweden

DR. JAAN TEAR
Alfa-Laval AB
Box 500
S-147 00 Tumba
Sweden

SWITZERLAND
SUISSE
SUIZA

MR. PIERRE ROSSIER
Head of Codex Section
Federal Office of Public Health
Haslerstrasse 16
CH-3008 Berne, Switzerland

DR. F. VON BEUST
Nestec
Case postale 88
CH-1814 La Tour-de-Peilz
Switzerland

THAILAND
THAILANDE
TAILANDIA

MR. THEERA SATASUK
Director of Food Control Division
Food and Drug Administration
Ministry of Public Health
Samsaen Road, Bangkok
Thailand

UNITED KINGDOM
ROYAUME-UNI
REINO UNIDO

MR. B.J. HARDING
Principal, Food Standards Division
Ministry of Agriculture, Fisheries and Food
Great Westminster House
Horseferry Road
London SW1P 2AE

DR. R.M. CHELL
Development Manager
The British Arkady Co. Ltd.
Old Trafford
Manchester, England

DR. D.A. JONAS
Senior Scientific Officer
Food Science Division
Ministry of Agriculture, Fisheries and Food
Great Westminster House
Horseferry Road
London SW1P 2AE

MR. R. SAWYER
Superintendent Food and Nutrition
Laboratory of the Government Chemist
Cornwall House
Stamford Street
London SE1 9NQ

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

DR. WILLIAM H. TALLENT
Director, Northern Regional Research Center
U.S. Department of Agriculture
1815 North University St.
Peoria, Illinois 61604

DR. R.W. WEIK
Assistant to Director
Bureau of Foods (HFF-4)
Food and Drug Administration
Washington, D.C. 20204

UNITED STATES OF AMERICA (cont.)

ELIZABETH J. CAMPBELL
Consumer Safety Officer (HFF-312)
Food and Drug Administration
200 C Street S.W.
Washington, D.C. 20204

RUSSELL L. COOPER
Ralston Purina
Checkerboard Square
St. Louis, Missouri 63188

GLORIA E.S. COX
Chief Executive Officer
Cox and Cox Investments
12006 Auth Lane
Silver Spring, Maryland 20902

DR. B. MARLO DIRKS
Procter and Gamble Co.
6071 Center Hill Road
Cincinnati, Ohio 45221

DR. DAVID R. ERICKSON
Director, Soy Oil Programs
American Soybean Association
777 Craig Road
St. Louis, Missouri 63141

DR. A.M. HANSON
Vice President
Grain Processing Corporation
1600 Oregon Street
Muscatine, Ia. 52761

DR. PRINCE G. HARRILL
Deputy Director
Division of Food Technology
U.S. Food and Drug Administration
200 C Street S.W.
Washington, D.C. 20204

MR. HARLEY D. HATHAWAY
Manager, Product Control Services
The Buckeye Cellulose Corporation
1355 Lynnfield Road, Suite 210
Memphis, Tenn. 38138

N. RICHARD LOCKMILLER
A.E. Staley Mfg. Co.
P.O. Box 151
Decatur, Illinois 62525

KENNETH M. MAGNUSON
Technical Manager, Food Ingredients
Henkel Corporation
2010 East Hennepin Avenue
Minneapolis, Minn. 55413

MR. ALBERT H. NAGEL
Manager, Safety and Compliance
General Food Technical Centre
250 North Street
White Plains, N.Y. 10625

UNITED STATES OF AMERICA (cont.)

MR. ENDRE F. SIPOS
Scientific Resources Director
Central Soya Co. Inc.
1300 Berry Street
Fort Wayne National Bank
Building
Fort Wayne, IN. 46802

OBSERVER COUNTRIES
PAYS OBSERVATEURS
PAISES OBSERVADORES

SOUTH AFRICA
AFRIQUE DU SUD
SUDAFRICA

F.W. LEHMANN
Assistant Director, Product Analysis
Inspection Services
Department of Agriculture and
Fisheries
Private Bag X258 Pretoria
South Africa

MR. JOHAN F. KIRSTEN
Secretary of the Embassy
South African Embassy
15 Sussex Drive
Ottawa, Ontario K1M 1M8, Canada

INTERNATIONAL ORGANIZATIONS
ORGANISATIONS INTERNATIONALES
ORGANIZACIONES INTERNACIONALES

ASSOCIATION OF ANALYTICAL
CHEMISTS (AOAC)

DR. R.W. WEIK
Assistant to Director
Bureau of Foods (HFF-4)
Food and Drug Administration
Washington, D.C. 20204, USA

COMMISSION DES INDUSTRIES AGRICOLES
ET ALIMENTAIRES (CIAA) (UNICE)

KARL-HEINZ KUHN
c/o Bund für
Lebensmittelrecht und Lebens-mittel-
kunde e.v.
Godesberger Allee 157
D53 Bonn 2, Fed. Rep. of Germany

ALINORM 81/30
APPENDIX I

INTERNATIONAL ORGANIZATIONS (cont.)

EUROPEAN VEGETABLE PROTEIN FEDERATION (EUVEPRO)

CLAUDIO ROCCHIETTA
rue de l'Orme, 19
1040 Bruxelles, Belgium

INTERNATIONAL DAIRY FEDERATION BRUXELLES (IDF)

DR. D. EMMONS
Food Research Institute
Agriculture Canada
Ottawa, Ontario, Canada

INTERNATIONAL ORGANIZATION OF CONSUMERS UNIONS (IOCU)

MS. MARYON BRECHIN
27 Elmcrest Road
Etobicoke, Ontario M9C 3R7, Canada

MS. MARILYN YOUNG
13 Riverbrook
Ottawa, Ontario K2H 7W7, Canada

INTERNATIONAL PULSE TRADE AND INDUSTRY CONFEDERATION

WAYNE SERSHALL
Ontario Bean Producers' Marketing Board
1112 Dearness Drive
London, Ontario, Canada

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO)

Z. SABRY
Director, Nutrition Division
Food and Agriculture Organization
Via delle Terme di Caracalla
00100 - Rome, Italy

JOINT SECRETARIAT

FAO

MR. JAMES M. HUTCHINSON
Food Standards Officer
Food and Agriculture Organization
Via delle Terme di Caracalla
00100 - Rome, Italy

MR. H.J. McNALLY
Senior Officer
Joint FAO/WHO Food Standards Programme Group
Food Policy and Nutrition Division
Food and Agriculture Organization
00100 - Rome, Italy

WHO

DR. D.G. CHAPMAN
Temporary Adviser, Food Safety Programme
Environmental Health Division
World Health Organization
1211 Geneva 27, Switzerland

CANADIAN SECRETARIAT

DR. NORMAN TAPE *
Director, Food and Nutrition Service
Agriculture Canada
Ottawa, Ontario K1A OC5

MR. BARRY SMITH
Head, Office of International Food Standards
Health Protection Branch
Health and Welfare Canada
Ottawa, Ontario K1A OL2

MR. IAN CAMPBELL
Food Composition Division
Health Protection Branch
Health and Welfare Canada
Ottawa, Ontario K1A OL2

---

* Chairman
Président
Presidente

OPENING ADDRESS FOR THE FIRST SESSION OF
THE CODEX COMMITTEE ON VEGETABLE PROTEINS

3 November 1980

Given by the Hon. Eugene Whelan,
Minister of Agriculture for Canada

It is indeed an honor to welcome you today to the inaugural international meeting of the Codex Committee on Vegetable Proteins. This Committee has the opportunity to share the collective expertise and experiences of many countries in the world, for the benefit of all mankind.

Canada is proud to be able to host this Committee, just as we are proud to have hosted the Committee on Food Labelling since Codex Alimentarius was first set up. I congratulate Codex for having the foresight to strike this committee to set world standards in vegetable protein products in expectation of growing world trade in these commodities.

And there's no doubt that there will be an increased world demand for vegetable protein to augment other more costly protein sources. Market expectations in the early 1970's have not been realized, but the steady rise in cost of animal protein is making many consumers consider more beans, grains and lentils in their diet. Nutritionists tell me that many of us eat too much protein - 100 or more grams per day versus the recommended 56 grams per day. I certainly know we eat too much food in total!

Last July I spoke at the First World Conference on the Future, held in Canada. Everything under the sun was discussed -- from office furnishings to life in orbit. But, the most important session was on food and agriculture. The need for highly productive farms all over the world to feed our mushrooming population is obvious to all. Plant proteins could be one of the essentials for survival in the years to come, whether it be from soybeans or rapeseed, sunflowers, or groundnuts, and eventually from green leaves and microbes.

The research on such commodities is worldwide, and it's extensive. That's why the work of this committee in establishing world standards is important. In my Department, Agriculture Canada, a lot of money has been invested in rapeseed, soybeans, oats and field peas.

As a matter of fact, we in Canada call rapeseed the Cinderella crop because in a relatively short period of time the number of acres grown in Canada has mushroomed from six thousand to six million. This is as a direct result of our research efforts to produce an acceptable high-yielding variety. In addition, we have also produced new varieties of oats with similar results and new lines of triticale with a metabolized energy content approaching that of utility wheat. Our work continues on sorghum, lentils, colored beans and fababeans, that could have a dramatic impact on the food requirements in the future for nations with marginal lands.

This is just another way Canada has strengthened its capability to transfer laboratory results to practice.

Canadian industry and government have teamed up to establish Canada's Protein, Oil and Starch Pilot Plant in Saskatoon. This facility will assist the development of economic processes to separate grains and oilseeds into their basic building blocks -- protein, oil, and starch.

Of course, the soybean has been the most common example of a vegetable protein, developed and used in many foods in China many centuries ago. Now it has been established in many countries and can be processed in hundreds of ways. It already is a major item of commerce in both the developed and developing segments of the world. Which is an

interesting point taken in the context that almost every country, whether it be technically oriented or not, can benefit from vegetable proteins.

Another good example is the development and use of groundnut protein in India to extend their milk supply.

I am very proud of Canada's achievements and contributions on a global scale, in helping to feed some of the world's population. On a yearly basis, Canada's food aid, both bilateral and multilateral, is in the order of $180 million. We have increased our aid from 495,000 tonnes to 600,000 tonnes of grain under a new Food Aid Convention, as our share of the annual world target of 10 million tonnes.

It's essential, in my opinion, to get better nutritional value from the food we are presently capable of producing so that the year 2000 will not be the start of the "Starvation Century". Are we destined to meet that fate?

Even now the estimates of the numbers of hungry and malnourished people range from 400 million to more than one billion, depending on the standard of nutrition used.

I believe that we can meet the challenge if our achievements of the past are any indication. I also believe that the future will be in the technological advances associated with plant proteins.

It's also noteworthy that vegetable protein can serve two markets, in the sense it can be produced for either livestock feed or human food. The Codex Committee on Vegetable Proteins is, of course, focussing on human food uses.

I would also like to take this opportunity to praise the overall achievements of Codex Alimentarius in ensuring worldwide fair practices in food trade and in the protection of the consumer. It is a difficult task, but already more than 170 food standards have been adopted by many of the 117 member nations, 32 codes of practice, 1,000 maximum residue limits and 20 codes of hygienic practice. These accomplishments are all milestones in their own right.

I'm looking towards the time when Canada will become the overall world leader in agriculture per capita production.

Already our farmers are demonstrating their abilities. Each Canadian farm worker, in 1978, produced enough food to feed 53 people, which is among the highest rates in the world. It's obvious that Canada has a major responsibility to increase its food supply, especially in the area of high protein, to supply a hungry world.

There's no doubt in my mind that it can be done, based on the past performance of the Canadian farmer, which in large part has built this great country of ours.

I wish this Committee success today and for the future.

SUGGESTED FORMAT AND CONTENT FOR
RECOMMENDED INTERNATIONAL STANDARDS FOR VEGETABLE PROTEIN PRODUCTS (VPP)

1. NAME OF THE STANDARD Recommended International Standard for Vegetable protein flours (VPF)/concentrates (VPC)/isolates (VPI).

2. SCOPE includes:

(a) the raw materials from which VPF/VPC/VPI are produced;

3. DESCRIPTION includes:

(a) definition of VPF/VPC/VPI;

(b) general outlines of methods of preparation.

4. ESSENTIAL COMPOSITION, QUALITY AND NUTRITIONAL FACTORS These include:

(a) quality of the raw materials used to prepare VPP;

(b) compositional characteristics of VPP such as moisture, crude protein, residual oil and free fatty acids (where applicable), ash, acid-insoluble ash and crude fibre content;

(c) technological characteristics affected by heat processing;

(d) nutritional characteristics such as Protein Efficiency Ratio (PER) and available lysine content;

(e) limits for antibiological factors where appropriate; and

(f) optional ingredients.

5. FOOD ADDITIVES

6. CONTAMINANTS The types of contaminants which should be either totally absent or within safe limits are indicated. Contaminants include heavy metals and microbiological toxins.

7. HYGIENE Criteria for good manufacturing practice for the preparation of VPF/VPC/VPI are set out.

8. PACKING

9. LABELLING It includes:

(a) name of the product including the source(s) of the protein; in the case of TVPP, the word "textured" should also be used;

(b) net contents of the container;

(c) name and address of either the manufacturer, packer, distributor, importer, exporter or vendor of the VPP;

(d) country of origin;

(e) lot identification;

(f) information for utilization where necessary;

(g) list of ingredients;

(h) date marking where required.

APPENDIX III

10. METHODS OF SAMPLING AND ANALYSIS The methods recommended are international reference methods and include methods for:

(a) sampling;

(b) determination of moisture, crude protein, residual oil and free fatty acids, available lysine content of the protein product;

(c) determination of PER;

(d) determination of PDI;

(e) determination of antibiological factors such as trypsin inhibitor (urease activity), gossypol, etc.;

(f) determination of solvent residues;

(g) determination of biological and chemical contaminants such as aflatoxin.

PROPOSED DRAFT RECOMMENDED INTERNATIONAL STANDARD FOR VEGETABLE PROTEIN FLOURS (VPF)

STEP 3

1. SCOPE

This standard applies to vegetable protein flours (VPF) intended for use in foods and which are prepared from oilseeds, pulses and cereals by various separation and extraction processes. The VPF are intended for use by the food preparation and processing industry. This standard does not apply to protein products obtained from high moisture vegetable materials such as roots, tubers and leaves.

2. DESCRIPTION

2.1 Definition. VPF are food products produced by the reduction or removal from oilseeds, pulses or cereals of certain of the major non-protein constituents (water, oil, starch, other carbohydrates) in a manner to achieve a protein content of [40%] or more but less than [65%]. The protein content is calculated on a dry weight basis excluding added flavours, colours or other added substances.

3. ESSENTIAL COMPOSITION AND QUALITY AND NUTRITIONAL FACTORS

3.1 Raw Materials. Clean, sound, mature, dry seeds **essentially free from other seeds and foreign matter in accordance with good manufacturing practice.**

3.2 VPF shall conform to the following compositional requirements except in so far as certain requirements may be modified in specific types of VPF.

3.2.1 Moisture content shall not exceed [9%] (m/m).

3.2.2 Crude protein (N x 6.25) shall not be less than [40%] and less than [65%] on a dry weight basis.

3.2.3 Ash. The yield of ash on incineration shall not exceed [7%] on a dry weight basis.

3.2.4 Acid-insoluble ash shall not exceed [0.3%] on a dry weight basis.

3.2.5 Oil. The residual oil content shall be compatible with good manufacturing practices e.g. expeller-extracted product shall not contain more than 8% of residual oil and solvent-extracted product not more than 2%, on a dry weight basis. [Limits on oil content are not proposed for vegetable protein products which are refatted or lecithinated materials.]

3.2.6 Free fatty acids shall not exceed [%] of the residual oil.

3.2.7 Crude fibre content shall not exceed [8%] on a dry weight basis.

3.3 Technological Specifications

Technological characteristics of VPF may be tailored to meet the technological

needs of the food manufacturer using VPF and accordingly the technological specifications would vary. This applies particularly to:

[Flour: Finely ground material to pass through a sieve of 0.150 mm aperture size (100-mesh U.S. Standard screen).

Granules: Particles of larger size ranging from 0.42 to 0.84 mm diameter.]

3.3.1 Heat Treatment. The extent of heat processing can be measured by a number of methods such as protein dispersibility index (PDI), nitrogen solubility index (NSI), available lysine or urease activity. Desirable functional values will vary with different vegetable protein sources and specific applications, e.g. the PDI for soy protein should be greater than 10 for most applications.

3.4 Nutritional Factors

Processing should be carefully controlled and sufficiently thorough to secure optimum flavour and palatability, as well as to control antibiological factors; e.g. trypsin inhibitor, hemagglutinins, glucosinolates, etc., in accordance with intended use. Certain VPF's are produced under low temperature conditions to avoid loss of protein solubility or enzyme activity. These special purpose VPF's should be assayed for protein nutritive value after appropriate heat treatment. Processing must not be so severe as to appreciably impair the nutritive value.

3.4.1 Protein Nutritive Value. Typical values for protein nutritive value for each VPF would have to be established. [For example, the decrease in available lysine should not exceed 25%.]

3.4.2 Gossypol Content. The free gossypol in cottonseed PF shall not exceed [0.065%] on a dry basis.

4. FOOD ADDITIVES

4.1 Processing Aids	Maximum level in final product
Hexane	[5 mg/kg]

5. CONTAMINANTS

5.1 Aflatoxins shall not exceed [0.03] mg per kg in groundnut protein flour and cottonseed protein flour.

6. HYGIENE

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

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

6.3 When tested by appropriate methods of sampling and examination, the product: (a) shall be free of pathogenic microorganisms; (b) shall not contain any substances originating from microorganisms in amounts which may represent a hazard to health; (c) shall not contain any other poisonous or deleterious substances in amounts which may represent a hazard to health.

7. PACKAGING

VPF shall be packed in suitable hygienic containers which will maintain the product during storage and transport in a dry and sanitary condition.

8. LABELLING

In addition to Sections 1, 2, 4 and 6 of the Recommended International General Standards for the Labelling of Prepackaged Foods (CAC/RS 1-1969), the following specific provisions apply:

ORIGINAL TEXT

8.1 Name of the food. The name of the food shall be ".... protein flour", the blank to be filled with the name(s) of the specific source(s) of the vegetable protein e.g. soya, groundnut, cottonseed.

8.1.1 When the VPF are subjected to texturization processes, the name should be qualified by the word "textured", e.g. "textured ... - protein flour", the blank to be filled with the name(s) of the specific source(s) of the vegetable protein.

PROPOSAL OF THE DELEGATION OF THE UNITED STATES

8.1 Name of the food

8.1.1 The name of the food shall be ".... protein flour", the blank to be filled with the name of the specific source of the vegetable protein, e.g. soya, groundnut, cottonseed.

8.1.2 The name may include a term which accurately describes the physical form of the proudct, e.g. "granules" or "bits".

8.1.3 When the VPF is subjected to a texturization process, the name of the product should include an appropriate qualifying term such as "textured" or "structured".

ALINORM 81/30
APPENDIX IV

PROPOSAL OF THE NETHERLANDS SUPPORTED BY THE OBSERVER FROM EUVEPRO

8.1 Name of the food

The name of the food shall be:

..... Protein product (for food use). The blank to be filled with the name of the specific source of the vegetable protein, e.g. soya, groundnut, cottonseed.

In addition, on the label shall be mentioned:

1) the physical form (flour, bits, granules, chunks, flakes, grits, etc.;

2) the protein content;

3) fat content if the latter exceeds [2%]. (A fat content below [2%] may be named "low fat".

One example: Low Fat Soya Protein Product Flour - 60% Protein

8.2 Net contents. The net contents of the container shall be declared by weight. The net content shall be declared in either the metric system or in a system of measurement as required by the country in which the food is sold, or in both systems.

8.3 Name and address. The name and address of either the manufacturer, packer, distributor, importer, exporter or vendor of the VPF shall be declared.

8.4 Country of origin. The country of origin of the product shall be declared.

8.5 Lot identification. Each bulk consignment and each container of packaged consignment shall be marked in code or in clear to identify the producing factory and the lot.

8.6 Information for utilization. The manufacturer of VPF shall provide clear instructions for use and provide information on hydration rates as well as PDI for specific end uses claimed on the label.

8.7 Date Marking. To be considered.

8.8 List of Ingredients. To be considered.

9. METHODS OF SAMPLING AND ANALYSIS

The methods of sampling and analysis referred to hereunder are international reference methods and apply to the Recommended International Standard for VPF.

9.1 Sampling

According to the ISO Method 2170-1972 Cereals and Pulses-Sampling of milled products.

9.2 Analysis

9.2.1 Determination of Moisture. According to the AOAC Method 14.004 or 14.002 (AOAC, 12th Ed., 1975).

9.2.2 Determination of Crude Protein. According to the ISO 1871-1975 Agricultural food products - general directions for the determination of nitrogen by the Kjeldahl Method or AOAC Method 14.026 (AOAC, 12th Ed., 1975).

9.2.3 Determination of Ash. According to the ISO 2171-1972 cereals, pulses and derived products - determination of ash.

9.2.4 Determination of Acid-insoluble ash. According to AOAC Method 13.008 Ash insoluble in acid (AOAC, 12th Ed., 1975).

9.2.5 Determination of Oil. According to the method for fat determination in the Recommended International Standard for Foods for Infants and Children (CAC/RS 72/74-1976).

9.2.6 Determination of Free Fatty Acids. According to the AOAC Method 28.029 (AOAC, 12th Ed., 1975).

9.2.7 Determination of Crude Fibre. According to ISO/DIS 5498 standard for agricultural food products or ISO/DIS 6541 Draft Standard for agricultural food products-determination of crude fibre content-modified Scharrer method.

9.2.8 Determination of Available Lysine. According to the AOAC Method 43.224 (AOAC, 13th Ed., 1980).

9.2.9 Determination of PER. According to the AOAC Method 43.183 (AOAC, 12th Ed., 1975).

9.2.10 Determination of PDI. According to the AOCS Method Ba.10.65 (AOCS, 3rd Ed., 1968).

9.2.11 Determination of Urease Activity. According to AOCS Method Ba. 9.58 (AOCS, 3rd Ed., 1968) or AACC Method 22.90 (AACC, 1968).

9.2.12 Determination of Gossypol. According to the AOCS Method Ba. 7.58 (AOCS, 3rd Ed., 1968).

9.2.13 Determination of Aflatoxins. According to AOAC Method 26.003 to 26.095 (AOAC, 13th Ed., 1980).

9.2.14 Solvent residues (Hexane). According to the following method: L.T. Black and G.C. Mustakas, J. Am. Oil. Chem. Soc., 1965, 42, 62-64.

9.2.15 Nitrogen Solubility Index. Method to be identified.

9.2.16 Trypsin Inhibitor and other antibiological factors. Methods to be identified.

ALINORM 81/30
APPENDIX V

PROPOSED DRAFT RECOMMENDED INTERNATIONAL STANDARD FOR VEGETABLE PROTEIN CONCENTRATES (VPC)

STEP 3

1. SCOPE

This standard applies to vegetable protein concentrates (VPC) intended for use in foods and which are prepared from vegetable protein flours (VPF), oilseeds, pulses and cereals by various separation and extraction processes. The VPC are intended for use by the food preparation and processing industry. This standard does not apply to protein products obtained from high moisture vegetable materials such as roots, tubers and leaves.

2. DESCRIPTION

2.1 Definition. VPC are food products produced by the reduction or removal from vegetable protein flours, oilseeds, pulses or cereals of certain of the major non-protein constituents (water, oil, starch, other carbohydrates) in a manner to achieve a protein content of [65%] or more but less than [90%]. The protein content is calculated on a dry weight basis excluding added flavours, colours or other added substances.

3. ESSENTIAL COMPOSITION, QUALITY AND NUTRITIONAL FACTORS

3.1 Raw Materials. Hygienically prepared VPF meeting the Specifications of the Recommended International Standards for VPF or clean, sound, mature, dry seeds essentially free from other seeds and foreign matter in accordance with good manufacturing practice.

3.2 VPC shall conform to the following compositional requirements except in so far as certain requirements may be modified in specific types of VPC:

3.2.1 Moisture content shall not exceed [9%] (m/m).

3.2.2 Crude Protein (N x 6.25) shall not be less than [65%] and not more than [90%] on a dry weight basis.

3.2.3 Ash The yield of ash on incineration shall not exceed [6%] on a dry weight basis.

3.2.4 Acid-insoluble Ash shall not exceed [0.3%] on a dry weight basis.

3.2.5 Crude fibre content shall not exceed [1%] on a dry weight basis.

3.3 Technological Specifications

3.3.1 Heat Treatment. The extent of heat processing can be measured by a number of methods such as protein dispersibility index (PDI), nitrogen solubility index (NSI), available lysine, urease activity, or [trypsin inhibitor]. Desirable functional values will vary with different vegetable protein sources and specific applications, e.g. the PDI for soy protein should be greater than 10 for most applications.

3.4 Nutritional Factors

Processing should be carefully controlled and sufficiently thorough to secure optimum flavour and palatability, as well as to control antibiological factors; e.g. trypsin inhibitor, hemagglutinins, glucosinolates, etc., in accordance with intended use. Certain VPC's are produced under low temperature conditions to avoid loss of protein solubility or enzyme activity. These special purpose VPC's should be assayed for protein nutritive value after appropriate heat treatment. Processing must not be so severe as to appreciably impair the nutritive value.

3.4.1 Protein Nutritive Value. Typical values for protein nutritive value for each VPC would have to be established [For example, the decrease in available lysine should not exceed 25%.]

3.4.2 Gossypol Content. The free gossypol in cottonseed PC shall not exceed [0.065%] on a dry basis.

4. FOOD ADDITIVES

4.1 Processing Aids

4.1.1 Extraction Agents

(a) Water should be from such a source or suitably treated as not to constitute a public health hazard.

(b) Alcohols of food-grade quality (to be specified).

(c) Mineral acids of food-grade quality (to be specified).

5. CONTAMINANTS

5.1 Aflatoxins shall not exceed [0.03] mg per kg in groundnut protein concentrate and cottonseed protein concentrate.

6. HYGIENE

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

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

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

(a) shall be free of pathogenic microorganisms;

(b) shall not contain any substances originating from microorganisms in amounts which may represent a hazard to health;

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

7. PACKAGING

VPC shall be packed in suitable hygienic containers which will maintain the product during storage and transport in a dry and sanitary condition.

8. LABELLING

In addition to Sections 1, 2, 4 and 6 of the Recommended International General Standards for the Labelling of Prepackaged Foods (CAC/RS 1-1969), the following specific provisions apply:

8.1 Name of the food. The name of the food shall be ".... protein concentrate" the blank to be filled with the name(s) of the specific source(s) of the vegetable protein e.g. soya, groundnut, cottonseed.

8.1.1 When the VPC are subjected to texturization processes, the name should be qualified by the word "textured", e.g. "textured .... protein concentrate", the blank to be filled with the name(s) of the specific source(s) of the vegetable protein.

8.2 Net contents. The net contents of the container shall be declared by weight. The net contents shall be declared in either the metric system or in a system of measurement as required by the country in which the food is sold, or in both systems.

8.3 Name and address. The name and address of either the manufacturer, packer, distributor, importer, exporter or vendor of the VPC shall be declared.

8.4 Country of origin. The country of origin of the product shall be declared.

8.5 Lot identification. Each bulk consignment and each container of packaged consignment shall be marked in code or in clear to identify the producing factory and the lot.

8.6 Information for utilization. The manufacturer of VPC shall provide clear instructions for use and provide information on hydration rates as well as PDI for specific end uses claimed on the label.

8.7 Date Marking. To be considered.

8.8 List of Ingredients. To be considered.

9. METHODS OF SAMPLING AND ANALYSIS

The methods of sampling and analysis referred to hereunder are international reference methods and apply to the Recommended International Standard for VPC.

9.1 Sampling

According to the ISO Method 2170-1972 Cereals and Pulses-Sampling of milled products.

9.2 Analysis

9.2.1 Determination of Moisture. According to the AOAC Method 14.004 or 14.002 (AOAC, 12th Ed., 1975).

9.2.2 Determination of Crude Protein. According to the ISO 1871-1975 Agricultural food products - general directions for the determination of nitrogen by the Kjeldahl Methods of AOAC Method 14.026 (AOAC, 12th Ed., 1975).

9.2.3 Determination of Ash. According to the ISO 2171-1972 cereals, pulses and derived products - determination of ash.

9.2.4 Determination of Acid-Insoluble Ash. According to AOAC Method 13.008 Ash insoluble in acid (AOAC, 12th Ed., 1975).

9.2.5 Determination of Crude Fibre. According to ISO/DIS 5498 Standard for agricultural food products or ISO/DIS 6541 Draft Standard for agricultural food products - determination of crude fibre content - modified Scharrer method.

9.2.6 Determination of Available Lysine. According to the AOAC Method 43.224 (AOAC, 13th Ed., 1980).

9.2.7 Determination of PER. According to the AOAC Method 43.183 (AOAC, 12th Ed., 1975).

9.2.8 Determination of PDI. According to the AOCS Method Ba.10.65 (AOCS, 3rd Ed., 1968).

9.2.9 Determination of Urease activity. According to AOCS Method Ba.9.58 (AOCS, 3rd Ed., 1968) or AACC Method 22.90 (AACC, 1968).

ALINORM 81/30
APPENDIX VI

PROPOSED DRAFT RECOMMENDED INTERNATIONAL STANDARD FOR VEGETABLE PROTEIN ISOLATES (VPI)

STEP 3

1. SCOPE

This standard applies to vegetable protein isolates (VPI) intended for use in foods and which are prepared from vegetable protein flours (VPF), vegetable protein concentrates (VPC), oilseeds, pulses, and cereals by various separation and extraction processes. The VPI are intended for use by the food preparation and processing industry. This standard does not apply to protein products obtained from high moisture vegetable materials such as roots, tubers and leaves.

2. DESCRIPTION

2.1 Definition. Vegetable protein isolates (VPI) are food products prepared by concentrating the proteins or one or more of the protein fractions of vegetable protein flour, vegetable protein concentrate, oilseeds, pulses, or cereals to a protein content of not less than [90%] (N×6.25) on a dry weight basis excluding colours, flavours and other substances.

3. ESSENTIAL COMPOSITION, QUALITY AND NUTRITIONAL FACTORS

3.1 Raw Materials. Hygienically prepared VPF or VPC meeting the specifications of the standards for VPF or VPC or clean, sound, mature, dry seeds essentially free from other seeds and foreign matter in accordance with good manufacturing practice.

3.2 VPI shall conform to the following compositional requirements except in so far as certain requirements may be modified in specific types of VPI.

3.2.1 Moisture content shall not exceed [5%] (m/m).

3.2.2 Crude protein (N x 6.25) shall not be less than [90%] on a dry weight basis.

3.2.3 Ash The yield of ash on incineration shall not exceed [4%] on a dry weight basis.

3.2.4 Acid-insoluble ash shall not exceed [0.3%] on a dry weight basis.

3.3 Nutritional Factors

Processing should be carefully controlled and sufficiently thorough to secure optimum flavour and palatability, as well as to control antibiological factors; e.g. trypsin inhibitor, hemagglutinins, glucosinolates, etc., in accordance with intended use. Certain VPI's are produced under low temperature conditions to avoid loss of protein solubility or enzyme activity. These special purpose VPI's should be assayed for protein nutritive value after appropriate heat treatment. Processing must not be so severe as to appreciably impair the nutritive value.

3.3.1 Protein Nutritive Value. Typical values for protein nutritive value for each VPI would have to be established. [For example, the decrease in available lysine should not exceed 25%.]

3.3.2 Gossypol Content. The free gossypol in cottonseed PI shall not exceed [0.065%] on a dry basis.

4. FOOD ADDITIVES

4.1 Processing Aids

4.1.1 Extraction Agents

(a) Water should be from such a source or suitably treated as not to constitute a public health hazard.

(b) Alkalis and mineral acids of food grade quality (to be specified).

(c) Other agents - to be identified.

5. HYGIENE

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

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

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

(a) shall be free of pathogenic microorganisms;

(b) shall not contain any substances originating from microorganisms in amounts which may represent a hazard to health. If the raw material used is other than VPF meeting the Proposed International Standard for VPF, the isolate, in wet or dry condition, should be so processed as to bring the level of toxic and antibiological constituents to safe limits;

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

6. PACKAGING

VPI shall be packed in suitable hygienic containers which will maintain the product during storage and transport in a dry and sanitary condition.

7. LABELLING

In addition to Sections 1, 2, 4 and 6 of the Recommended International General Standards for the Labelling of Prepackaged Foods (CAC/RS 1-1969), the following specific provisions apply:

7.1.1 Name of the food. The name of the food shall be "... protein isolates" or "isolated ... protein", the blank to be filled with the name of the specific source of the vegetable protein, e.g. soya, groundnut, cottonseed.

7.1.2 The name may include a term which accurately describes the physical form of the product, e.g. "granules" or "bits".

7.1.3 When the VPI is subjected to a texturization process, the name of the product should include an appropriate qualifying term such as "textured" or "structured".

7.2 Net contents. The net contents of the container shall be declared by weight. The net contents shall be declared in either the metric system or in a system of measurement as required by the country in which the food is sold, or in both systems.

7.3 Name and address. The name and address of either the manufacturer, packer, distributor, importer, exporter or vendor of the VPI shall be declared.

7.4 Country of Origin. The country of origin of the product shall be declared.

7.5 Lot identification. Each bulk consignment and each container of packaged consignment shall be marked in code or in clear to identify the producing factory and the lot.

[7.6 Information for utilization. The manufacturer of VPI shall provide clear instructions for use and provide information on hydration rates for specific end uses claimed on the label.]

7.7 Date Marking. To be considered.

7.8 List of Ingredients. To be considered.

8. METHODS OF SAMPLING AND ANALYSIS

The methods of sampling and analysis referred to hereunder are international reference methods and apply to the Proposed International Standard for VPI.

8.1 Sampling

According to ISO Method 2170-1972 Cereals and Pulses-Sampling of milled products.

8.2 Analysis

8.2.1 Determination of Moisture. According to the AOAC Method 14.004 or 14.002 (AOAC, 12th Ed., 1975).

8.2.2 Determination of Crude Protein. According to the ISO 1871-1975 Agricultural food products - general directions for the determination of nitrogen by the Kjeldahl Method or AOAC Method 14.026 (AOAC, 12th Ed., 1975).

8.2.3 Determination of Ash. According to the ISO 2171-1972 cereals, pulses and derived products - determination of ash.

8.2.4 Determination of Acid-insoluble ash. According to AOAC Method 13.008 Ash insoluble in acid (AOAC, 12th Ed., 1975).

8.2.5 Determination of PER. According to the AOAC Method 43.183 (AOAC, 12th Ed., 1975).