

codex alimentarius commission

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THE SEVENTEENTH SESSION
OF THE CODEX COMMITTEE ON PROCESSED FRUITS AND VEGETABLES

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TABLE OF CONTENTS

Page

INTRODUCTION	1
ADOPTION OF THE AGENDA	1
REVIEW OF MATTERS ARISING FROM CODEX SESSIONS	1
-Codex Committee on Processed Fruits and Vegetables	1
-Coordinating Committee for Asia	2
-Coordinating Committee for Europe	2
-Codex Executive Committee	2
-Codex Alimentarius Commission	2
REVIEW OF PROGRESS CONCERNING ACCEPTANCES OF CODEX STANDARDS FOR PROCESSED FRUITS AND VEGETABLES	2
ESTABLISHMENT OF WORKING GROUPS	3
DRAFT STANDARD FOR DATES	3
STYLES - CONSIDERATION OF AMENDMENT OF CODEX STANDARDS	5
PACKING MEDIUM - CONSIDERATION OF AMENDMENT OF CODEX STANDARDS	6
DATE MARKING - CONSIDERATION OF AMENDMENT OF CODEX STANDARDS	7
CONSIDERATION OF THE INCLUSION OF PROVISIONS FOR CONTAMINANTS IN CODEX STANDARDS FOR PROCESSED FRUITS AND VEGETABLES	9
PROPOSAL TO DELETE PROVISIONS FOR COLOURS AND FLAVOURS	9
REVISION OF METHODS OF ANALYSIS IN CODEX STANDARDS FOR PROCESSED FRUITS AND VEGETABLES	10
CONSIDERATION OF THE REVISED DRAFT STANDARD FOR CANNED PALMITOS AT STEP 7	11
--Status of the Standard	14
CONSIDERATION OF THE DRAFT STANDARD FOR CANNED CHESTNUTS AND CANNED CHESTNUT PUREE AT STEP 7	14
--Status of the Standard	16
SAMPLING PLANS FOR PROCESSED FRUITS AND VEGETABLES	16
CONSIDERATION OF THE PROPOSED DRAFT CODEX STANDARD FOR HONEY AT STEP 4	17
--Status of the Standard	20
CONSIDERATION OF THE PROPOSED DRAFT STANDARD FOR CASHEW KERNELS AT STEP 4.....	20
--Status of the Standard	20
EXTENT OF MANDATORY DETAIL INCLUDED IN CODEX STANDARDS FOR PROCESSED FRUITS AND VEGETABLES	20
FUTURE WORK	21
DATE AND PLACE OF NEXT MEETING	21
VALEDICTION	21
<u>APPENDICES</u>	
I .....LIST OF PARTICIPANTS	23
II .....DRAFT STANDARD FOR DATES.....	28
III .....PROPOSED DRAFT AMENDMENT TO CODEX STANDARDS FOR CANNED PROCESSED FRUITS AND VEGETABLES	32
IV .....PROPOSED DRAFT CONSEQUENTIAL AMENDMENTS TO CODEX STANDARDS FOR CANNED PROCESSED FRUITS AND VEGETABLES	33
V .....PROPOSED DRAFT AMENDMENT TO CODEX STANDARDS FOR PROCESSED FRUITS AND VEGETABLES (Date Marking).....	38
VI .....REPORT OF THE WORKING GROUP ON CLASSIFICATION AND REVIEW OF CODEX METHODS OF ANALYSIS FOR PROCESSED FRUITS AND VEGETABLES	38
VII .....DRAFT STANDARD FOR CANNED PALMITO.....	41
VIII.....PROPOSED DRAFT STANDARD FOR CANNED CHESTNUTS AND CANNED CHESTNUT PUREE	49
IX .....PROPOSED DRAFT INTERNATIONAL STANDARD FOR HONEY.....	55
X .....REPORT OF THE AD HOC WORKING GROUP ON THE PROPOSED DRAFT CODEX STANDARD FOR HONEY	65

INTRODUCTION

1. The Codex Committee on Processed Fruits and Vegetables held its Seventeenth Session in Washington, D.C., from 13 to 17 February 1984, by courtesy of the Government of the United States of America. Dr. Robert M. Schaffner (USA) was in the chair. The Session was attended by Government Delegations and Observers from 23 countries. A list of the participants, including the Secretariat, is given in Appendix I to this report.

2. The meeting was opened by Dr. Schaffner on behalf of Dr. M. Novitch, Acting Commissioner of Food and Drugs. Dr. Schaffner emphasized the great importance which the United States was attaching to the work of the Codex Alimentarius Commission and its subsidiary bodies and specifically to the establishment of internationally accepted criteria and standards in order to ensure that foods traded internationally or nationally were safe and wholesome. There was increasing awareness in the Committee to the need to examine health related matters such as lead and tin contamination in canned foods. The Sessions of this Committee had contributed to a closer cooperation between Governments, producers and consumers.

3. The Delegation of the United States recalled the large amount of work which had been carried out by this Committee and which had, in turn, led to the elaboration of Codex standards for all major processed fruits and vegetables. The Delegation of the United States was of the opinion that the Committee had now nearly completed its work and that the Commission might give higher priorities to other groups of products. The Secretariat and Committee were, therefore, reminded to complete as expeditiously as possible their current work programme with a view to adjourning the Committee. The Delegation felt that, if reasonable progress were made on the items presently on the agenda, the Committee might wish to consider the question of adjournment under the item dealing with the date and place of the Session.

4. The Committee agreed with the Chairman that this matter should be discussed under that item and that, if the Committee were to adjourn, appropriate arrangements should be made for finalizing those items which required further attention.

ADOPTION OF THE AGENDA

5. The Committee had before it the Provisional Agenda (CX/PFV 84/1). It was agreed that the item dealing with the question of mandatory detail to be included in Codex standards be moved further back in the agenda. In this respect, it was noted that working paper CX/PFV 84/3 was not available and that the Commission document (ALINORM 83/36) would serve as the basis for discussing the Indian proposal to include in Codex standards certain provisions on essential composition and quality criteria as provisions of an advisory nature.

6. The Committee also noted that two items dealt with sampling aspects and agreed that both items be discussed together, towards the end of the agenda.

7. The Committee adopted the Provisional Agenda with the above-mentioned amendments.

REVIEW OF MATTERS ARISING FROM CODEX SESSIONS

8. The Committee received a verbal report from the Secretariat on matters of interest arising from various Codex and other sessions.

Codex Committee on Processed Fruits and Vegetables

9. The Committee was informed that the Secretariat had prepared revised versions of the standards for canned mangoes and mango chutney and had sent them to various countries interested in the standardization of these products. As only a very limited number of replies had been received, the Chairman of the Committee and the Secretariat took this to mean that there was insufficient interest in the standardization of these products. For this reason, the draft standards for mango products had not been included on the agenda of the present Session.

10. The Committee noted the above information and agreed to return to the consideration on canned mango products during the item dealing with future work.

Coordinating Committee for Asia

11. As regards the matters referred to the Committee by the Coordinating Committee for Asia, the Committee agreed to discuss them either under the item dealing with the amendment of standards, or under the item dealing with the Codex Standard for Canned Tropical Fruit Salad.

Coordinating Committee for Europe

12. The Committee was informed that the Coordinating Committee for Europe had noted the decision of the Commission that the Codex Standard for Canned Fruit Cocktail should not be amended. It was also informed that the Coordinating Committee was not planning any work on size grading of peas.

Codex Executive Committee

13. The Committee noted the conclusion of the Executive Committee concerning the length and content of reports of Codex Committees. The Executive Committee had recommended that Codex reports should be brief and concise, but without sacrificing essential detail. Codex Committees should decide on the type and detail of information to be included in their reports. Decisions of Codex Committees included in their reports should be underlined in order to facilitate reading of the reports.

Codex Alimentarius Commission

14. The Committee was informed that the Joint FAO/WHO Committee of Government Experts on the Code of Principles concerning Milk and Milk Products had offered to elaborate general guidelines on the use of milk proteins in any type of commodities of interest to Codex Committees. The Commission had requested Codex Commodity Committees to express their views on the desirability or otherwise of developing such guidelines. The Committee noted that the use of milk proteins was not relevant to the products for which it had developed Codex standards.

15. The Committee noted that the Commission, at its 15th Session, had authorized the amendment of Codex Standards for Processed Fruits and Vegetables and that this matter would be dealt with under a later item in the agenda. The Committee also noted that the Draft Codex Standard for Dates had been returned to the Committee for consideration as regards the moisture content of a certain cane sugar variety of dates and also as regards the use of glucose syrup for coating of dates. It was agreed to consider the matters under later items in the agenda.

REVIEW OF PROGRESS CONCERNING ACCEPTANCES OF CODEX STANDARDS FOR PROCESSED FRUITS AND VEGETABLES

16. The Committee had before it a summary of acceptances of Codex standards in document CAC/ACCEPTANCES Part I-Rev.2. It was informed that the French and Spanish versions of this document would be issued to Governments in the near future. The document summarized notifications on acceptance of Codex standards as of February 1983. The Secretariat gave a verbal account of further progress relating to acceptances. During the 15th Session of the Codex Alimentarius Commission some 21 countries had indicated what action they were taking in connection with the acceptance of Codex standards for processed fruits and vegetables. The Secretariat also informed the Committee that Volume XII of the Codex Alimentarius (containing all Codex standards for processed fruits and vegetables) had been prepared in the English version and that the other versions (French and Spanish) were under preparation. It was the intention of the Secretariat to distribute Volume XII of the Codex Alimentarius with an accompanying letter from the Directors-General of FAO and WHO requesting Governments to indicate their positions regarding acceptance of the Codex standards. On the request of the Commission the Secretariat was planning to continue its drive on acceptances.

17. In addition to the above activities, the Committee was informed that the Secretariat of the Codex had held useful discussions with the EEC and intended to hold similar discussions with the CMEA and other economic groupings.

18. The Observer from the EEC informed the Committee that the EEC had undertaken a review of the current regulatory situation in respect of various products for which no EEC directives existed. It was the intention to summarize this information and to submit it to the Codex Secretariat for inclusion in Codex documents relating to acceptances. While not a communication of acceptances, this information was considered to be useful for those wishing to export processed fruits and vegetables to EEC Member States.

19. The Committee noted the decision of the Codex Committee on General Principles that communications of "non-acceptance", with an undertaking to permit the entry of products conforming with Codex standards, should no longer be presented in Codex documents on acceptances under the heading of "Non-acceptance". The Secretariat pointed out that a number of Governments and the EEC had found this form of notification useful, since it served the purpose of facilitating international trade without the difficulties relating to formal acceptance under national legislations.

20. The Delegation of Iraq informed the Committee that Iraq followed closely Codex standards in the development of its national standards, except for recommendations relating to pesticide residues and additives in food. Iraq wished to develop its analytical capabilities to control residues in food before considering the acceptance of Codex recommendations for maximum limits for such residues and additives. The Delegation of Iraq also stated that the existence of several international standards, such as those elaborated by Codex and those elaborated by EEC, caused difficulties in export trade. All efforts should be made to arrive at internationally harmonized standards.

21. The Delegation of The Netherlands remarked that the exercise of the EEC of reviewing the current regulatory situation in the Member Countries was intended to stipulate on which conditions fruit and vegetable products could be imported rather than representing a process of accepting Codex Standards. The Delegation stressed the need for harmonization of Codex recommendations and regulations in EEC countries.

22. The Delegation of Switzerland informed the Committee that difficulties were encountered in coordinating the national review process and the review, by the Codex, of its own standards. This had led to delays in the notifications of acceptance of Codex Standards.

23. The Delegate from Kenya indicated that Kenya had studied Codex standards in the establishment of Kenyan national standards and had found Codex standards useful. Speaking as Coordinator for Africa, he urged Member States to communicate their acceptance of Codex standards and also expressed his support of the statement of the Delegation of Iraq (see para 20 of this Report).

24. The Delegation of Argentina informed the Committee that Argentina had completed a review of several Codex standards for processed fruits and vegetables and had already communicated its acceptance of some 17 standards; some of the acceptances were with specified deviations.

ESTABLISHMENT OF WORKING GROUPS

25. The Committee appointed Dr. W. Horwitz of the USA as Chairman of a working group consisting of Delegates from the United Kingdom, United States of America and France, with participation of the Observer from the EEC and of the Codex Secretariat. Other Delegations were also invited to participate. The Working Group was requested to reconsider the methods of analysis to be included in Codex Standards for Processed Fruits and Vegetables in the light of Government comments received and to report to the Committee during the Session (see paras 77-79 of this Report).

26. The Committee also appointed Mr. C.P. Erridge of Canada as Chairman of a working group to consider the Draft Codex Standard for Honey in the light of comments received from Governments. Participants at the Session were invited to join the Working Group, which was requested to report back to the Committee during the Session. Members of 12 Delegations wished to participate in the Working Group (see paras 131-154 of this Report).

DRAFT STANDARD FOR DATES

Moisture Content

27. The Committee had before it document CX/PFV 84/2-Part I prepared by Tunisia. The document was introduced by the Delegation of Tunisia which explained the purpose for the amendment of the provision for moisture content of certain varieties of dates included in the Codex Standard. The paper gave information on the marketing of Deglet Nour variety of dates both locally and in export trade. This cane sugar variety of dates, which was covered by the provision of 26% moisture content, frequently contained moisture above the maximum level indicated in the standard. Recent analysis showed a moisture content of approximately 27.1% with a total sugar content of 56.2%. As this represented a proportion of moisture to sugar of 1 to 2, the Delegation of Tunisia maintained that the product would be stable when presented for sale to the consumer. A maximum limit of 26%, as provided for in the standard, represented an unnecessary trade barrier to the Deglet Nour variety of dates and also represented an economic disadvantage for Tunisia.
28. The Committee noted that dates were harvested in the physiologically mature state but that harvesting was done at various points after maturation and following drying on the trees, resulting in products of varying degrees of moisture content. For example, certain types of dates were harvested at a point where they contained up to 40 to 50% moisture. Such "fresh dates" were normally stored under refrigeration or were consumed in local markets. Refrigeration of dates with a moisture content of around 22-25% was also usual in the trade, even though such low moisture products offered for sale to the consumer were shelf-stable.
29. The Committee noted that the Draft Codex Standard for Dates covered commercially prepared dates packed ready for direct consumption. The maximum level for moisture content served the purpose of ensuring that the product offered for sale had an appropriate shelf stability. It was not the intention of the Committee to standardize fresh dates containing high moisture content which were perishable and required refrigeration during marketing.
30. Several Delegations were in favour of the proposal of the Delegation of Tunisia. The Delegation of France suggested that the Deglet Nour variety of date should be exempted from the maximum moisture content of 26%. The Delegation of the United Kingdom was of the opinion that dates were traditionally expected to be shelf-stable products and that, therefore, raising the moisture content requirement for the cane sugar variety, such as Deglet Nour would not be appropriate.
31. As no agreement could be reached concerning the way to approach the proposal of Tunisia concerning the moisture content of the Deglet Nour variety of Dates, the Committee agreed to set up a working group under the chairmanship of Mr. W.G. Aldershoff of The Netherlands to study all information available and to make a concrete proposal regarding the need or otherwise to amend the Draft Codex Standard for Dates.
32. The Chairman of the Working Group, Mr. Aldershoff, reported on the conclusions of the Working Group which had been set up to discuss the question of moisture content of Deglet Nour variety of Dates. The Working Group, after a brief deliberation, had reached agreement and proposed that in Section 3.1.1(a) the following should be inserted:
- "Deglet Nour (unprocessed) 30%".
33. The Delegation of the United Kingdom was of the opinion that the use of the expression "unprocessed" would be misleading since it would imply that other dates were always processed. This was not the case in practice. The Delegation also pointed out that the product marketed as Deglet Nour with a moisture content of 30% represented a product which was not typical of the products covered by the standard, since it did not have the shelf-stability expected of it by the consumer. The Delegation of Kenya suggested that the word "variety" should be used instead of "unprocessed". The Delegation of France supported the conclusions of the Working Group and suggested that reference to Section 2.1(d) and (e) could be made in order to clarify the meaning of the term "unprocessed".
34. The Committee adopted the amendment proposed by the Working Group and also accepted the suggestion of the Delegation of France. The Committee decided to submit the amendment to Section 3.1.1(a) to the Commission for adoption and inclusion in the

Draft Codex Standard for Dates. The text of the proposed amendments is given in Appendix II to this Report. The Delegation of the United Kingdom reserved its position concerning this decision.

Coating of Dates with Glucose Syrup

35. The Committee had before it a document prepared by France (CX/PFV 84/2-Part II) providing information on the technological justification for coating dates with glucose syrup containing humectants. The Delegation of France, in introducing the paper, indicated that the use of glucose syrup containing glycerol or sorbitol in the treatment of dates served to maintain the total sugar/moisture ratio at the correct level. The amount of sorbitol or glycerol left on the product was minimal (0.21% approximately) and this small amount helped to give to the product an appearance desired by the consumer. The Committee adopted the amendment proposed by France with the addition of sorbitol (see CX/PFV 84/2, Part II).

36. The Delegation of the United Kingdom proposed that the fact that glucose syrup had been used should be included prominently on the label in connection with the name of the product. The question was also posed as to whether free-flowing agents, such as vegetable oils, were being used by the Industry in the processing of dates. The Committee was informed that several free-flowing agents were being used by the Industry, especially with the softer varieties. The Committee agreed to include in the standard the following optional ingredients for use as free-flowing agents: vegetable oils, flour and sugars. It was also agreed that the declaration on the label of these optional ingredients should follow Section 4.1.2 of the revised version of the General Standard for the Labelling of Pre-packaged Foods, under elaboration (ALINORM 85/22, Appendix III).

37. The Committee decided to submit the amendments to Sections 2, 4, 7 and the new Section on Optional Ingredients to the Commission for adoption and inclusion in the Draft Codex Standard for Dates. The text of the proposed amendments is given in Appendix II to this Report.

STYLES - CONSIDERATION OF AMENDMENT OF CODEX STANDARDS

38. The Committee had before it the Proposed Draft Amendment to Codex Standards for Canned Processed Fruits and Vegetables regarding a General Provision for Styles (ALINORM 83/20, Appendix III).

39. The Committee noted that in their written comments Poland and the United States of America had proposed a list of products to which the provision for styles, as stated in CX/CP 81/5, Section 3.3, should not apply. These were:

CODEX STAN 18-1981	.....	Sweet Corn
CODEX STAN 40-1981	.....	Fresh Fungus "Chanterelle"
CODEX STAN 57-1981	.....	Processed Tomato Concentrate
CODEX STAN 58-1981	.....	Canned Green Peas
CODEX STAN 60-1981	.....	Canned Raspberries
CODEX STAN 62-1981	.....	Canned Strawberries
CODEX STAN 67-1981	.....	Raisins
CODEX STAN 78-1981	.....	Canned Fruit Cocktail
CODEX STAN 79-1981	.....	Jams (Fruit Preserves) and Jellies
CODEX STAN 81-1981	.....	Canned Mature Processed Peas
CODEX STAN 99-1981	.....	Canned Tropical Fruit Salad
CODEX STAN 131-1981	.....	Unshelled Pistachio Nuts

40. These were products which, in the opinion of these countries, could, by their nature, either not be presented in different styles (e.g. canned peas, pistachio nuts) or which, because of their compositional provisions (e.g. fruit cocktail, tropical fruit salad), were already excluded from 'style' descriptions.

41. The Committee discussed whether Citrus marmalade, which was presented to the consumer in different forms (jelly marmalade or with fruit content cut in various ways) might not be open to style provisions.

42. The Committee noted that the standard for Citrus marmalade already provided for jelly marmalade and marmalade containing peel and decided to keep it in the list set out above.

43. The question was raised whether tropical fruit salad should be excluded from the list in para 39 above. It was agreed to defer discussion on this point until later in the Session when the proposed amendments to the Codex Standard for Tropical Fruit Salad would be discussed (see para 81 of this Report).

44. The Committee agreed to the list of standards as presented. It noted that Section (c) in para B(1) of the amendment (see Appendix III) referred to labelling and that a consequential amendment to the labelling sections of these standards would be made as indicated in para B(3) of the amendment (see Appendix III).

45. The Delegation of Canada maintained the position it had taken at the last Session of the Committee that it did not favour a general provision for "other styles", as styles were subject to quality grading which made the application of general provisions difficult.

46. The Committee decided to submit the above proposals to the Codex Alimentarius Commission noting that the changes made were not substantive (see Appendix III to this Report).

PACKING MEDIUM - CONSIDERATION OF AMENDMENT OF CODEX STANDARDS

47. The Committee had before it Government comments (CX/PFV 84/4-Part II) on the Brix value to be applied to various products in the light of the provisions set out in the Proposed Draft Amendment to Codex Standards for Canned Processed Fruits and Vegetables regarding Packing Media, Composition and Labelling (ALINORM 83/20, Appendix III).

48. There was some discussion on whether Section 2.1.4 of the Draft Amendment should include a category "slightly sweetened fruit juice". It was agreed not to add such a category since the text as it stood had already been agreed by the Commission.

49. The Committee then considered Table 1 of Appendix III above as amended by the Delegation of the USA. This contained values which had, as a result of comments received, been harmonized by types of syrup.

50. The Committee agreed to indicate that, where blanks occurred in the Table, the Brix values were "not applicable", with the exception of that for canned pineapple, where under "extra light syrup in Brix" the Committee agreed to add <14 and <16 for canned grapefruit.

51. The Delegation of Canada stated that, although it was not in principle against the amendment to the Table, there was a risk that such new changes would delay Canada's work on the harmonization of national regulations with Codex Standards.

52. The Committee then considered the following labelling provisions:

Section 7.1.4.2

The Delegation of Thailand proposed that when the packing medium was composed only of the juice of the packed fruit it should be declared as "in its own juice". The amendment was accepted and the three categories in 7.1.4.2 changed accordingly.

Section 7.1.4.9

The Delegation of the United Kingdom proposed that the fruit juice component of any packing medium should not be declared if it comprised less than 20% of the total packing medium, rather than 10% as at present. The Committee noted that such a change was not necessary since water would still be in excess in the packing medium and maintained the present text.

53. The Delegation of France was of the opinion that 'heavy syrup' and 'extra heavy syrup' in French should be translated as 'sirop lourd' and 'sirop très lourd'. The Delegation of Canada indicated that in that country the expressions 'sirop épais' and 'sirop très épais' were well understood by the consumer.

54. The Committee adopted the text of the amendment as revised (see Appendix IV of this Report) to be applied to all Codex Standards for Canned Processed Fruits and Vegetables as indicated in the Table in Appendix IV.

DATE MARKING - CONSIDERATION OF AMENDMENT OF CODEX STANDARDS

55. The Committee had before it proposed draft amendments on date marking at Step 4 of the Procedure (see Appendix IV to ALINORM 83/20) and comments received thereon as contained in CX/PFV 84/4-Part III (France, Poland, Thailand, United Kingdom).

56. The Committee was informed that the 15th Session of the Commission had authorized that the above amendment be elaborated in accordance with the established procedure. The Secretariat summarized the conclusions reached by the Committee at its previous session, namely that (a) date marking provisions should be included in all standards for processed fruits and vegetables; and (b) the wording to be included in the standards should be in conformity with Codex guidelines on date marking of prepackaged foods and, specifically, with the sections on "date of minimum durability" and "storage instructions".

57. The wording in Appendix IV to ALINORM 83/20 required that for products with a shelf-life of less than three months the date to be declared consisted of the day, month and year, and that for products with a longer shelf-life the declaration of month and year would suffice.

58. The Committee had been informed that the 16th Session of the Codex Committee on Food Labelling had been in favour of this Committee's proposal and had subsequently not endorsed the modified date marking provisions which had been submitted to it by the ECE/Codex Group of Experts on Fruit Juices for products similar to canned processed fruits and vegetables. However, the 15th Session of the Commission had noted that the Delegation of the United Kingdom would submit substantial amendments to the above draft amendments, proposing the declaration of the year only for products with a shelf-life of more than 18 months. The Commission had also noted that the amendments proposed by the United Kingdom were similar to the date marking provisions elaborated by the ECE/Codex Group of Experts and had, therefore, adopted the date marking provisions for fruit juices and had recommended to the Codex Committee on Food Labelling and to this Committee to reconsider their decisions on date marking provisions (para 308 of ALINORM 83/43). The Codex Committee on Food Labelling at its 17th Session had endorsed the date marking provisions for fruit juices and had also agreed to discuss date marking of shelf-stable products as a general matter at its next Session (para 309 of ALINORM 85/22).

59. The Committee noted that there were now several options as to how to proceed:

- (a) To continue with the wording as contained in Appendix IV to ALINORM 83/20 requiring the declaration of day, month, and year for products with a shelf-life of less than three months and of month and year for all other products, in accordance with the Codex Guidelines on Date Marking;
- (b) To accept the proposal made by the United Kingdom, i.e., to introduce in (a) a second cut off period of 18 months, after which the declaration of the year only was required;
- (c) To accept the wording of the date marking provisions for fruit juices, requiring the declaration of the month and year for products with a shelf-life of less than 18 months and of the year only for products with a longer shelf-life; in this case, it would also have to be decided whether the above provision was applicable to dried fruits as well as to canned products; or
- (d) To postpone further consideration pending the decision on date marking by the Codex Committee on Food Labelling in which case technological advice would have to be provided to the Labelling Committee.

60. The Committee agreed that proposal (d) was not feasible since the Committee was preparing for adjournment.

61. The Delegation of the United States drew attention to the advice by the 15th Session of the Commission to consider date marking on a standard by standard basis (para 301 of ALINORM 83/43). The Delegation felt that it was necessary to consider the standards one by one to decide for which, if any, date marking should be mandatory and for which voluntary date marking would be sufficient. The Delegation of the United States was in favour of option (c) above, at least for canned

products, since the text had already been accepted by the Commission. Date marking for dried products should be discussed separately since these products might require different date marking provisions.

62. The Delegation of Switzerland expressed the view that, in order to make date marking meaningful to the consumer, a uniform format should be adopted for all foods and that the most appropriate format was that contained in the Codex Guidelines on Date Marking. This view was supported by the Delegation of Norway.

63. The Delegation of The Netherlands agreed with the United Kingdom that option (b) above covered all types of products and reflected also the position of the EEC on date marking, while option (c) supported by the Delegation of the United States, covered canned products only and was not applicable to dried products.

64. Canada referred to its comments made at the previous session that canned fruits and vegetables were shelf-stable under normal storage conditions and, therefore, should not require date marking. A similar decision had also been made by the Codex Committee on Fish and Fishery Products for canned fishery products. The Committee was reminded that the Codex Committee on Food Labelling was in the course of reviewing this matter and would advise all Codex Committees on date marking of shelf-stable products.

65. In the Argentine Republic the Food Code, in the chapter on labelling, lays down that any food product, whether produced nationally or imported, that is marketed in Argentina must be correctly labelled, specifying among other things the year of harvesting, processing or packaging; day, month and year of packaging or date of processing and duration of usability, according to the requirements specifically laid down by the Code, or the corresponding health authority. Argentina would, therefore, support the Committee's decision to propose to the Joint FAO/WHO Commission that for the standards on processed fruits and vegetables it be made obligatory for some of the above-mentioned data to be given on the label of packages. As regards the date of expiry of products, in itself extremely difficult to determine owing to a quantity of factors, such as quality of the raw material used, degree of maturity, etc., Argentina considers that the task should be left to the judgement of the manufacturers, and should, in principle, be of an optional nature.

66. The Delegation of Iraq supported strict date marking provisions taking into account different storage conditions since this country had problems with canned foods, especially fruits and vegetables.

67. The Committee recognized that option (b) was the most appropriate provision for inclusion into all the standards for processed fruits and vegetables, whether canned or dried products, since it took into account the long shelf-life of the products. It was also recognized that canned products would not fall into the category of products with a shelf-life of less than three months. The Committee agreed, however, to include the same provisions for date marking and storage instructions in all its standards. The provisions read as follows:

- (a) "The 'date of minimum durability' (preceded by the words 'best before') shall be declared by the day, month and year in uncoded numerical sequence except that for products with a shelf-life of more than three months but not more than 18 months, the month and year will suffice and for those with a shelf-life of 18 months or more the year will suffice. The month may be indicated by letter in those countries where such use will not confuse the consumer. In the case of products requiring a declaration of month and year only, and the shelf-life of the product is valid to the end of a given year, the expression 'end (stated year)' may be used as an alternative.
- (b) In addition to the date of minimum durability, any special conditions for the storage of the food shall be indicated if the validity of the date depends thereon.
- (c) Where practicable, storage instructions shall be in close proximity to the date marking".

68. The Committee agreed to include the above provisions in the standards presently under consideration and, as a consequential amendment under the established procedure, in all standards for processed fruits and vegetables already

adopted by the Committee. The Delegations of Switzerland and Norway reserved their position on the Committee's decision (see also para 60 above).

CONSIDERATION OF THE INCLUSION OF PROVISIONS FOR CONTAMINANTS IN
CODEX STANDARDS FOR PROCESSED FRUITS AND VEGETABLES

69. The Committee recalled that, at its last Session, a Working Group coordinated by Australia (Mr. L. Erwin) had considered the above question and had proposed (see Appendix X to ALINORM 83/20, para 13) maximum levels for lead and tin. Maximum levels for cadmium had not been proposed since it did not derive from the canning process.

70. The Committee had agreed with the recommendations of the Working Group, except for the maximum level for lead in tomato concentrate for which 1.5 mg/kg had been recommended on a temporary basis, and had circulated the proposed maximum levels to Governments asking them to comment on the maximum levels for lead and tin as an amendment, at Step 3, to Codex Standards for Processed Fruits and Vegetables. The comments received are contained in document CX/PFV 84/5.

71. The Committee noted that the comments showed basic agreement with the figures recommended but that there was some disagreement on how the figures should be applied. The Delegation of the United Kingdom and The Netherlands were of the opinion that all cans should comply with the limits rather than those from lot sampling schemes or averages based on sampling plans.

72. The Committee also noted that Codex limits represented a cutoff point at which some contaminants such as tin were controlled by 'Good Manufacturing Practice' (GMP). To other contaminants, such as lead, which might come both from the environment and the container, GMP would not apply. Although it was recognized that some countries required, especially at retail level, compliance of individual cans, other considerations were involved in the inspection of large shipments; in fact, the figures recommended by the Committee had in large part been established by examination of samples from lots.

73. The Committee further noted that there was a consensus for the recommended maximum levels for lead and tin and advanced them to Step 5 of the procedure for all Codex Standards for Processed Fruits and Vegetables with the exception of the maximum level for lead in tomato concentrate. It recommended to the Commission the omission of Steps 6 and 7 and adoption at Step 8. It was also recommended that the matter of compliance with contaminant levels in general should be discussed by an appropriate Codex Committee.

74. The Committee noted the reservation of the Delegation of Switzerland that the maximum level for tin should be 150 mg/kg for metal containers and 50 mg/kg for glass containers. The Delegation of Iraq indicated that Iraq recognized a maximum level for tin of 150 mg/kg in cans and did not accept figures higher than that.

75. The Committee also noted that the Delegation of the Federal Republic of Germany was of the opinion that the maximum levels for contaminants in canned fruits and vegetables should be as follows:

Lead 0.4 mg/kg
Tin 100 mg/kg

The Delegation of Iraq indicated that Iraq recognized a maximum level for lead to be less than 1mg/kg for canned foods, including tomato concentrate. Cuba, in its written comments, did not agree on a general limit of 1.0 mg/kg for lead and indicated that the level should rather be based on analyses by product grouping.

76. It was noted that high priority had been given to heavy metal contaminants, especially environmental, by the WHO International Programme of Chemical Safety (IPCS) and that Codex would, in the future, also be more involved in the control of environmental contaminants.

PROPOSAL TO DELETE PROVISIONS FOR COLOURS AND FLAVOURS

77. The Committee discussed a proposal of the Coordinating Committee for Asia to delete the provisions for colours and flavours from the Codex Standards for Canned Pineapple, Canned Fruit Cocktail, Canned Peas and Canned Mature Processed Peas (see Appendix III, ALINORM 83/15). This proposal of the Coordinating Committee was prompted by a concern that such additives may be used to mask inferior quality of ingoing raw materials used in the preparation of the product.

78. After discussion, the Committee agreed that the flavours and colours included in the above standards were necessary in the formulation of the canned products under good manufacturing practices. It decided to recommend to the Commission that the provisions for colours and flavours should not be deleted from the above standards. The Delegation of Iraq indicated that added colours and flavours had to be indicated on the label of products sold in that country.

REVISION OF METHODS OF ANALYSIS IN CODEX STANDARDS FOR PROCESSED FRUITS AND VEGETABLES

79. The Committee had before it document CX/PFV 84/6 containing Government comments on the methods of analysis for processed fruits and vegetables included in Appendix VI to ALINORM 83/20 and a report of the Working Group on Analysis established during the session (see para 25 of this Report). Dr. Horwitz (USA) introduced the report and outlined the main conclusions of the Working Group. The report of the Working Group is given in Appendix VI to this Report. The Working Group had reviewed the various methods of analysis for processed fruits and vegetables on the basis of comments received and had also reached conclusions on certain general matters as outlined in the report of the Group. For example, the Group had recommended that procedures utilizing visual inspection techniques should not be included in the section on methods of analysis since these were not analytical methods as normally understood, but should be included in some other appropriate section of Codex standards. It had also concluded that where a type I (defining) method had been included in a Codex standard for a particular criterion, no further Codex methods should be included for the determination of that same criterion. Furthermore, the Group had agreed that references to publications of the national organizations containing standard methods adopted as Codex methods should include all references to equivalent methods. This necessitated occasionally the inclusion of more than one reference to a standard method, e.g. the method published by AOAC, ISO and other organizations.

80. The Delegation of Argentina stated that it wished to reserve its position concerning the decisions on methods of analysis since documents on this subject had not been received by Argentina to enable the documents to be studied by the appropriate experts.

81. The Committee concurred with the conclusions of the Working Group and decided that the methods of analysis included in Appendix VI should be referred to the Commission for adoption and inclusion in the Codex Standards for processed fruits and vegetables. The Committee agreed that there was no need for a further round of comments and that Steps 6 and 7 of the Codex procedure should be omitted.

AMENDMENT OF THE CODEX STANDARD FOR TROPICAL FRUIT SALAD

82. At its 2nd Session (March 1979), the Codex Coordinating Committee for Asia agreed to request the Commission to amend the Codex Standard for Canned Tropical Fruit Salad to allow the designation "Tropical Fruit Cocktail" as an alternative to "Tropical Fruit Salad" (ALINORM 79/15, para 110). The Commission, at its 13th Session (December 1979), decided that the matter should be referred to the Codex Committee on Processed Fruits and Vegetables (CCPFV). The 15th Session (March 1980) of the CCPFV referred the proposal of the Coordinating Committee to a Working Group consisting of Australia, Federal Republic of Germany, Japan, South Africa, Thailand and the USA. The Working Group was requested to report back to the next Session of the CCPFV (ALINORM 81/20, para 10). The Working Group's report was considered by the 16th Session (March 1982) of the CCPFV. The Committee agreed that the Tropical Fruit Salad Standard should be amended to provide for an alternative name of the product and for an increase in the list of fruits (ALINORM 83/20, paras 38-39). The Committee decided that a circular letter be sent to Governments requesting their views. Australia and Thailand were requested to jointly consider the Government comments and formulate proposals for the amendment of the standard (ALINORM 83/20, para 40). The 15th Session (July 1983) of the Commission agreed that the procedure for the amendment of the Standard be continued in respect of:

(a) Use of the designation "fruit cocktail" as an alternative to the designation "salad" (a term which did not convey the appropriate meaning to consumers in certain countries); and

(b) the extension of the list of fruits (ALINORM 83/43, para 302).

83. The Committee had before it document CX/PFV 84/8 prepared by Australia and Thailand. The Delegation of Australia, in introducing the paper, indicated that it had been possible to prepare recommendations on (a) alternate names for 'tropical fruit salad' and (b) additional fruits to be included in the list of fruit ingredients on the basis of comments received. The Committee also had before it Appendix III to ALINORM 83/15 which included the recommendations of the Coordinating Committee for Asia in respect of (b) above.

(a) Alternate Name for 'Tropical Fruit Salad'

84. There was discussion of the proposed alternate names 'tropical fruit cocktail' and 'tropical fruit mix'. As regards the use of the term 'cocktail', several Delegations felt strongly that this term should be reserved for a 'diced' product as this was an essential feature expected by the consumer. In examining the list of basic fruits in the standard, it was recognized that some of these could not be diced and heat processed without disintegration of the diced fruit ingredient. Some Delegations indicated that the designation 'salad' was not appropriate in their countries as it implied vegetable salad. The Delegation of India questioned the designation 'mix' which implied a crushed and mixed product.

85. The Committee, after full discussion of whether dicing should be a condition for the use of the designation 'cocktail', agreed to permit its use for all products whether diced or not. The Delegation of France and the observer from South Africa were not in agreement with this decision. It was agreed to recommend to the Commission that the following two additional names be added in section 7.1.1 of the standard for all styles:

"Tropical Fruit Cocktail"; and
"Tropical Fruit Mix"

it was also agreed that a footnote be added using the standard Codex text requesting Governments to indicate when notifying their acceptance of the standard as to what name(s) were permitted under their legislation.

(b) Extension of the List of Fruits

86. The Committee agreed to add carambola and water melon (5% min., 15% max. and 5% min., 20% max., respectively) in section 2.1.2 of the standard. The words "except water melon" was added in section 2.1.1 'optional fruits' following melon. The Secretariat was requested to check the botanic name of melon included in section 1.2(b) of the standard, to decide whether the botanic name for water melon also needed to be specified in the standard and, if necessary, make the appropriate editorial changes in the standard. The Committee agreed to recommend to the Commission that the above changes should be made in the Standard for Canned Tropical Fruit Salad. It was not considered necessary by the Committee to follow the amendment procedure for the above changes concerning the alternate names and the changes to the list of optional fruit ingredients.

CONSIDERATION OF THE REVISED DRAFT STANDARD FOR CANNED PALMITOS AT STEP 7

87. The Committee had before it the above standard as contained in CX/PFV 84/9 which has been revised by Brazil based on comments from France, Australia and other countries. Comments on the revised text had been received at a late stage from various countries: (Federal Republic of Germany, Sweden, Netherlands, Poland, Thailand) and these were, therefore, presented verbally by the Secretariat.

88. The Delegation of Brazil, in introducing the document, requested the Secretariat to make certain editorial changes to bring the format in line with other standards and proposed to discuss the revised draft section by section with the aim to advance the Standard to Step 8 of the Procedure. This was agreed to by the Committee.

Scope and Section 1.1 - Product Definition

89. The Committee agreed that part of the second sentence of the Scope would be more appropriately included in the Section 1.1(c) and amended both sections accordingly. It was also agreed that the treatments indicated in Section 1.1(c) could be carried out before as well as after sealing the product in the containers. The Committee agreed to make allowances for this by amending the provision to read "..... before and/or after being sealed".

Section 1.3 - Styles

90. The Committee noted that a provision for "sliced lengthwise" previously included in this section had been deleted from the present revised version.

Section 1.3.2 - Allowances for Styles

91. The Committee noted an Australian proposal to amend Sub-sections 1 and 2(a) and (b) by replacing the term "predominant" by "average". The Committee agreed with the Delegation of The Netherlands that this would change considerably the meaning of the provisions concerned and left the provisions unchanged.

Section 1.3.2.2

92. The Committee agreed to include the reference number to the Codex Sampling Plans, that is, "CAC/RM 42-1969".

Section 1.4

93. The Delegation of Brazil pointed out that these provisions had already been contained in the previous version of the standard, except that Section 1.4.2 - compliance with "sample size" designations - had been added. With regard to the latter, several Delegations were of the opinion that the tabulated part of the provision was difficult to understand and would only complicate the standard without adding anything meaningful to the Standard. The part on "fractions" was prescribing methodology which was anyway commonly followed in food inspection. The Committee agreed to replace Section 1.4.2(a) by the relevant provisions included in the Codex Standard for Canned Asparagus, except that the figure for canned palmito should read "30%" and the term "adjacent size group" should read "size groups above or below".

94. The Committee agreed to retain sections 1.4.2(b) and (c) since they were necessary for the provisions on compliance with defects later in the Standard.

Section 2.1.1 - Other permitted ingredients

95. Several Delegations expressed the view that Subsection (d) as presently worded was open to misinterpretation as to whether the five percent figure applied to starches or to fatty ingredients. The Committee noted that the figure of 5% was a typing error and that the maximum level for starches should be 0.5% (see also para 102 of this Report).

96. At the request of the Delegation of France, the Committee decided that Section 2.1.1(d) should include all starches except chemically modified starches which were included in Section 3.6 - modified starches (food additives). The Committee adopted a wording included in the Codex Standard for Canned Carrots and which covered the points raised.

Section 2.2.5 - Defects and Allowances

97. The Committee agreed with the Delegation of Brazil that the square brackets could be removed from the limit on mineral impurities in section (b) since the proposed limit of 0.1% was appropriate. The Committee noted a proposal by the Delegation of the United Kingdom that (a) the defects should be better defined since they were as presently drafted open to interpretations; (b) the defects should be listed in a tabular form and (c) one global limit should be established for all defects.

98. The Committee decided that the latter was not feasible because of the wide variations in values as well as in the form in which defects were expressed. The Committee also decided not to make, at present, any amendments to the format of provision 2.2.5 but agreed that there could be an amendment at a future date if a more suitable text could be elaborated.

Section 3 - Food Additives

Section 3.1 - Stannous chloride

99. The Committee was informed that several countries opposed the use of stannous chloride as a food additive, especially as every effort was being made to keep tin in foods as low as possible. However, the Committee was also informed that stannous chloride was needed as a stabilizer in products packaged in glass or lacquered cans. This had been recognized by the Codex Committee on Food Additives

in other Codex standards, e.g. for canned asparagus. The Committee noted that the provision for stannous chloride was identical to the one included in the Codex Standard for Canned Asparagus and recommended its endorsement by the Codex Committee on Food Additives.

100. The Committee was informed by the Delegations of France and The Netherlands that the term "enamel" described a different material than that normally used in lacquered cans. The Committee agreed that both terms were used and that the provision as presently drafted covered this.

Section 3.4 - Antioxidants

101. The Delegation of Switzerland expressed the view that if BHA and BHT were permitted at 100 mg/kg they had still a technological function in the product and that the phrase related to carry-over be deleted from this provision. The Delegation of the United Kingdom felt that, since the two additives were not added intentionally but as part of a fatty ingredient, the carry-over provision would be more appropriate. The Committee was informed by the Delegation of Brazil that BHA and BHT were indeed carried over and not intentionally added.

102. The Committee agreed that for this product the carry-over principle should apply and that this should be expressed appropriately in the standard. Consequently Section 3.4 was deleted.

Section 3.5 - Vegetable Gums, Pectin, Alginates

103. The Committee noted comments from The Netherlands which indicated that amidated as well as non-amidated pectins had been evaluated by the Joint FAO/WHO Expert Committee on Food Additives and agreed to amend the title of Section 3.5 to read "pectins" instead of "pectin" and Section 3.5.2 to read "pectins, amidated and non-amidated".

Section 3.6 - Modified Starches

104. The Committee was informed by the Delegation of Brazil that the revised text of the standard contained a shortened list of modified starches with a maximum level of 0.5% singly or in combination.

Section 4 - Contaminants

105. The Committee noted the reservation of the Delegation of Switzerland that the maximum level for tin should be 150 mg/kg for metal containers and 50 mg/kg for glass containers. The Delegation of Iraq indicated that Iraq recognized a maximum level for tin of 150 mg/kg in cans and did not accept figures higher than that.

Section 5 - Hygiene

106. The Committee noted that no amendments had been made to this Section. The Delegation of France expressed the opinion that Section 5.4(b) should require an equilibrium pH of below 4.6 to destroy spores of *Clostridium botulinum*. The pH value of 4.6 itself was considered to be too high. France prescribed generally to a pH limit of 4.5 as a safety measure for all products concerned. The Committee was informed that the present text reflected the position which the Codex Committee on Food Hygiene had established generally for the Codex Alimentarius and decided, therefore, to leave the provision unchanged. The Delegation of Mexico pointed out that the Spanish version had to be brought in line with the English text.

Section 6 - Weights and Measures

Section 6.1.4 - Minimum Drained Weight

107. The Delegation of Brazil explained that the values of 425-ml packs had been elaborated in cooperation with France and proposed to delete the brackets. The Delegation of France indicated that it had carried out statistical sampling for 425-ml packs of pieces and had found some large variations. The Delegation proposed, therefore, to raise the figures for 425-ml packs (pieces) to 56. This view was not supported by Brazil and the Committee agreed to leave the figures unchanged.

Section 7 - Labelling

Section 7.1.1.1

108. The Delegation of France stated that in France "Palm stipe-cuts" could not be considered to be palm hearts and the product should be named "morceaux de stipes de palmiers" in connection with the requirements in Section 7.1. The Committee agreed that this referred to the French version only and to correct the text accordingly.

Section 7.2 - List of Ingredients

109. At the request of the Delegation of Iraq, the Committee agreed that if pork fat, lard or beef fat were used in the product, they should be always declared by their specific name. The Committee also agreed that the relevant wording included in the Revised Codex Standard on Labelling of Prepackaged Foods should be included in this Section.

Section 7.3 - Net Contents

110. The Delegation of Canada stated that in Canada net contents of this product had to be declared by volume.

Section 7.8 - Date Marking and Storage Instructions

111. The Committee agreed, in accordance with its earlier decision on date marking, to include the provisions for date marking and storage instructions as contained in para 67 of this Report.

Section 8 - Methods of Analysis and Sampling

Section 8.1

112. The Delegation of the United Kingdom drew attention to the decision of the 15th Session of the Commission that sampling plans should be established for different types of compositional criteria in accordance with the General Principles for Sampling. The Delegation, therefore, proposed to introduce two sub-sections as follows:

8.1.1 Method of Sampling - Defects

(present text of Section 8.1)

8.1.2 Method of Sampling - Compositional Criteria

(to be elaborated)

The Chairman pointed out that sampling would be discussed as a general matter under a later item (see para 138 of this Report) and that the Committee could at that point of time also give consideration to this specific standard.

Status of the Standard

113. The Committee decided to advance the Draft Standard for Canned Palmitos, as contained in Appendix VII to this Report, to Step 8 of the Procedure.

CONSIDERATION OF THE DRAFT STANDARD FOR CANNED CHESTNUTS AND CANNED CHESTNUT PUREE AT STEP 7

114. The Committee considered the above Draft Standard (ALINORM 83/20, Appendix VIII) in the light of Government comments (CX/PFV 84/11 and CRD/2). The Committee agreed to the changes given in the following paragraphs:

Section 1. - DESCRIPTION

Section 1.1.1

115. On a proposal of the Delegation of France, the Committee agreed to add under this Sub-section dealing with canned chestnuts, a provision for packing both with and without water.

Section 1.1.2

116. It was agreed that Section 1.1.2(a) should read "pureed by sieving or other mechanical means in order to obtain a fruit pulp from chestnuts as defined in sub-section 1.1.1(a)"

Section 1.2 - Styles

Section 1.2.1.1

117. It was agreed to refer to chestnuts in the plural (no change was necessary in the French text).

Section 1.2.2.1

118. It was agreed to bring the English and French texts into line by referring to "sweetened-with added sugars as listed in 2.1.2" and "unsweetened-without added sugars".

Section 2 - ESSENTIAL COMPOSITION AND QUALITY FACTORS

Section 2.1 - Packing Media

119. It was noted that no country used fruit juices in the packing media for chestnuts or in chestnut puree and that future developments were covered under "other styles". Sub-sections 2.1.1.2, 2.1.1.3 and 2.1.1.4 were, therefore, deleted and consequential amendments made elsewhere in the text where fruit juices were mentioned.

Section 2.1.3 - Classification of Packing Media

Section 2.1.3.2

120. The lower Brix value for "Heavy syrup" was corrected to read "not less than 18°Brix".

Section 2.2 - Other Ingredients

121. The reference to "sugars" was corrected to refer to sub-section 2.1.2. Since the addition of sugar amounting to not more than 2% of total net contents referred only to chestnut puree, reference to canned chestnuts was deleted.

Section 2.3 - Quality Criteria

122. It was noted that colours were used in the processing of chestnuts of the species *Castanea crenata* but not for those of *Castanea sativa*. The opening sentence was, therefore, amended to read: "Where no colour has been added, canned chestnuts or canned chestnut puree". Reference to oxidation of polyphenolic compounds was removed since this was not the only reason for browning and discoloration. In Section 2.3.3.2 a proposal to remove references to particle size in chestnut puree was not accepted.

Section 3 - FOOD ADDITIVES

Section 3.1 - Chelating Agents

123. The Delegations of France and of the United Kingdom expressed reservations to the use of sodium polyphosphate, the latter country, specifically, with regard to the processing of puree. No change was made to the text.

Section 3.2 - Firming Agents

124. It was noted that alum had not yet been considered by the Joint FAO/WHO Expert Committee on Food Additives (JECFA) and was not permitted in France or the EEC. It was decided to specify "alum" as aluminium potassium sulphate and to allow its use limited by GMP pending its evaluation by JECFA.

Section 3.3 - Antioxidants

125. The Delegation of the United Kingdom was opposed to the use of sodium ascorbate in chestnut puree. No change was made.

Section 3.4 - Acidifying Agents

126. It was noted that the title in French should read "acidifiants" and not "acidulants". The Delegation of France expressed a reservation on the use of malic acid. It was decided to leave citric acid and malic acid as limited by GMP and to require a 1% maximum level for tartaric acid.

Section 3.5 - Bleaching Agent

127. It was noted that SO₂ was used in bleaching whole Japanese chestnuts before colouring and was not used in the processing of the European varieties.

128. The Delegation of Switzerland expressed a reservation on the use of SO₂ at a maximum level of 30 mg/kg and proposed to reduce the maximum level to 20 mg/kg. The Delegation of the Federal Republic of Germany thought that there should be a lower level in the puree than in whole chestnuts. The Delegation of the United Kingdom opposed a maximum level of 30 mg/kg in puree and proposed 10 mg/kg. The Delegation of France also expressed a reservation on the use of SO₂.

129. It was agreed to add after Sulphur dioxide "(not authorized in puree)" and to maintain the present level.

Section 3.6 - Colours

130. It was noted that the three colours listed were used only in processing whole Japanese chestnuts and that the colouring factor in turmeric was curcumin. Crocin and Carthamus yellow had not been cleared by JECFA. It was decided to add after the latter two colours, "(subject to endorsement)".

Section 3.7 - Natural Flavours

131. The term "Natural" was deleted in the above title since the list included vanillin, a nature-identical flavouring substance.

132. It was agreed that, as a result of the Committee's previous decision (see para 105 of this Report), the maximum levels for tin and lead should be described as "temporarily endorsed". The Delegation of the Federal Republic of Germany expressed a reservation to the maximum level for tin.

Section 6 - WEIGHTS AND MEASURES

Section 6.1.4.2

133. The use of the words "unreasonable shortage" was questioned as being difficult to define. It was recognized that similar phraseology had been included in other processed fruits and vegetables standards to cover similar situations. No change was made.

Section 7 - LABELLING

Sections 7.1.1 and 7.1.2

134. It was noted that these sub-sections required amendment to cover the "other styles" provision (section 1.2.3).

Section 7.1.3

135. The term in square brackets "with seed coat" was deleted.

Section 7.6 - Country of origin

136. It was agreed to use the standard form of words to require that the country of origin shall be declared if its omission would mislead the consumer. The Delegation of Argentina was of the opinion that the country of origin should be mandatory and should be always declared on the label.

Status of the Standard

137. The Committee agreed to advance the Draft Standard for Canned Chestnuts and Canned Chestnut Puree to Step 8 of the Procedure.

SAMPLING PLANS FOR PROCESSED FRUITS AND VEGETABLES

138. The Committee discussed the proposed amendments to the Sampling Plans for Prepackaged Foods (CAC/RM 42-1969) on the basis of comments received from Governments (CX/PFV 84/12). The proposed amendments are contained in Appendix IX to ALINORM 83/20. In introducing the subject, the Secretariat indicated that very few comments had been received concerning the amendment (reduction) of the sample sizes included in the Tables in the Sampling Plans. However, from the comments received it appeared that the amended Tables with the reduced sample sizes were acceptable to Governments. The Committee also noted that New Zealand, in a written communication, had indicated that it would not be against further reduction of sample sizes.

139. The Delegation of the United Kingdom was of the opinion that the Committee should have before it appropriate statistical information on the basis of which it could judge the consequences of reducing the sample sizes before a decision concerning the acceptability of such a reduction could be reached. It was pointed out that such information, including OC curves, had been available to the last Session of the Committee. The Delegation of The Netherlands pointed out that the amended Sampling Plans had been referred to the Codex Committee on Methods of Analysis and Sampling for examination. The Committee agreed that the Sampling Plans for Prepackaged Foods included in Standards for Processed Fruits and Vegetables applied to the verification of quality criteria as indicated in the Standards. This should be made clear in the section on sampling and analysis. It was decided that the amended tables contained in Appendix IX to ALINORM 83/20 should be sub-mitted to the Commission at Step 8 of the Procedure for inclusion in the Codex Sampling Plans for Prepackaged Foods to replace the tables contained in the Sampling Plans.

140. The Committee also discussed a working paper (CX/PFV 84/7) prepared by the Secretariat. The paper drew attention to the classification adopted by the Commission for four types of sampling procedures. Only one type of sampling plans (for commodity defects) had been developed so far by Codex (CAC/RM 42-1969). Some other practical sampling procedures also existed in a number of Codex standards. The Secretariat also indicated that Codex standards for processed fruits and vegetables were not clear as to what criteria, in addition to the quality criteria specifically referred to in the standard, were actually covered by the Sampling Plans (AQL = 6.5) included in those standards. Editorial revisions of the standards would clarify this matter. The Secretariat papers also suggested that the question of the status of Codex sampling plans included in Codex standards (whether obligatory or advisory) should be clarified. Some parts of the sampling plans (AQL = 6.5) referred to in the sections on "lot acceptance" seemed to be obligatory and subject to acceptance, while perhaps the sample size could be advisory.

141. The Delegation of the United States of America pointed out that the relationship lot size/sample size/acceptance number (N/n/c), included in the tables in the Codex Sampling Plans, were related. Change in the relationship of these parameters would affect the acceptance or rejection of lots. On the other hand increasing the sample size on the basis of the Codex Sampling Plans would be acceptable, as was already foreseen by the concept of two levels of sampling in the Sampling Plans. The Delegation of the United Kingdom was of the opinion that the sections on Methods of Analysis and Sampling in Codex Standards for Processed Fruits and Vegetables should be revised to make it clear as to what criteria were actually covered by the Sampling Plans. In this respect, the approach adopted in the Codex Standards for Quick-Frozen Foods should be taken into consideration. The Delegation of Argentina indicated that, because the working documents on this subject had not been received it was reserving its position until the matter could be studied.

142. The Committee agreed that a number of issues needed to be resolved in connection with sampling plans such as those pointed out above and agreed to recommend that a consultant familiar with Codex work, the Codex Sampling Plans (AQL = 6.5) and the general problem of sampling for compliance should be engaged to study the problems and to ascertain what changes are required to be made to the Codex Standards for Processed Fruits and Vegetables. It was also agreed that the question of whether sampling plans were obligatory or advisory should also be examined. The Codex Committee on Methods of Analysis and Sampling was considered to be the Committee which should consider these matters on the basis of advice from Commodity Committees and possibly on the basis of the paper prepared by the consultant.

143. The Delegation of the United Kingdom was of the opinion that Codex sampling plans should also be developed for products in non-retail packs and products in bulk, in order to clarify, among other things, the size of increments to be taken as part of the sample.

CONSIDERATION OF THE PROPOSED DRAFT CODEX STANDARD FOR HONEY AT STEP 4

144. The Committee had before it document CX/PFV 84/13 containing the draft Codex world-wide standard for honey, comments received at Step 3 in document CX/PFV 84/16, conference room paper 4 provided by Australia and a report of the Working Group set up during the session (see para 26 of this Report). Mr. Erridge

of Canada, Chairman of the Working Group informed the Committee that agreement had been reached on Sections 1 to 3.3.2 of the Draft Standard, but that no agreement could be reached on apparent sucrose content, diastase activity and HMF content. The report of the Working Group is given in Appendix X to this Report. The Committee noted that the Delegation of Argentina had reservations on the moisture content of honey (see para 4, Appendix X).

145. The Committee agreed to discuss the standard for honey in an attempt to reach agreement on the issues which the Working Group had not been able to resolve. Sections 1 to 3.3.2 as proposed by the Working Group (see Appendix X of this Report) were adopted without further discussion. The Delegation of Switzerland indicated that it would have preferred a maximum water content of 30%. The representative of the EEC considered that Bakers Honey should not be excluded from the Proposed Draft Standard because the purpose of the exercise was to develop a minimum world-wide standard, which must encompass all honeys in world trade.

Apparent Sucrose Content

146. The Committee had a full discussion on the apparent sucrose content of honeys and noted that generally honey had an apparent sucrose content (i.e. non-reducing sugar content) of below 5%, but that certain varieties of honey were above that value and that certain other varieties may occasionally have an apparent sucrose content of up to 15%. This was due to natural causes and was not due to the addition of sucrose or other sugars. It was pointed out that honeys contained enzymes which caused not only the break-down of materials in the nectars, etc., but also caused the polymerization of reducing sugars to non-reducing sugars. The proposal was made by the Observer from the EEC that derogations from the maximum limit of 15% might be possible if honeys having higher than the permitted amount of apparent sucrose were labelled with their specific floral designations and if the label bore an indication of the percent apparent sucrose content. The remark was made that 'non-reducing sugar' might be more appropriate, as 'apparent sucrose content' might give the impression of sucrose having been added.

147. In order to make progress and in the interest of narrowing the gap between the diverging points of view, the Committee adopted the wording given in Section 3.3.3 of the Draft Standard (Appendix IX to this Report). The Delegation of Australia indicated that it would be difficult to declare actual apparent sucrose content, as this tended to change during storage due to enzyme action. The Delegation of Switzerland made a reservation concerning Section 3.3.3(c).

Mineral Content

148. The Committee noted the written comments from several Countries suggesting different maximum levels and also the proposal that there should be specific limits for mineral content for honeydew honey and blends of honeydew honey and blossom honey.

Diastase Activity and HMF Content

149. The Committee noted that there were many comments and diverging opinions on this subject. Some Delegations maintained that diastase activity and HMF content were not relevant nutritionally or to the quality of honey. Furthermore, surveys had shown a wide variation in the diastase activity and HMF content of honeys. Other Delegations maintained that these indices were essential for an indication that the honey was a natural product of consistency required by consumers in Europe.

150. Following full discussion the Committee accepted the proposal of Canada to include in the standard provisionally (i.e. in square brackets), Section 3.4 providing for a minimum diastase activity of 3 units on the Gothe scale and a maximum level of 80 mg/kg for HMF, deleting the words "provided the" in relation to HMF. It was agreed that there was a necessity to rediscuss this matter in the light of Government comments.

Contaminants

151. The Committee did not accept a proposal of Poland to include maximum levels for contaminants such as As, Pb, Cu, Zn and Sn, considering that this was not necessary.

Hygiene

152. It was agreed to add a provision that the product should not contain toxic substances arising from micro-organisms in amounts which may represent a hazard to health.

Section 6 - LABELLING

Section 6.1 - The Name of the Food

153. The Committee recalled that it had deleted from the Standard "manufacturing honey" and agreed, therefore, to amend Section 6.1.1 accordingly. The Committee agreed with the Delegation of The Netherlands that Section 6.1.1 should be mandatory.

154. The Committee noted that the provision in Section 6.1.2 concerning additional designations in accordance with Section 2.3 was of an optional nature. The Secretariat informed the Committee that the revised text of the General Standard for the Labelling of Prepackaged Foods contained a similar general mandatory provision. One Delegation pointed out that "comb" and "chunk" honey were quite different from liquid honey and that the consumer needed to be informed accordingly. The Committee agreed to retain the provision as an optional one, but to require a mandatory declaration of the styles in accordance with Section 2.3.3(b) to (3).

155. The Committee also agreed to make an editorial amendment to Section 6.1.3 by replacing "region" by "area".

156. The Committee deleted Section 6.1.4 referring to "manufacturing honey" since it had decided not to include "manufacturing honey" in the Standard.

157. The Committee noted that a provision concerning the designation according to floral or plant source had been included in Section 2.3.1 "Origin" and agreed that it should be relocated into the labelling section as a new Section 6.1.4.

158. The Committee also agreed to include an appropriate provision concerning the declaration of "apparent sucrose content" for products enumerated in Section 3.3.3(c) which reads as follows (new Section 6.1.5): "Honey complying with Section 3.3.3(c) shall have in close proximity to the common name the declaration of apparent sucrose content as follows: 'apparent sucrose content not more than 15%'."

Section 6.3 - Name and Address

159. The Committee noted the written comment from New Zealand and agreed to amend this section to read: "the name and address of either the".

Section 6.5 - Date Marking and Storage Instructions

160. The Committee noted the written comments from New Zealand, Portugal and South Africa that, in view of the long shelf-life of the product, date marking was not necessary. It also noted proposals from New Zealand (packaging date) and Thailand (manufacturing) on the introduction of other types of date marking. Czechoslovakia was in favour of optional date marking. The United States and Australia had commented that the text in the Codex Guidelines on Date Marking should be used.

161. The Committee decided to include in this Standard the wording for date marking and storage instructions to which it had agreed earlier at the Session. The Committee was of the opinion that Countries which could not agree with the above provisions could indicate their specific requirements when notifying acceptance of the Standard.

Section 6.6 - Lot Identification

162. The Committee was informed that a standard wording for "lot identification" had been developed and approved by the Committees on Food Hygiene and Food Labelling and agreed to include the wording in Section 6.6.

Section 6.7 - Non-Retail (Bulk) Containers

163. The Committee was informed that the Commission, at its 15th Session, had suspended the development of guidelines for the labelling of non-retail containers

until the Codex Committee on Food Labelling had been able to demonstrate the need for such guidelines. The Committee on Food Labelling, at its 17th Session, had been of the opinion that regulations for bulk labelling were of importance and that the matter should be considered at its next Session on the basis of a Secretariat paper on provisions for the labelling of non-retail containers. The Committee agreed to await guidance from the Codex Committee on Labelling.

164. The Observer from the EEC expressed the view that bulk packs which covered also all "baking honeys" were of importance. She stated that all products, including "baking honey" should be covered by the Standard, since "baking honey", at least by EEC regulations, could not be denominated "honey" and such restrictions would create economic difficulties.

Methods of Analysis

165. The Committee noted that the methods of analysis included in the standard were simple methods which were still appropriate and could, therefore, be left in the Standard.

Status of the Standard

166. The Committee decided to advance the Draft World-wide Codex Standard for Honey to the Commission at Step 5 in the Procedure.

CONSIDERATION OF THE PROPOSED DRAFT STANDARD FOR CASHEW KERNELS AT STEP 4

167. The Committee had before it the above Standard as contained in working paper CX/PFV 84/14 (erroneously numbered CX/PFV 84/4) and Government comments thereon in working paper CX/PFV 84/15 (Denmark, Thailand, Federal Republic of Germany, Poland, Jamaica, United Kingdom).

168. The Standard was introduced by the Delegate from Kenya, who informed the Committee that the revised document had been prepared in cooperation with India and the Codex Secretariat, as agreed to by the previous session of this Committee.

169. The Committee agreed to review the standard generally at Step 4 and to incorporate those comments which were of an editorial nature. The Committee also agreed that the comments requiring substantial amendments to the Standard needed to be discussed further. This was not possible at the present Session due to lack of time.

170. The Committee was of the opinion that the text prepared by Kenya took into account the points discussed at Step 4 at the previous Session of this Committee (paras 103-106 of ALINORM 83/20) and that the Secretariat, assisted by Kenya, was in a position to prepare an improved version of the Standard.

Status of the Standard

171. The Committee decided to advance the Draft Standard for Cashew Kernels to Step 5 of the Procedure and to submit the improved text of the Standard to the 16th Session of the Commission for adoption at Step 5. The Draft Standard will be issued as an Addendum to ALINORM 85/20.

172. The Committee agreed to give full consideration to all sections of the Standard at its next Session (see also paras 174 of this Report).

EXTENT OF MANDATORY DETAIL INCLUDED IN CODEX STANDARDS FOR PROCESSED FRUITS AND VEGETABLES

173. The subject was introduced by the Delegation of India which reminded the Committee that India had prepared a document "Quality Requirements of Foods Under Codex" (ALINORM 83/36) for discussion at the 15th Session of the Commission (see ALINORM 83/43) (paras 219 to 226). The Delegation expressed the opinion that such quality criteria as styles, cuts, defects, in some Codex standards, especially those for processed fruits and vegetables and for fish and fishery products, could adversely affect international trade and thus one of the objectives of the Codex Alimentarius, that is of ensuring fair practices in international food trade.

174. The Codex Coordinating Committee for Asia had discussed the matter at its Second Session and had recommended that these "secondary" quality requirements, if considered necessary to Codex standards, should be made optional, subject to mutual agreement between importer and exporter.

175. The Delegation of Switzerland agreed in principle that detailed criteria could cause obstacles to trade and that this was a problem. On the other hand, consumers should be fully informed of the nature of products they were buying. The Delegation pointed out to the Committee that in its Country such details were not part of the national regulations but were regulated by trade agreements.

176. Several other Delegations agreed that many Codex standards were unnecessarily sophisticated, especially with regard to styles and defects tables and that these could cause trade barriers. This matter, it was pointed out, had been raised at the last session of the Codex Committee on General Principles.

177. The Committee noted that there was a large measure of agreement that many standards already published contained criteria which were perhaps over-elaborate in some details; in future, efforts should be directed to the more essential matters of composition, quality, hygiene, food additives and food labelling. This should also be borne in mind when revising existing Codex standards. This would not only reduce trade barriers but would simplify the work of enforcement and control. At the same time it was recognized that many details, for instance, in the labelling sections, were required both by international trade and by the consumer.

178. The Committee recommended that the Codex Committee for Asia should, at its next Session, identify standards which, in its opinion, would benefit from optional clauses and should forward recommendations on this matter to the Secretariat for discussion at the next Session of the Codex Alimentarius Commission.

FUTURE WORK

179. The Committee noted that its future work would include further study of the Draft Standards for Honey and for Cashew Kernels.

180. It also noted an offer by the Delegation of India to revise the Proposed Draft Standards for Canned Mangoes and for Mango Chutney for consideration at the next Session, in collaboration with the Secretariat.

181. Other items suggested for future work were:

- Revision of the Codex Standards for Raisins (and sultanas)
- Revision of drained weight provisions in Codex Standards
- Revision of existing Codex Standards where justified.

182. The Delegation of the United Kingdom drew attention to the problems of enforcement of the drained weight provisions in the Codex standards for Canned Processed Fruits and Vegetables and suggested that these required urgent consideration by this Committee.

DATE AND PLACE OF NEXT MEETING

183. The Committee noted that there was some doubt as to whether a sufficient agenda could be drawn from the present programme of future work and agreed to make no commitment on the date of the next meeting, until the matter had been discussed at the next Session of the Codex Alimentarius Commission.

VALEDICTION

184. The Committee and the Secretariat expressed their appreciation to Mr. W.G. Aldershoff, Delegate of The Netherlands for having contributed significantly to the work of the Committee over the many years. Mr. Aldershoff, who had been associated with the work of the Committee since its inception, indicated that he would retire during 1984 and that he had been pleased to participate in Codex work on the standardization of processed fruits and vegetables.

185. The Committee and the Secretariat also thanked Dr. R.M. Schaffner, Chairman of the Committee, for his efficient and friendly manner in conducting the Sessions of the Committee and expressed the hope to see Dr. Schaffner at a future Session of the Committee.

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ALINORM 85/20
APPENDIX II

DRAFT STANDARD FOR DATES -
MOISTURE CONTENT AND GLUCOSE COATING
(Advanced to Step 8 of the Procedure) 1/

1. SCOPE

This standard applies to commercially prepared whole dates in pitted or unpitted styles packed ready for direct consumption. It does not apply to other forms such as pieces or mashed dates or dates intended for industrial purposes.

2. DESCRIPTION

2.1 Product Definition

Dates are the product prepared from sound fruit of the date tree (*Phoenix dactylifera L.*), which fruit:

- (a) is harvested at the appropriate stage of maturity;
- (b) is sorted and cleaned to remove defective fruit and extraneous material;
- (c) may be pitted and capped;
- (d) may be dried or hydrated to adjust moisture content;
- (e) may be washed and/or pasteurized;
- (f) may be coated by dipping at room temperature in a syrup containing 35% glucose and 5% glycerol or sorbitol; and
- (g) is packaged in suitable containers to assure preservation and protection of the product.

2.2 Varietal Types

Varietal types are classified as:

- (a) Cane sugar varieties (containing mainly sucrose) such as Daglat Nuur (*Deglet Noor*) and Daglat Beidha (*Deglet Beidha*).
- (b) Invert Sugar varieties (containing mainly invert sugar - glucose, and fructose) such as Barhi (Barhee), Saiidi (Saidy), Khadhraawi (Khadrawy), Hallaawi (Halawy), Zahdi (Zahidi), and Sayir (Sayer).

2.3 Styles

Styles may be classified as:

- (a) unpitted; and
- (b) pitted.

2.4 Sub-styles

Sub-styles are as follows:

- (a) Pressed - dates which are compressed into layers using mechanical force.
- (b) Unpressed or Loose - dates which are free-flowing or packaged without mechanical force or compression.
- (c) Clusters - dates with the main bunch stem attached.

2.5 Size Classification (Optional)

Dates may be designated as to size names in accordance with the following charts:

1/ The Draft Standard for Dates was adopted by the 15th Session of the Commission. Sections 2, 4 and 7 have been amended by the CCPFV and is being submitted to the Commission for adoption (see paras 27-37 of this Report).

(a) Unpitted dates

Size	No. of dates in 500 g
Small	more than 100
Medium	80 to 100
Large	less than 80

(b) Pitted dates

Size	No. of dates in 500 g
Small	more than 110
Medium	90 to 110
Large	less than 90

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 Composition

3.1.1 Optional Ingredients

Glucose syrup, sugars, flour, vegetable oils.

3.2 Quality factors

3.2.1 General Requirements

Dates shall be prepared from such fruit and under such practices that the finished product shall possess a characteristic colour and flavour for the variety and type, be of proper stage of ripeness, be free of live insects and insect eggs and mites and meet the following additional requirements:

(a) Moisture content

	<u>Maximum</u>
Cane Sugar varieties	26%
Daglat Nuur	30% (not processed in accordance with 2.1(d), (e)).
Invert Sugar varieties	30%

(b) Size (minimum)

Unpitted Dates	- 4.75 grammes
Pitted Dates	- 4.0 grammes

(c) Pits (Stones) (in Pitted Style) - Not more than two pits or 4 pieces of pit per 100 dates.

(d) Mineral impurities - Not more than 1 g/kg

3.2.2 Definition of Defects

(a) Blemishes - Scars, discoloration, sunburn, dark spots, blacknose or similar abnormalities in surface appearance affecting an aggregate area greater than that of a circle 7 mm in diameter.

(b) Damaged - (Unpitted dates only) - dates affected by mashing and/or tearing of the flesh exposing the pit or to such an extent that it significantly detracts from the visual appearance of the date.

(c) Unripe Dates - Dates which may be light in weight, light in colour, have shrivelled or little flesh or a decidedly rubbery texture.

(d) Unpollinated Dates - Dates not pollinated as evidenced by thin flesh, immature characteristics and no pit in unpitted dates.

(e) Dirt - Dates having embedded organic or inorganic material similar to dirt or sand in character and affecting an aggregate area greater than that of a circle 3 mm in diameter.

- (f) Insects and mites damage and contamination - Dates damaged by insects or mites or contaminated by the presence of dead insects or mites, fragments of insects or mites or their excreta.
- (g) Scouring - Breakdown of the sugars into alcohol and acetic acid by yeasts and bacteria.
- (h) Mould - Presence of mould filaments visible to the naked eye.
- (i) Decay - Dates that are in a state of decomposition and very objectionable in appearance.

3.2.3 Allowances for Defects

The maximum allowances for the defects defined in 3.1.2 shall be:

- A total of 7% by count of dates with defect (a)
- A total of 6% by count of dates with defects (b), (c) and (d)
- A total of 6% by count of dates with defects (e) and (f)
- A total of 1% by count of dates with defects (g), (h) and (i)

3.3 Lot Acceptance

A lot will be considered as meeting the quality criteria requirements of the standard when:

- (a) there is no evidence of live infestation; and
- (b) the sub-sample, as taken in conformity with sub-section 9.1.2 meets the general requirements of sub-section 3.1.1 and does not exceed the allowances for the respective defects in sub-sections 3.1.2 and 3.1.3, except that, with respect to size requirements, 5% by count (5 dates out of 100) may weigh less than the specified minimum.

4. FOOD ADDITIVES

Maximum Level

- | | | | |
|-----|----------|---|--|
| 4.1 | Glycerol | } | In conformity with the provisions laid down in paragraph 2.1(f) (see also Section 3.1.1) |
| 4.2 | Sorbitol | | |

5. HYGIENE

5.1 It is recommended that the product covered by the provisions of this standard be prepared in accordance with the International Code of Hygienic Practice for Dried Fruits recommended by the Codex Alimentarius Commission (Ref. No. CAC/RCP 3-1969).

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

- (a) shall be free from microorganisms capable of development under normal conditions of storage; and
- (b) shall not contain any substances originating from microorganisms in amounts which may represent a hazard to health.

6. WEIGHTS AND MEASURES

Containers shall be as full as practicable without impairment of quality and shall be consistent with a proper declaration of contents for the product.

7. LABELLING

In addition to sections 1, 2, 4 and 6 of the General Standard for the Labelling of Prepackaged Foods (Ref. CODEX STAN. 1-1981), the following specific provisions apply:

7.1 The Name of the Food

- 7.1.1 The name of the product shall be "Dates" or "Dates coated with Glucose Syrup".
- 7.1.2 The style shall be indicated as "pitted" or "unpitted", as is applicable.
- 7.1.3 The name of the product may include the name of the varietal type, such as "Hallawi", "Saher", "Khadhrawi", "Daglat", "Noor", "Barhee", or others, the sub-style as "pressed" or "unpressed", and the size designation as "small", "medium" or "large".

7.2 List of Ingredients

A complete list of ingredients shall be declared on the label in descending order of proportion in accordance with the provisions of sub-section 3.2(c) of the Codex General Standard for the Labelling of Prepackaged Foods (Ref. CODEX STAN. 1-1981).

7.3 Net Contents

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

7.4 Name and Address

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

7.5 Country of Origin

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

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

7.6 Lot Identification

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

7.7 Date Marking

7.7.1 The "date of minimum durability" (preceded by the words "best before") shall be declared by the day, month and year in uncoded numerical sequence except that for products with a shelf-life of more than three months, the month and year will suffice. The month may be indicated by letters in those countries where such use will not confuse the consumer. In the case of products requiring a declaration of month and year only, and the shelf-life of the product is valid to the end of a given year, the expression "end (stated year)" may be used as an alternative.

7.7.2 In addition to the date of minimum durability, any special conditions for the storage of the food shall be indicated if the validity of the date depends thereon.

7.7.3 Where practicable, storage instructions shall be in close proximity to the date marking.

8. METHODS OF SAMPLING AND ANALYSIS

8.1 Method of Sampling

8.1.1 Gross Sample

Select at random not less than 2 individual packages per each 1,000 kg portion of the lot. From each individual package draw a sample of 300 g and in any case sufficient to obtain a gross sample of not less than 3,000 g. Use the gross sample for checking carefully for live infestation and general cleanliness of the product prior to its examination for compliance with other provisions of the standard.

8.1.2 Sub-samples for Examination and Testing

Mix the gross sample well and take small quantities at random from many different places as follows:

For moisture test	- 500 grammes
For pits (in pitted style)	- 100 dates
For specified defects and size requirements	- 100 dates

8.2 Methods of Analysis

8.2.1 Determination of Moisture Content

8.2.1.1 Codex Defining Method (Type I)

In accordance with the AOAC (1975) Method (Official Methods of Analysis of the AOAC, 1975, 12th Ed., 22.013, Moisture in dried Fruits) (Vacuum Oven Method).

8.2.1.2 Codex Alternative Approved Method (Type 3)

In accordance with the FAO/WHO Codex Alimentarius Method, CAC/RM 50-1974 (FAO/WHO Codex Alimentarius Methods of Analysis for Processed Fruits and Vegetables, Third Series, CAC/RM 50/53-1974, Moisture Determination - Electrical Conductance Method). However, in cases of dispute, the method in 8.2.1.1 will be the defining method.

9. METHOD OF EXAMINATION

9.1 Internal Defects

Examine each date carefully for internal defects using a strong light. If the dates are pitted, open up the flesh so that the internal cavity can be viewed. If the dates are unpitted, slit the date open so as to expose the pit, remove the pit and examine the pit cavity.

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ALINORM 85/20
APPENDIX III

PROPOSED DRAFT AMENDMENT TO CODEX STANDARDS FOR
CANNED PROCESSED FRUITS AND VEGETABLES
REGARDING A GENERAL PROVISION FOR STYLES

A. The Codex Alimentarius Commission at its Thirteenth Session (December 1979), considered the inclusion of a general provision for styles in Codex standards for processed fruits and vegetables. The Commission had agreed at its Eleventh Session, that the question of other styles was not for general and automatic application to all Codex standards but should be considered by Codex Committees on a commodity by commodity basis.

B. The following is the text of the general provision for styles as adopted by the Codex Committee on Processed Fruits and Vegetables for incorporation into Codex standards for processed fruits and vegetables, Except for those standards listed under paragraph C. below.

- (1) For standards which do not prescribe limits for defects:

"Other Styles

Any other presentation of the product shall be permitted provided that the product:

- (a) is sufficiently distinctive from other forms of presentation laid down in this standard;
- (b) meets all other requirements of this standard;
- (c) is adequately described on the label to avoid confusing or misleading the consumer."

- (2) For standards which prescribe limits for defects, amend (b) above to read:

"Meets all relevant requirements of this standard, including requirements relating to limitations on defects, drained weight, and any other requirements in this standard which are applicable to that style in the standard which most closely resembles the style or styles intended to be provided for under this provision."

- (3) When the general provision for "other styles" is included in a standard the following statement shall appear in the labelling section of the standard:

"If the product is produced in accordance with the other styles provision (sub-section), the label shall contain in close

proximity to the name of the product such additional words or phrases that will avoid misleading or confusing the consumer."

C. After commodity by commodity examination the Committee agreed that the general provision for styles is not required in the following standards:

CODEX STAN. 18-1981	.....	Sweet Corn, Canned
CODEX STAN. 40-1981	.....	Fungus "Chanterelle", Fresh
CODEX STAN. 57-1981	.....	Tomato Concentrate, Processed
CODEX STAN. 58-1981	.....	Green Peas, Canned
CODEX STAN. 60-1981	.....	Raspberries, Canned
CODEX STAN. 62-1981	.....	Strawberries, Canned
CODEX STAN. 67-1981	.....	Raisins
CODEX STAN. 78-1981	.....	Fruit Cocktail, Canned
CODEX STAN. 79-1981	.....	Jams (Fruit Preserves) and Jellies
CODEX STAN. 80-1981	.....	Citrus Marmalade
CODEX STAN. 81-1981	.....	Mature Processed Peas, Canned
CODEX STAN. 99-1981	.....	Tropical Fruit Salad, Canned
CODEX STAN. 131-1981	.....	Pistachio Nuts, Unshelled

ALINORM 85/20
APPENDIX IV

PROPOSED DRAFT CONSEQUENTIAL AMENDMENTS TO CODEX
STANDARDS FOR CANNED PROCESSED FRUITS AND VEGETABLES
REGARDING PACKING MEDIA, COMPOSITION AND LABELLING

1. The Codex Committee on Processed Fruits and Vegetables, at its Fifteenth Session (March 1980) agreed to inform the Commission that the Committee would, at its next Session (16th) consider standards for canned fruits already adopted by the Commission for possible amendments to incorporate, where practicable, the same provisions for packing media (composition and labelling) as contained in the Standard for Canned Apricots (ALINORM 81/20, paras 139-145 and Appendix V).
2. The Codex Committee on Processed Fruits and Vegetables, at its Sixteenth Session, agreed that all Codex canned fruit standards which include edible packing media provisions should be aligned with the relevant packing media provisions (composition and labelling) of the Codex Standards for Canned Apricots.
3. The Committee at its Seventeenth Session reviewed, in the light of Government comments, the Brix levels (ALINORM 83/20, Appendix III, Annex II, Table I) for all canned fruits proposed for consequential changes to format regarding packing media to conform them to the Canned Apricot format. The Committee adopted the amendments to packing media and the Brix values as shown below for the standards listed in Table I:

2 ESSENTIAL COMPOSITION AND QUALITY FACTORS

2.1 Packing Media

2.1.1 Where a packing medium is used, it may consist of:

2.1.1.1 Water - in which water is the sole packing medium;

- 2.1.1.2 Fruit Juice^{1/} - in which [apricot juice]^{2/} or any other compatible fruit juice is the sole packing medium;
- 2.1.1.3 Mixed Fruit Juices^{1/} - in which two or more compatible fruit juices which may include [apricot] juice, are combined to form the packing medium;
- 2.1.1.4 Water and Fruit Juice(s) - in which water and [apricot] juice, or water and any other single fruit juice or water and two or more fruit juices are combined in any proportion to form the packing medium.

2.1.2 Any of the foregoing packing media may have one or more of the following nutritive sweeteners as defined by the Codex Alimentarius Commission added: sucrose, invert sugar syrup, dextrose, dried glucose syrup, glucose syrup, fructose, fructose syrup, honey.

2.1.3 Dry nutritive sweeteners namely sucrose, invert sugar, dextrose and dried glucose syrup, may be added to solid packs without added liquid but with such slight amounts of steam, water or natural juice as occur in the normal canning of the product.

2.1.4 Classification of packing media when nutritive sweeteners are added

2.1.4.1 When nutritive sweeteners are added to fruit juice(s) the packing media shall be not less than [16^o] Brix and shall be classified on the basis of the cut-out strength as follows:

- Lightly sweetened fruit juice(s) - Not less than [16^o] Brix
- Heavily sweetened fruit juice(s) - Not less than [21^o] Brix

2.1.4.2 When nutritive sweeteners are added to water or water and fruit juice(s) or water and nectar the liquid media shall be classified on the basis of the cut-out strength as follows:

- | | | |
|----------------------------|--|---------------------------------------|
| Slightly sweetened water) | | Not less than [10 ^o] Brix |
| Water slightly sweetened) | | but less than [16 ^o] Brix |
| Extra light syrup) | | |
| Light syrup - | | Not less than [16 ^o] Brix |
| | | but less than [21 ^o] Brix |
| Heavy syrup - | | Not less than [21 ^o] Brix |
| | | but less than [25 ^o] Brix |
| Extra heavy syrup - | | Not less than [25 ^o] Brix |

2.1.4.3 When nutritive sweeteners are added to water and fruit juice(s) and the minimum fruit juice content of the packing medium is not less than 40% m/m, the packing medium may be classified as a nectar provided the cut-out strength is not less than [16^o] Brix.

2.1.4.4 The cut-out strength for any packing medium shall be determined on average, but no container may have a Brix value lower than that of the next category below.

7. LABELLING

In addition to Sections 1,2,4 and 6 of the General Standard for the Labelling of Prepackaged Foods (Ref. CODEX STAN. 1-1981), and subject to endorsement by the Codex Committee on Food Labelling, the following specific provisions apply:

7.1 The Name of the Food

- 7.1.1
- 7.1.2
- 7.1.3

1/ Fruit juice may be pulpy, turbid or clear as stated in the Codex standard for the juice involved.

2/ Each square bracket to be replaced by the appropriate product name, or number from Table 1, Annex II, attached.

APPENDIX IV (contd.)

7.1.4 The packing medium shall be declared as part of the name, or in close proximity to the name, as appropriate.

7.1.4.1 When the packing medium is composed of water, the packing medium shall be declared as:

"In water" or "Packed in water".

7.1.4.2 When the packing medium is composed of a single fruit juice, the packing medium shall be declared as:

"In juice" or "In[apricot] juice"

where [apricot] juice has been used; or

"In (name of fruit) juice"

for all other fruit juices.

7.1.4.3 When the packing medium is composed of two or more fruit juices, which may include[apricot] juice, it shall be declared as:

"In (name of fruits) juice"; or

"In fruit juices", or

"In mixed fruit juices".

7.1.4.4 When nutritive sweeteners are added to[apricot] juice, the packing medium shall be declared as:

"Lightly sweetened juice"; or

"Lightly sweetened[apricot] juice"; or

"Heavily sweetened juice"; or

"Heavily sweetened[apricot] juice"

as may be appropriate.

7.1.4.5 When nutritive sweeteners are added to a single fruit juice (not including[apricot] juice) or mixtures of two or more fruit juices (which may include[apricot] juice), the packing medium shall be declared as:

"Lightly sweetened (name of fruit) juice"; or

"Lightly sweetened (name of fruits) juices"; or

"Lightly sweetened fruit juices" or

"Lightly sweetened mixed fruit juices"

as may be appropriate, or the same for

"Heavily sweetened" juice(s).

7.1.4.6 When nutritive sweeteners are added to water, or water and a single fruit juice (including[apricot] juice) or water and two or more fruit juices, the packing medium shall be declared as:

"Slightly sweetened water"

"Water slightly sweetened"

"Extra light syrup"

"Light syrup"

"Heavy syrup"

"Extra Heavy syrup".

7.1.4.7 When nutritive sweeteners, water and fruit juice(s) are combined to form a nectar, the packing medium shall be declared as:

"In nectar" or "In[apricot] nectar"

where the juice component is solely apricot, or

"In (name of fruit) nectar"

"In (name of fruits) nectar"

"In fruit nectars", or

"In mixed fruit nectars"

for all other cases as may be appropriate.

APPENDIX IV (contd.)

- 7.1.4.8 When the packing medium contains water and [apricot] juice or water and one or more fruit juice(s), the packing medium shall be designated to indicate the preponderance of water or such fruit juice as may be the case, for example:
- "[Apricot] juice and water"
 - "Water and [apricot] juice"
 - "(name of fruit(s) juice(s)) and water"; or
 - "Water and (name of fruit(s) juice(s))".
- 7.1.4.9 The fruit juice component of any packing medium shall not be declared in the name of the food if it comprises less than 10% m/m of the total packing medium but it shall be declared in the list of ingredients.
- 7.1.4.10 When the name of the fruits in a mixed fruit juice or mixed fruit nectar is listed individually in the packing medium, they shall be declared in descending order of proportion.
- 7.1.4.11 When the packing medium contains no added sweetening agents, the term "no added sugar" or other words of similar import may be used in association with, or in close proximity to the name of the food.

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TABLE 1
CODEX STANDARDS FOR CANNED FRUITS
CLASSIFICATION OF PACKING MEDIA WHEN SUGARS ARE ADDED

Codex Standard	Minimum Cut-out Strength for Sweetened Juice in Brix	Lightly Sweetened Juice in Brix	Heavily Sweetened Juice in Brix	Basic Syrup Strengths		Optional Packing Media			
				Light Syrup in Brix	Heavy Syrup in Brix	Extra Light Syrup in Brix but	Extra Heavy Syrup in Brix or		
CANNED PEACHES (CODEX STAN.14-1981)	14°	14° 18°	18°	14° 18°	18° 22°	10° 14°	22°	22°	
CANNED GRAPEFRUIT (CODEX STAN.15-1981)	N/A	N/A	N/A	16° 18°	18°	12° 16°	-	N/A	
CANNED PINEAPPLE (CODEX STAN.42-1981)	N/A	N/A	N/A	14°	18° 22°	10° -	-	22°	
CANNED PLUMS (CODEX STAN.59-1981)	15°	15° 19°	19°	15° 19°	19° 25°	11° 15°	25°	25°	
CANNED RASPBERRIES (CODEX STAN.60-1981)	15°	15° 20°	20°	15° 20°	20° 26°	11° 15°	26°	26°	
CANNED PEARS (CODEX STAN.61-1981)	14°	14° 18°	18°	14° 18°	18° 22°	10° 14°	22°	22°	
CANNED STRAWBERRIES (CODEX STAN.62-1981)	14°	14° 18°	18°	14° 18°	18° 22°	10° 14°	22°	22°	
CANNED MANDARIN ORANGES (CODEX STAN.68-1981)	14°	14° 18°	18°	14° 18°	18° 22°	10° 14°	22°	22°	
CANNED FRUIT COCKTAIL (CODEX STAN.78-1981)	N/A	14° 18°	18°	14° 18°	18° 22°	10° 14°	-	22°	
CANNED APRICOTS (App.VIII,ALINORM 78/20)	16°	16° 21°	21°	16° 21°	21° 25°	10° 16°	-	25°	
CANNED TROPICAL FRUIT SALAD (App.III,ALINORM 78/20)	14°	14° 18°	18°	14° 18°	18° 22°	10° 14°	-	22°	

Symbols : * - not less than
 < - less than
 > - more than
 N/A - not applicable

ALINORM 85/20
APPENDIX V

PROPOSED DRAFT AMENDMENT TO CODEX STANDARDS
FOR PROCESSED FRUITS AND VEGETABLES
REGARDING DATE MARKING

The following text is proposed for inclusion in all Codex Standards for Processed Fruits and Vegetables:

DATE MARKING AND STORAGE INSTRUCTIONS

- (a) The "date of minimum durability" (preceded by the words "best before") shall be declared by the day, month and year in uncoded numerical sequence except that for products with a shelf-life of more than three months, but not more than 18 months, the month and year will suffice and for those with a shelf-life of 18 months or more, the year will suffice. The month may be indicated by letter in those countries where such use will not confuse the consumer. In the case of products requiring a declaration of month and year or year only, and the shelf-life of the product is valid to the end of a given year, the expression "end (stated year)" may be used as an alternative.
 - (b) In addition to the date of minimum durability, any special conditions for the storage of the food shall be indicated if the validity of the date depends thereon.
 - (c) Where practicable, storage instructions shall be in close proximity to the date marking.
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APPENDIX VI

REPORT OF THE WORKING GROUP ON CLASSIFICATION
AND REVIEW OF CODEX METHODS OF ANALYSIS FOR
PROCESSED FRUITS AND VEGETABLES

1. This Working Group was established to review the comments received on Document APPENDIX VI to ALINORM 83/20 and the reconsideration of the methods of analysis adopted by the Codex Committee on Processed Fruits and Vegetables at its 16th Session on the basis of the Codex General Principles for the Establishment of Codex Methods of Analysis and Sampling.

2. The Working Group consisted of participants from France, United Kingdom, United States and the European Economic Community (EEC). Dr. William Horwitz, USA, served as Chairman with the assistance of Dr. L.G. Ladomery of the FAO Secretariat. The list of participants is as follows:

<u>Name</u>	<u>Country/Organization</u>
William Horwitz (Chairman)	United States of America
L.G. Ladomery (Secretary)	FAO
Miss Olga Demine	EEC
Mme M.G. Duhau	France
Ken Dale	United Kingdom
Lowrie Beacham	United States of America
Melvin Horst	United States of America
Leo Kauffman	United States of America

<u>Name</u>	<u>Country/Organization</u>
Frank Mosebar	United States of America
Howard Schutz	United States of America

3. The Working Group had available the combined Government comments (CX/PFV 84/6) submitted by France and the United Kingdom and other information. It discussed the methods, associated standards and the proposed revisions in the light of the comments. It handled the comments on the basis of the following general principles:

- 3.1 In those cases where a Codex method is referenced to a Codex publication, no further references are necessary.
- 3.2 In those cases where a reference to a Codex method published by Codex *in extenso* does not exist and a specific reference is included, reference to other methods, e.g., ISO or AOAC, may be added where the methods are identical.
- 3.3 Methods for measuring "soluble solids" which consist chiefly of sugars, should be designated in a consistent manner. In anticipation of eventually utilizing SI units, the current units (Brix) should be supplemented with the units recommended by the International Union for Pure and Applied Chemistry (IUPAC) in brackets.
- 3.4 Procedures utilizing visual inspection techniques are recommended for deletion from the Methods of Analysis section. Such techniques should be retained, but placed in the appropriate section where they are required (see Annex 2 to Appendix VI of this Report).
- 3.5 A type I (defining) and a Type II (reference) method cannot exist for the same specification in a Codex standard. Since the electrical conductivity method for moisture in raisins is the method preferred by the Commodity Committee, the calibrating vacuum oven method, AOAC (1980), 13th Ed. 22.0131, is considered as supporting the conductance method, not the standard. This point also applies to dates and dried apricots.

4. The Secretariat may wish to take these principles into consideration as new standards are prepared and as old standards are revised or reprinted.

5. The proposed revisions to the Methods of Analysis sections are attached as Annex 1 to Appendix VI of this Report.

APPENDIX VI
ANNEX 1

PROPOSED DRAFT AMENDMENTS TO
METHODS OF ANALYSIS INCLUDED IN CODEX STANDARDS
FOR PROCESSED FRUITS AND VEGETABLES

(at Step 5 of the Procedure) 1/

<u>Parameter to be measured</u>	<u>Method</u>	<u>Type of method</u>
(1) Drained weight	Codex method 1 (CAC/RM 36-1970)	I
(2) Drained weight	Codex method 2 (CAC/RM 37-1970)	I
(3) Drained weight, washed	Codex method (CAC/RM 44-1972)	I
(4) Alcohol-insoluble solids	Codex method (CAC/RM 47-1972)	I
(5) Mineral impurities (sand)	Codex method (CAC/RM 49-1972)	I

1/ With the recommendation that Steps 6 and 7 be omitted.

APPENDIX VI
ANNEX I (contd.)

Parameter to be measured	Methods	Type of Method
(6) Mineral impurities in raisins (sand test)	Codex method (CAC/RM 51-1974)	I
(7) Mineral oil	Codex method (CAC/RM 52-1974)	II <u>1/</u>
(8) Moisture in raisins	Codex method (CAC/RM 50-1974)	I <u>2/3/</u>
(9) Moisture in pistachio nuts	AOAC (1980), 13th Ed. 27.005	II <u>4/</u>
(10) Proper fill (in lieu of drained weight)	Codex method (CAC/RM 45-1972)	I
(11) Water capacity of containers	Codex method (CAC/RM 46-1972)	I
(12) Calcium	Codex method (CAC/RM 38-1970)	II <u>5/</u>
(13) Sorbitol	Codex method (CAC/RM 53-1974)	II <u>6/</u>
(14) Mould count	AOAC (1980) 13th Ed. 44.096	I <u>7/</u>
(15) Soluble solids by means of refractometer expressed as degrees Brix (mass units as expressed by IUPAC)	AOAC (1980) 13th Ed. 31.011 Solids by means of refractometer or ISO 2173 Determination of Soluble Solids content - refractometer method	I <u>8/</u>
(16) Salt (NaCl)	AOAC (1980) 13th Ed. 32.025-32.030	II <u>9/</u>
(17) Mineral impurities	AOAC (1980) 13th Ed. 44.091	I <u>10/</u>
(18) Salt content of brine (table olives and pickled cucumbers)	AOAC (1980) 13th Ed. 32.025-32.030	II <u>11/</u>
(19) Acidity of brine (Table Olives)	Codex method CODEX STAN.66-1981 section 9.1.3	II
(20) pH of brine (Table Olives)	Codex method CODEX STAN 66-1981 section 9.1.4	II
(21) Sulphur dioxide	AOAC (1980) 13th Ed. 20.109-20.111	II
(22) Soluble solids (in jams and jellies)	AOAC (1980) 13th Ed. 22.024 and 31.011	I
(23) Total solids content (mature processed peas)	AOAC (1980) 13th Ed. 32.010	I
(24) Total acidity	AOAC (1980) 13th Ed. 22.060	II
(25) Volume fill (by displacement) of pickled cucumbers	Codex methods CODEX STAN 115-1981 Section 9.2.6	I

- 1/ Revise the Codex method to include the updated reference, AOAC (1980), 13th Ed. 14.117-14.120.
- 2/ This method is not applicable to pistachio nuts as is implied in CX/PFV 82/4(6) APPENDIX I, item (8).
- 3/ The electrical conductance method must be calibrated in terms of a Type II (reference) method. The AOAC vacuum oven method, 22.013 should be added to CAC/RM 50-1974 for this purpose.
- 4/ If needed, the AOAC vacuum oven method for moisture in nuts is proposed.
- 5/ Revise the Codex method to include the updated reference, AOAC (1980) 13th Ed. 32.020-32.022.
- 6/ Revise the Codex method to include the updated reference, AOAC (1980) 13th Ed. 22.080-22.082; 20.151-22.156.
- 7/ Delete the internal cross reference as unnecessary.
- 8/ Designate both methods as "Solids by means of refractometer expressed in degrees Brix". Delete the unnecessary internal cross references.
- 9/ Delete the reference to the same method in lesser detail.
- 10/ References to two methods were given; the method specifically referring to frozen fruits and vegetables is given.
- 11/ References to two methods were given; the general method applicable to all foods is given.

METHODS OF EXAMINATION TO BE INCLUDED IN A SECTION
OTHER THAN THE SECTION ON METHODS OF ANALYSIS

Parameter to be measured	Reference
(1) Tough string test	Codex method: CAC/RM 39-1970
(2) Type of peas	Codex method: CAC/RM 48-1972
(3) Proportion of fruit (in canned fruit cocktail and tropical fruit salad)	Codex method: CODEX STAN 78-1981, Sections 8.1.1.1 and 8.2 Codex method: CODEX STAN 99-1981, Sections 8.1.2.1 and 8.2
(4) Closeness of pistachio nuts	CODEX STAN 131-1981 Section 8 and Annex I
(5) Emptiness and unripeness of pistachio nuts	
(6) Pest and disease damage of pistachio nuts	
(7) Size classification of pistachio nuts	

DRAFT STANDARD FOR CANNED PALMITO

(Advanced to Step 8)

SCOPE

This standard covers the product known as canned palmito (in some countries, canned hearts of palm), and is prepared with palmito as the predominant ingredient and which may include small quantities of vegetables as a garnish or seasoning and also spices and aromatic herbs. The product is prepared from fresh palmito. The word palmito, hereafter used in this document, means canned palmito or canned hearts of palm.

1. Description

1.1 Product Definition

Canned palmito is the product:

- (a) prepared from the edible portion of sound palms, which includes their terminal vital part (apical gemmation) and the upper and lower regions corresponding respectively to the growing soft leaves (characterized by a heterogeneous structure) and palm stipe consisting of the soft tissues of the stipe (characterized by a homogeneous structure which may be involved by one or two soft leaves) conforming with the characteristics of the species *Euterpe edulis* (Mart.) or *Euterpe oleracea* (Mart.) or any other genera and/or species appropriate for human consumption, from which the fibrous parts have been removed;
- (b) packed with water or other suitable medium, seasonings and other ingredients appropriate to the product; and

APPENDIX VII (contd.)

- (c) processed (acidified and heat pasteurized or heat sterilized) in an appropriate manner, before and/or after being sealed in a container to prevent spoilage.

1.2 Flavour types

With respect to flavour, canned palmito of distinct genera or species may be designated as:

- (a) Normal
- (b) Bitter

1.3 Styles

- (a) Pieces - consisting of the terminal vital part of the palm and its upper region, cut transversely into pieces not less than 80 mm, and not more than 120 mm in length.
- (b) Slices - consisting of the terminal vital part of the palm and its upper region, cut transversely into slices not less than 15 mm and not more than 35 mm in thickness.
- (c) Palm Stipe-cuts - consisting of the lower region of the terminal vital part of the palm, cut into pieces which may or may not be symmetrical and uniform in size and shape.

1.3.1 Other Styles

Any other presentation of the product shall be permitted provided that it:

- (a) is sufficiently distinctive from other forms of presentation laid down in this standard;
- (b) meets all other requirements of this standard;
- (c) is adequately described on the label to avoid confusing or misleading the consumer.

1.3.2 Allowances for Styles

The length and thickness requirements for the styles "pieces" and "slices" respectively listed in 1.3(a) and (b), will be considered to have been met when:

1. The predominant length or thickness of the units in each container of the sample (n) falls within the designated style classification; and
2. The length or thickness of the units is reasonably uniform.
"Reasonably uniform" based on the units of each container, signifies:
 - (a) Pieces - All the units from the container are within ± 10 mm of the predominant length, provided they are in accordance with 1.3(a).
 - (b) Slices - All the units from the container are within ± 10 mm of the predominant thickness, provided they are in accordance with 1.3(b).

1.3.2.1 Any container that exceeds the allowances in the foregoing paragraph 1.3.2 will be considered as "defective" for its style designation.

1.3.2.2 A lot will be considered as meeting the criteria for style designation when the number of defectives as defined in paragraph 1.3.2.1 does not exceed the acceptance number (c) of the appropriate sampling plan (AQL-6.5) in the Sampling Plans for Pre-packaged Foods (CAC/RM 42-1969).

1.4 Designation in accordance with Size

Pieces may be designated according to diameter in the following manner:

Single sizes

"Small"	-	above 15 mm and up to 25 mm inclusive
"Medium"	-	above 25 mm and up to 35 mm inclusive
"Large"	-	above 35 mm and up to 50 mm inclusive
"Extra large"	-	above 50 mm

Blend of sizes or

Assorted sizes - a mixture of two or more single sizes

1.4.1 Definition of "diameter"

The diameter of a "piece" is the maximum diameter at the thickest part of the unit, measured at right angles to the longitudinal axis of the unit.

1.4.2 Compliance with "single size" designations

(a) When the product is declared, presented or offered as conforming to the single size designation in 1.4 other than "Blend of sizes" or "Assorted sizes" the sample unit shall conform to the diameter specified for each single size, with the following allowance:

30% by count of all the units in the container may belong to adjacent size designations.

(b) Any container that exceeds the allowance in the foregoing sub-paragraph (a) will be considered as "defective" for its Size Classification.

(c) A lot will be considered as meeting the criteria for a Single Size Designation, when the number of defectives as defined in sub-paragraph (b) does not exceed the acceptance number (c) of the appropriate sampling plan (AQL-6.5) in the Sampling Plans for Prepackaged Foods.

2. ESSENTIAL COMPOSITION AND QUALITY FACTORS

2.1 Basic Ingredients

Palmito and packing medium appropriate to the product, plus other ingredients (see 2.1.1).

2.1.1 Other Permitted Ingredients

(a) Salt (sodium chloride), sucrose, invert sugar syrup, dextrose, glucose syrup, dried glucose syrup, vinegar.

(b) Aromatic herbs and spices: stock or juice of fruits and vegetables (lemon, onion, carrot, etc.) and aromatic herbs, garnishes composed of one or more vegetables (onions, carrots, pieces of green or red peppers, or mixtures of both, etc.), up to a maximum of 10% of the total drained vegetable ingredients.

(c) Butter, margarine, or other edible animal or vegetable fats or oils. If butter or margarine is added, this must amount to not less than 3% of the final product (total contents).

(d) Starches - natural (native) maximum level 0.5% m/m, physically or enzymatically modified are only added when butter, margarine or other edible animal or vegetable fats or oils have also been added.

2.2 Quality Criteria

2.2.1 Colour

The drained palmito shall have the normal colour characteristics for canned palmito containing permitted ingredients and additives shall be considered to be of a characteristic colour when there is no abnormal discolouration considering the different ingredients.

2.2.2 Packing Medium

The packing medium, when liquid, may be slightly turbid or moderately turbid, when affected by other ingredients, and only a small amount of sediment of bits of palmito may be present.

2.2.3 Flavour

Canned palmito shall have a normal flavour for the different "Flavour Types" (1.2) and a normal odour, free from flavours or odours foreign to the product. Canned palmito containing special ingredients shall have the flavour characteristics imparted by the palmito and the other substances added.

2.2.4 Texture

The product shall be reasonably free from units that are tough or excessively fibrous, and/or excessively soft.

2.2.5 Defects and Allowances

Limitations

(a) Poor texture

(Tough or excessively fibrous and/or excessively soft parts, which seriously affect the edibility of the unit)

10% m/m of the drained weight of the sample(n) 1/

(b) Mineral impurities

(Such as sand, grit, or earthy material)

0.1% m/m

(c) Blemished units

(Includes discolouration, scars or scratches, skin breaks or other similar imperfections which seriously affect the appearance of the unit)

15%, by count, of all the units in the sample(n) 1/

(d) Mechanical damage

(Means broken or split units or detached pieces which seriously affect the appearance of the unit)

10%, by count, of all the units in the sample(n) 1/

(e) Off colour

(Those units that vary markedly from the typical colour of the product)

10%, by count, of all the units in the sample(n) 1/

(f) Physiological factors

(Those units of the styles "Whole" (1.3(a)) and "Slices" (1.3(b)) that include growing parts of the palm stipe)

10%, by count, of all the units in the sample(n) 1/

Total limitation of all defects in (c), (d), (e), (f) for the following styles:

Pieces - 20% by count of all the units in the sample(n)

Slices - 25% by count of all the units in the sample(n)

Total limitation of defects in (e) for the style:

Palm stipe-

cuts - 10% by count of all the units in the sample(n)

2.2.6 Classification of "defectives"

A sample(n) that fails to meet one or more of the applicable quality requirements, as set out in sub-sections 2.2.1 through 2.2.5 shall be considered as "defective".

2.2.7 Acceptance

A lot will be considered as meeting the applicable quality requirements referred to in sub-section 2.2.6 when the requirements which are based on the total sample are complied with.

1/ Based on the total of units from all containers in the sample(n) of the appropriate sampling plan in the Sampling Plans for Prepackaged Foods (CAC/RM 42-1969).

3. FOOD ADDITIVES 1/

The following provisions with respect to food additives are subject to endorsement by the Codex Committee on Food Additives, as indicated:

	<u>Maximum Level in the Final Product</u>
3.1 Stannous chloride, only for palmito in glass or in fully enamel-lined (lacquered) cans	25 mg/kg
3.2 L-ascorbic acid	300 mg/kg
3.3 <u>Acidifying agents</u>	
3.3.1 Citric acid	to maintain the pH at a level not above 4.6 if the product is heat pasteurized or limited by GMP if the product is heat sterilized.
3.3.2 L(+) tartaric acid	
3.3.3 dl-lactic acid	
3.4 <u>Vegetable gums, pectins, alginates</u> - To be used only when butter, margarine or other animal or vegetable fats or oils are added as ingredients, as follows:	
<u>Maximum Level</u>	- 1 % m/m singly or in combination.
3.4.1 <u>Vegetable gums</u>	
3.4.1.1 Gum Arabic (Acacia)	
3.4.1.2 Guar Gum	
3.4.1.3 Carrageenan	
3.4.2 Pectin (amidated or non-amidated)	
3.4.3 Alginates (Ca, K, Na, NH ₄)	
3.5 <u>Modified starches</u>	
To be used as indicated in Section 3.5.	
Maximum level - 0.5% m/m singly or in combination.	
3.5.1 Acid-treated starches	
3.5.2 Alkali-treated starches	
3.5.3 Bleached starches	
3.5.4 Distarch phosphate (phosphated)	
3.5.5 Distarch phosphate (sodium trimetaphosphate treated)	
3.5.6 Monostarch phosphate	
3.5.7 Distarch phosphate, acetylated	
3.5.8 Distarch glycerol, acetylated	
3.5.9 Distarch adipate, acetylated	
3.6 <u>Processing Aids</u>	
3.6.1 Sodium metabisulphite - 20 mg/kg, as SO ₂ .	
4. <u>CONTAMINANTS</u>	
4.1 Tin, maximum level 250 mg/kg, calculated as Sn	
4.2 Lead, maximum level 1 mg/kg	

1/ When included in the Codex Alimentarius VOL.II, the 'Carry-over Principle' will also apply to this standard concerning the presence of antioxidants and other additives present in the ingredients.

5. HYGIENE

5.1 It is recommended that the product covered by the provisions of this standard be prepared in accordance with the International Code of Hygienic Practice for Canned Fruit and Vegetable Products recommended by the Codex Alimentarius Commission (Ref. No. CAC/RCP 2-1969) and Codex Code of Hygienic Practice for Low Acids Foods.

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

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

- (a) shall be free from microorganisms capable of development under normal conditions of storage; and
- (b) shall not contain any substances originating from microorganisms in amounts which may present a hazard to health.

5.4 To prevent the growth of *Clostridium botulinum* the product shall have received one of the following treatments:

- (a) a processing treatment sufficient to destroy all spores of *Clostridium botulinum*;
- (b) heat pasteurization where the product has been properly artificially acidified to an equilibrium pH of 4.6 or below.

6. WEIGHTS AND MEASURES

6.1 Fill of Container

6.1.1 Minimum Fill

The container shall be well filled with palmito and the product (including packing medium) shall occupy not less than 90% of the water capacity of the container. The water capacity of the container is the volume of distilled water at 20°C which the sealed container will hold when completely filled.

6.1.2 Classification of "Defective"

A container that fails to meet the requirements for minimum fill (90% container capacity) of 6.1.1 shall be considered "defective".

6.1.3 Acceptance

A lot will be considered as meeting the requirements of 6.1.1 when the number of "defectives" does not exceed the acceptance number (c) of the appropriate sampling plans (AQL-6.5) in the Sampling Plans for Processed Fruits and Vegetables.

6.1.4 Minimum Drained Weight

6.1.4.1 The drained weight of the product shall be not less than the following percentages, calculated on the basis of the mass of distilled water at 20°C which the sealed container will hold when completely filled:

<u>Styles</u>	<u>Percentages</u>	
	<u>1 kg</u> (850 ml)	<u>1/2 kg</u> (425 ml)
Pieces	53	52
Slices	59	59
Palm stipe-cuts	59	59

6.1.4.2 The requirements for minimum drained weight shall be deemed to be complied with when the average drained weight of all containers examined is not less than the minimum required, provided that there is no unreasonable shortage in individual containers.

7. LABELLING

In addition to sections 1,2,4 and 6 of the Recommended International General Standards for the Labelling of Prepackaged Foods (Ref. no. CAC/RS 1-1969), the following specific provisions apply:

7.1 The Name of the Food

The name of the product shall be "Palmito" or "Hearts of Palm" or its equivalent according to the country in which the product is intended to be sold.

7.1.1 The following, as appropriate, shall be included as part of the name or in close proximity to the name:

7.1.1.1 The Style:

"Pieces", "Slice", "Palm stipe-cuts".

7.1.1.2 The Flavour

For flavour type (1.2) only the bitter flavour (1.2(b)) shall be declared on the label as:

"Bitter".

7.1.1.3 A declaration of any special sauce and/or seasoning which characterizes the product, e.g. "with X" or "in X", when appropriate. If the declaration is "with (or "in") Butter Sauce", the fat used shall only be the butter fat.

7.2 List of Ingredients

A complete list of ingredients shall be declared on the label in descending order of proportion in accordance with sub-section 3.2(c) of the General Standard for the Labelling of Prepackaged Foods, except that (a) processing aids in 3.7 need not be declared; and (b) pork fat, lard or beef fat shall always be declared by their specific names. The label shall not present any reference to vitamin C when ascorbic acid is used as antioxidant and/or acidulant.

7.3 Net Contents

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

7.4 Name and address

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

7.5 Country of origin

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

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

7.6 Lot Identification

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

7.7 Other declarations

7.7.1 Size representation - in Style Pieces

7.7.1.1 If the pieces comply with the applicable requirements of this standard, they may be declared as "Small", "Medium", "Large", "Extra Large", "Blend of Sizes", or "Assorted Sizes", as appropriate.

7.7.1.2 The number of units present in the container may be shown by a range of approximate count, e.g: "approximately _____ to _____ pieces".

7.8 Date Marking and Storage Instructions

- (a) The "date of minimum durability" (preceded by the words "best before") shall be declared by the day, month and year in un-coded numerical sequence except that for products with a shelf-life of more than three months, but not more than 18 months, the month and year will suffice and for those with a shelf-life of 18 months or more, the year will suffice.

The month may be indicated by letter in those countries where such use will not confuse the consumer. In the case of products requiring a declaration of month and year, or year only, and the shelf-life of the product is valid to the end of a given year, the expression "end (stated year)" may be used as an alternative.

- (b) In addition to the date of minimum durability, any special conditions for the storage of the food shall be indicated if the validity of the date depends thereon.
- (c) Where practicable, storage instructions shall be in close proximity to the date marking.

8. METHODS OF ANALYSIS AND SAMPLING

8.1 Method of Sampling

Sampling shall be in accordance with the FAO/WHO Codex Alimentarius Sampling Plans for Prepackaged Foods (AQL-6.5) (Ref. CAC/RM 42-1969).

8.2 Determination of Drained Weight (Type I Method)

According to the FAO/WHO Codex Alimentarius method (FAO/WHO Codex Alimentarius Methods of Analysis for Processed Fruits and Vegetables, CAC/RM 36/39-1970, Determination of Drained Weight - Method 1). Results are expressed as % m/m calculated on the basis of the mass of distilled water at 20°C which the sealed container will hold when completely filled.

8.3 Determination of Water Capacity of Containers (Type I Method)

According to the FAO/WHO Codex Alimentarius method (FAO/WHO Codex Alimentarius Methods of Analysis for Processed Fruits and Vegetables, Second Series, Determination of Water Capacity of Containers, CAC/RM 46-1972). Results are expressed as volume of distilled water that the container holds.

8.4 Determination of Mineral Impurities

According to ISO 762 - 1982 (E) (Fruit and Vegetable Products - Determination of Mineral Impurities Content).

PROPOSED DRAFT STANDARD FOR CANNED CHESTNUTS AND
CANNED CHESTNUT PUREE

(Advanced to Step 8)

1. DESCRIPTION

1.1 Product Definition

1.1.1 Canned chestnuts is the product (a) prepared from fresh, sound, mature chestnuts of varieties conforming to the characteristics of the species *Castanea crenata* Sieb. et Zucc. (Japanese chestnut) or *Castanea sativa* Miller (European chestnut) which shall be shelled and may be pellicled or unpellicled;^{1/} (b) packed with or without water which may or may not contain sugars, seasonings and other ingredients appropriate to the product; and (c) processed by heat in an appropriate manner, before or after being hermetically sealed in a container, so as to prevent spoilage.

1.1.2 Canned chestnut puree is the product; (a) pureed by sieving, or other mechanical means in order to obtain a fruit pulp from chestnuts, as defined in subsection 1.1.1(a); (b) packed with or without sugars and other ingredients appropriate to the product; and (c) heat processed by a procedure as defined in subsection 1.1.1(c).

1.2 Styles

1.2.1 Canned Chestnuts

Canned chestnuts may be packed in the following styles:

- (a) Whole - whole chestnut which are pellicled or unpellicled and/or trimmed into a practical tetrahedron.
- (b) Brokens ^{2/} - small pieces which may not be uniform in size and/or shape.

1.2.2 Canned Chestnut Puree

- (a) Sweetened - with added sugars listed in 2.1(b); not less than 12 percent total soluble solids (12° Brix).
- (b) Unsweetened - without added sugars; not less than 10 percent total soluble solids (10° Brix).

1.2.3 Other Styles

Any other presentation of the product shall be permitted provided that it: (a) is sufficiently distinctive from other forms of presentation laid down in this standard; (b) meets all other requirements of this standard; and (c) is adequately described on the label to avoid confusing or misleading the consumer.

2. ESSENTIAL COMPOSITION AND QUALITY FACTORS

2.1 Packing Media

Where a packing medium is used, it may consist of:

- (a) Water - in which water is the sole packing medium;
- (b) Water which may have one or more of the following nutritive sweeteners as defined by the Codex Alimentarius Commission added: sucrose, invert sugar syrup, dextrose, dried glucose syrup, glucose syrup, fructose, fructose syrup, honey.

2.2 Classification of packing media when nutritive sweeteners are added

2.2.1 When nutritive sweeteners added to water, the liquid media shall be classified on the basis of the cut-out strength as follows:

^{1/} In the case of unpellicled chestnuts, they should be previously processed by alcohol so as to remove the astringency of the pellicles.

^{2/} The term "Brokens" is translated into French as "Brisure".

Slightly sweetened water	)	Not less than 10° Brix
Water slightly sweetened	)	but less than 14° Brix
Extra light syrup)	
Light syrup	-	Not less than 14° Brix but less than 18° Brix
Heavy syrup	-	Not less than 18° Brix but less than 22° Brix
Extra heavy syrup	-	Not less than 22° Brix

2.2.2 The cut-out strength for any packing medium shall be determined on average, but no container may have a Brix value lower than that of the next category below.

2.3 Other Ingredients

Canned chestnut puree may contain "sugars", as listed in sub-section 2.1 (b), they shall amount to not more than 2 percent of total net contents. Canned Chestnuts and Chestnut Puree may contain "salt" (sodium chloride) in an amount not exceeding 1 percent of total net contents.

2.4 Quality Criteria

2.4.1 Colour

When colour is not added, canned chestnuts or canned chestnut puree shall have a normal colour characteristic of the varieties used. Browning and discoloration shall be regarded as defects.

2.4.2 Flavour

Canned chestnuts or canned chestnut puree shall have a normal flavour and odour free from flavours and odours foreign to the products.

2.4.3 Texture

2.4.3.1 Canned chestnuts shall have a reasonably uniform thick texture and shall not be excessively firm nor unreasonably soft.

2.4.3.2 Canned chestnut puree shall have a uniform consistency and particle size.

2.4.4 Uniformity of Size

Whole - in 95 percent, by count, of units that are most uniform in size, the weight of the largest unit shall be no more than twice the weight of the smallest unit.

2.4.5 Defects and Allowances

The product shall be substantially free from defects such as harmless plant material, shell, pellicle (in pellicled styles), blemished units, split and broken units (in whole styles) and discoloured units. Slight syneresis in canned chestnut puree should not be regarded as a defect. Certain common defects shall not be present in amounts greater than the following limitations:

Not more than 14 percent by mass of chestnuts on the net drained weight; and

Not more than 20 percent of chestnuts which are not whole on the net drained weight for the style "whole".

2.4.6 Classification of "Defectives"

A container that fails to meet one or more of the applicable quality requirements as set out in sub-section 2.4.1 through 2.4.5 (except extraneous plant material which is based on an average of the entire sample) shall be considered a "defective".

2.4.7 Lot Acceptance

A lot will be considered as meeting the applicable quality requirements referred to in sub-section 2.4.5 when the number of "defectives" as defined in sub-section 2.4.6 does not exceed the acceptance number(c) of the appropriate sampling plan (AQL-6.5) in the FAO/WHO Codex Alimentarius Sampling Plans for Prepackaged Foods (Ref. No. CAC/RM 42-1969).

	<u>Endorsement</u>	<u>Maximum Level in the final product</u>
3. <u>FOOD ADDITIVES</u>		
3.1 <u>Chelating Agent</u>		
3.1.1 Sodium polyphosphate	EP <u>1</u> /	Limited by Good Manufacturing Practice
3.2 <u>Firming Agent</u>		
3.2.1 Aluminium potassium sulphate	EP <u>2</u> /	Limited by Good Manufacturing Practice
3.3 <u>Antioxidants</u>		
3.3.1 L-Ascorbic acid	E)	300 mg/kg expressed as ascorbic acid, singly or in combination
3.3.2 Sodium ascorbate	E)	
3.4 <u>Acidifying Agents</u>		
3.4.1 Citric acid	E)	Limited by Good Manufacturing Practice
3.4.2 Malic acid	E)	
3.4.3 L-Tartaric acid	EP <u>1</u> /	10 g/kg
3.5 <u>Bleaching Agent</u>		
3.5.1 Sulphur dioxide (not authorized in puree)	E	30 mg/kg, calculated as SO ₂
3.6 <u>Natural Colouring Agents</u>		
3.6.1 Turmeric (CI 75300)	EP)	Limited by Good Manufacturing Practice
3.6.2 Crocin (CI 75100)	) EP <u>2</u> /)	
3.6.3 Carthamus Yellow (CI 75140)))	
3.7 <u>Flavours</u>		
3.7.1 Extract of Vanilla	TE)	Limited by Good Manufacturing Practice
3.7.2 Vanillin	E)	
3.8 <u>Thickening Agents</u>		
3.8.1 Pectin	) )	10 g/kg, singly or in combination
3.8.2 Amidated Pectin	) E)	
4. <u>CONTAMINANTS</u>		
4.1 Tin	TE	250 mg/kg, calculated as Sn
4.2 Lead	EP	1 mg/kg, calculated as Pb
5. <u>HYGIENE</u>		
5.1 It is recommended that the product covered by the provision of this standard be prepared in accordance with the International Code of Hygienic Practice for Canned Fruit and Vegetable Products (Ref. CAC/RCP 2-1969) and the International Code of Hygienic Practice for Low-acid and Acidified Low Acid Canned Food.		
5.2 To the extent possible in good manufacturing practice the product shall be free from objectionable matter.		
5.3 When tested by appropriate methods of sampling and examination, the product:		
(a) shall be free from microorganisms capable of development under normal conditions of storage; and		
(b) shall not contain any substances originating from microorganisms in amounts which may represent a hazard to health.		

1/ Need maximum level once ADI exists.

2/ Not evaluated by JECFA.

EP - Endorsement Postponed.

E - Endorsed.

TE - Temporarily Endorsed.

APPENDIX VIII (contd.)

6. WEIGHTS AND MEASURES

6.1 Fill of Container

6.1.1 Minimum Fill

The container shall be well filled with chestnuts or chestnut puree and the product (including packing medium) shall occupy not less than 90 percent of the water capacity of the container. The water capacity of the container is the volume of distilled water at 20°C which the sealed container will hold when completely filled.

6.1.2 Classification of "Defectives"

A container that fails to meet the requirement for minimum fill (90 percent container capacity) of sub-section 6.1.1 shall be considered a "defective".

6.1.3 Lot Acceptance

A lot will be considered as meeting the requirement of sub-section 6.1.1 when the number of "defectives", as defined in sub-section 6.1.2, does not exceed the acceptance number (c) of the appropriate sampling plan in the FAO/WHO Codex Alimentarius Sampling Plans for Prepackaged Foods (1969) (AQL-6.5) (Ref. CAC/RM 42-1969).

6.1.4 Minimum Drained Weight

6.1.4.1 The drained weight of the product shall be not less than the following percentages, calculated on the basis of the weight of distilled water at 20°C which the sealed container will hold when completely filled:

Not less than 300 ml of water capacity of the container	----- 60%
Less than 300 ml of water capacity of the container	----- 55%

6.1.4.2 The requirements for minimum drained weight shall be deemed to be complied with when the average drained weight of all containers examined is not less than the minimum required, provided that there is no unreasonable shortage in individual containers.

7. LABELLING

In addition to Section 1, 2, 4 and 6 of the Codex Standard for the Labelling of Prepackaged Foods (Ref. CODEX STAN. 1-1981), the following specific provisions apply:

7.1 The Name of the Food

7.1.1 The name of the product shall be "chestnuts" if it meets the definition in section 1.1.1 or "chestnut puree" if it meets the definition in section 1.1.2.

7.1.2 The style, as appropriate, shall be declared as a part of the name or in close proximity to the name:

"Whole"
"Brokens"
"Sweetened"
"Unsweetened" } in the case of chestnut puree only

If the product is produced in accordance with the other styles provision in sub-section 1.2.3, the label shall contain in close proximity to the name of the product such additional words or phrases that will avoid misleading or confusing the consumer.

7.1.3 The term "unpellicled" shall be declared as appropriate, as part of the name or in close proximity to the name.

7.1.4 The packing medium shall be declared as part of the name or in close proximity to the name:

7.1.4.1 When the packing medium is composed of water, the packing medium shall be declared as:

"In water" or "Packed in water".

7.1.4.2 When nutritive sweeteners are added to water, the packing medium shall be declared as:

"Slightly sweetened water"
"Water slightly sweetened"
"Extra light syrup"
"Light syrup"
"Heavy syrup"
"Extra Heavy syrup".

7.1.4.3 When the packing medium contains no added sweetening agents, the term "no added sugar" or other words of similar import may be used in association with, or in close proximity to the name of the food.

7.2 List of Ingredients

A complete list of ingredients shall be declared on the label in descending order of proportion in accordance with sub-section 3.2(b) and (c) of the Codex Standard for the Labelling of Prepackaged Foods, except that water need not be declared.

7.3 Net Contents

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

7.4 Name and Address

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

7.5 Country of Origin

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

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

7.6 Date Marking and Storage Instructions

7.6.1 The "date of minimum durability" (preceded by the words "best before") shall be declared by the day, month and year in uncoded numerical sequence except that for products with a shelf-life of more than 3 months, but not more than 18 months, the month and year will suffice, and for those with a shelf-life of 18 months or more, the year will suffice. The month may be indicated by letter in those countries where such use will not confuse the consumer. In the case of products requiring a declaration of month and year, or year only, and the shelf-life of the product is valid to the end of a given year, the expression "end (stated year)" may be used as an alternative.

7.6.2 In addition to the date of minimum durability any special conditions for the storage of the food shall be indicated if the validity of the date depends thereon.

7.6.3 Where practicable, storage instructions shall be in close proximity to the date marking.

7.7 Lot Identification

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

8. METHOD OF ANALYSIS AND SAMPLING

APPENDIX VIII (contd.)

8.1 Method of Sampling

Sampling shall be in accordance with the FAO/WHO Codex Alimentarius Sampling Plans for Prepackaged Foods (1969) (AQL-6.5) (Ref. CAC/RM 42-1969).

8.2 Determination of Drained Weight (Type I Method)

In accordance with the FAO/WHO Codex Alimentarius Methods CAC/RM 36-1970 (FAO/WHO Codex Alimentarius Methods of Analysis for Prepackaged Fruits and Vegetables - First Series, CAC/RM 36/39-1970), Determination of Drained Weight - Method I.

Results are expressed as % m/m calculated on the basis of distilled water at 20°C which the sealed container will hold when completely filled.

8.3 Syrup Measurements (Refractometric Method) (Type I Method)

In accordance with the AOAC (1970) method (Official Methods of Analysis of the AOAC, 1975, 31.011: (Solids) by Means of Refractometer (4), Official, Final Action (and 52.008 and 52.009). Results are expressed as % m/m of sucrose ("degrees Brix"), with correction for temperature to the equivalent at 20°C.

8.4 Determination of Water Capacity of Containers (Type I Method)

In accordance with the FAO/WHO Codex Alimentarius Method CAC/RM 46-1972 (FAO/WHO Codex Alimentarius Methods of Analysis for Processed Fruits and Vegetables - Second Series, CAC/RM 44/49-1972), Determination of Water Capacity of Containers. Results are expressed as volume of distilled water that the container holds.

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PROPOSED DRAFT INTERNATIONAL STANDARD FOR HONEY

(Advanced to Step 5 of the Procedure)

1. SCOPE

1.1 This standard applies to all honeys produced by honey bees and covers all styles of honey presentation which are offered for direct consumption.

1.2 The standard also covers honey which is packed in non-retail (bulk) containers and is intended for re-packing into retail packs.

2. DESCRIPTION

2.1 Definition of Honey

Honey is the natural sweet substance produced by honey bees from the nectar of blossoms or from secretions of or on living parts of plants, which they collect, transform and combine with specific substances of their own, store and leave in the honey comb to ripen or mature.

2.2 Description

Honey consists essentially of different sugars, predominantly glucose and fructose. The colour of honey varies from nearly colourless to dark brown. The consistency can be fluid, viscous or partly to entirely crystallized. The flavour and aroma vary, but usually derive from the plant origin.

2.3 Subsidiary Definitions and Designations

2.3.1 Origin

2.3.1.1 Blossom Honey or Nectar Honey is the honey which comes from nectaries of flowers.

2.3.1.2 Honeydew Honey is the honey which comes mainly from secretions of or on living parts of plants. Its colour varies from very light brown or greenish to dark brown.

2.3.2 Methods of Processing

2.3.2.1 Extracted Honey is honey obtained by centrifuging decapped broodless combs.

2.3.2.2 Pressed Honey is honey obtained by pressing broodless combs with or without the application of moderate heat.

2.3.2.3 Drained Honey is honey obtained by draining decapped broodless combs.

2.3.3 Styles - Honey which meets all the compositional and quality criteria of Section 3 of this standard may be presented as follows:

- (a) Honey which is honey in liquid or crystalline state or a mixture of the two;
- (b) Comb Honey which is honey stored by bees in the cells of freshly built broodless combs and which is sold in sealed whole combs or sections of such combs;
- (c) Chunk Honey which is honey containing one or more pieces of comb honey;
- (d) Crystallized or Granulated Honey which is honey that has solidified as a result of glucose crystallization;
- (e) Creamed (or Whipped or Set) Honey which is finely granulated honey that has been whipped and blended into a smooth consistency.

3. Essential Composition and Quality Factors

3.1 Honey shall not have any objectionable flavour, aroma, or taint absorbed from foreign matter during its processing and storage.

APPENDIX IX (contd.)

3.2 Honey shall not be heated to such an extent that its essential composition and quality is impaired.

3.3 Apparent reducing sugar content, calculated as invert sugar:

- (a) Blossom honey - not less than 65 percent
- (b) Honeydew honey - not less than 60 percent
- (c) Blends of honeydew honey and blossom honey - not less than 60 percent
- (d) Red Bell (*Calothamnus sanguineus*)- not less than 60 percent
- (e) Menzies Banksia (*Banksia menziesii*) - not less than 60 percent
- (f) Grand Banksia (*Banksia grandis*) - not less than 60 percent
- (g) Blackboy (*Xanthorrhoea preissii*) - not less than 53 percent

3.4 Moisture Content

- (a) Except for honeys listed below - not more than 21 percent
- (b) Heather honey (*Calluna*) - not more than 23 percent

3.5 Apparent Sucrose Content

- (a) Honeys not listed below - not more than 5 percent
- (b) Honeydew honey, blends of honeydew honey and blossom honey, Rubina Lavender, Citrus, Alfalfa, Sweet Clover, Red Gum (*Eucalyptus camaldulensis*), Acacia, Leatherwood (*Eucryphia lucinda*), Menzies Banksia (*Banksia menziesii*) - not more than 10 percent
- (c) Red Bell (*Calothamnus sanguineus*)- not more than 15 percent
White stringybark (*Eucalyptus scabra*), Grand Banksia (*Banksia grandis*), Blackboy (*Xanthorrhoea preissii*) when labelled as such.

3.6 Water insoluble solids content:

- (a) For honeys other than pressed honey - not more than 0.1 percent
- (b) Pressed honey - not more than 0.5 percent

3.7 Mineral Content (ash) - not more than 1.0 percent

3.8 Acidity - not more than 40 milli-equivalents acid per 1000 grams

3.9 Diastase Activity

Determined after processing and blending diastase figure on Gothe scale: - not less than 3

3.10 Hydroxymethylfurfural Content - not more than 80 mg/kg

4. FOOD ADDITIVES

4.1 None permitted.

5. HYGIENE

5.1 It is recommended that the product covered by the provisions of this standard be prepared in accordance with the appropriate sections of the General Principles of Food Hygiene recommended by the Codex Alimentarius Commission (Ref. No. CAC/RCP 1-1969, Rev.1).

5.2 Honey should be free from visible mould and as far as practicable, be free from inorganic or organic matters foreign to its composition, such as, insects, insect debris, brood or grains of sand, when the honey appears in retail trade or is used in any product for human consumption.

5.3 Honey shall not contain toxic substances arising from microorganisms in an amount which may constitute a hazard to health.

6. LABELLING

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

6.1 The name of the Food

6.1.1 Subject to the provisions of 6.1.4 products conforming to the standard shall be designated "honey".

6.1.2 No honey may be designated by any of the designations in section 2.3 unless it conforms to the appropriate description contained therein. The Styles in 2.3.3 (b), (c), (d) and (e) shall be declared.

6.1.3 Honey may be designated by the name of the geographical or topographical region if the honey was produced exclusively within the area referred to in the designation.

6.1.4 Honey may be designated according to floral or plant source if it comes wholly or mainly from that particular source and has the organoleptic, physico-chemical and microscopic properties corresponding with that origin.

6.1.5 Honey complying with Section 3.5(c) shall have in close proximity to the common name the declaration of apparent sucrose content, as "apparent sucrose content not more than 15 percent".

6.2 Net Contents

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

6.3 Name and Address

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

6.4 Country of Origin

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

6.5 Date Marking and Storage Instructions

(a) The "date of minimum durability" (preceded by the words "best before") shall be declared by the day, month and year in uncoded numerical sequence except that for products with a shelf-life of more than 3 months, but not more than 18 months, the month and year will suffice, and for those with a shelf-life of 18 months or more, the year will suffice. The month may be indicated by letter in those countries where such use will not confuse the consumer. In the case of products requiring a declaration of month and year, or year only, and the shelf-life of the product is valid to the end of a given year, the expression "end (stated year)" may be used as an alternative.

(b) In addition to the date of minimum durability, any special conditions for the storage of the food shall be indicated if the validity of the date depends thereon.

(c) Where practicable, storage instructions shall be in close proximity to the date marking.

APPENDIX IX (contd.)

6.6 Lot Identification

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

6.7 Non-retail (Bulk) Containers

(To be developed).

7.

METHODS OF ANALYSIS AND SAMPLING

7.1 Determination of reducing sugar content

7.1.1 Principles of the method

The method is a modification of the Lane and Eynon (1923) procedure involving the reduction of Soxhlet's modification of Fehling's solution by titration at boiling point against a solution of reducing sugars in honey using methylene blue as an internal indicator. The maximum accuracy for this type of determination is attained by ensuring that the reduction of the Fehling's solution during the standardization step and in the determination of the reducing sugars in the honey solution are carried out at constant volume. A preliminary titration is, therefore, essential to determine the volume of water to be added before the determinations are carried out to satisfy this requirement.

7.1.2 Reagents

7.1.2.1 Soxhlet's modification of Fehling's solution

Solution A: Dissolve 69.28g copper sulphate pentahydrate ($\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$; MW = 249.71) with distilled water to 1 litre. Keep one day before titration.

Solution B: Dissolve 346g sodium potassium tartrate ($\text{C}_4\text{H}_4\text{K Na O}_6 \cdot 4\text{H}_2\text{O}$; MW = 282.23) and 100g sodium hydroxide (NaOH) with distilled water to 1 litre. Filter through prepared asbestos.

7.1.2.2 Standard invert sugar solution (10g/l.aq.)

Weigh accurately 9.5g pure sucrose, add 5 ml hydrochloric acid (ca. 36.5 percent w/w pure HCl) and dilute with water to about 100 ml, store this acidified solution for several days at room temperature (ca. 7 days at 12° to 15°C, or 3 days at 20° to 25°C), and then dilute to 1 litre. (N.B. Acidified 1.0 percent invert sugar remains stable for several months). Neutralize a suitable volume of this solution with 1N sodium hydroxide solution (40g/l) immediately before use and dilute to the required concentration (2g/l) for the standardization.

7.1.2.3 Methylene blue solution

Dissolve 2g in distilled water and dilute to 1 litre.

7.1.2.4 Alumina cream

Prepare cold saturated solution of alum ($\text{K}_2\text{SO}_4 \cdot \text{Al}_2(\text{SO}_4)_3 \cdot 24\text{H}_2\text{O}$) in water. Add ammonium hydroxide with constant stirring until solution is alkaline to litmus, let precipitate settle and wash by decantation with water until wash-water gives only slight test for sulfate with barium chloride solution. Pour off excess water and store residual cream in stoppered bottle.

7.1.3 Sampling

7.1.3.1 Liquid or strained honey

If sample is free from granulation, mix thoroughly by stirring or shaking; if granulated, place closed container in water-bath without submerging, and heat 30 min. at 60°C; then if necessary heat at 65°C until liquefied. Occasional shaking is essential. Mix thoroughly and cool rapidly as soon as sample liquefies. Do not heat honey intended for Hydroxymethylfurfural or diastatic determination. If foreign matter, such as wax, sticks, bees, particles of comb, etc., is present, heat sample to 40°C in water-bath and strain through cheesecloth in hot-water-funnel before sampling.

7.1.3.2 Comb honey

Cut across top of comb, if sealed, and separate completely from comb by straining through a sieve the meshes of which are made by so weaving wire as to form square opening of 0.500 mm by 0.500 mm.^{1, 2} When portions of comb or wax pass through sieve, heat sample as in 7.1.3.1 and strain through cheesecloth. If honey is granulated in comb, heat until wax is liquefied; stir, cool and remove wax.

¹ Ref. ISO Recommendation R 665

² Such sieve could be replaced by U.S. sieve with No. 40 Standard screen (size of opening 0.420 mm)

7.1.4 Procedure

7.1.4.1 Preparation of test sample – First Procedure

(applicable to honeys which may contain sediment)

a) Transfer an accurately weighed sample of approximately 25g (W_1) from the homogenized honey to 100 ml volumetric flask, add 5 ml alumina cream (6.1.2.4) dilute to volume with water at 20°C and filter.

b) Dilute 10 ml of this solution to 500 ml with distilled water (*diluted honey solution*).

OR

7.1.4.2 Preparation of test sample – Second Procedure

a) Weigh accurately a representative quantity of about 2g (W_2) of the homogeneous honey sample, dissolve in distilled water and dilute to 200 ml in a calibrated flask (*honey solution*).

b) Dilute 50 ml of the honey solution to 100 ml using distilled water (*diluted honey solution*).

7.1.4.3 Standardization of the modified Fehling's solution

Standardize the modified Fehling's solution A so that exactly 5 ml (pipette), when mixed with approximately 5 ml of Fehling's solution B, will react completely with 0.050g invert sugar added as 25 ml dilute invert sugar solution (2g/l).

7.1.4.4 Preliminary titration

The total volume of the added reactants at the completion of the reduction titration must be 35 ml. This is made up by the addition of a suitable volume of water before the titration commences. Since the compositional criteria of the honey standard specify that there should be more than 60 percent reducing sugars (calculated as invert sugar) a preliminary titration is necessary to establish the volume of water to be added to a given sample to ensure the reduction is carried out at constant volume. This volume of water to be added is calculated by subtracting the volume of diluted honey solution consumed in the preliminary titration (x ml.) from 25 ml.

Pipette 5 ml Fehling's solution A into a 250-ml Erlenmeyer flask and add approximately 5 ml Fehling's solution B. Add 7 ml distilled water, a little powdered pumice or other suitable antibumping agent, followed by about 15 ml *diluted honey solution* from a burette. Heat the cold mixture to boiling over a wire gauze, and maintain moderate ebullition for 2 min. Add 1 ml 0.2 percent aqueous methylene blue solution whilst still boiling and complete the titration within a total boiling time of 3 minutes, by repeated small additions of diluted honey solution until the indicator is decolourized. It is the colour of the supernatant liquid that must be observed. Note the total volume of diluted honey solution used (x ml).

7.1.4.5 Determination

Calculate the amount of added water necessary to bring the total volume of the reactants at the completion of the titration to 35 ml by subtracting the preliminary titration (x ml) from 25 ml.

Pipette 5 ml Fehling's solution A into a 250 ml Erlenmeyer flask and add approximately 5 ml Fehling's solution B.

Add (25- x) ml distilled water, a little powdered pumice or other suitable antibumping agent and, from a burette, all but 1.5 ml of the diluted honey solution volume determined in the preliminary titration. Heat the cold mixture to boiling over a wire gauze and maintain moderate ebullition for 2 min. Add 1.0 ml 0.2 percent methylene blue solution whilst still boiling and complete the titration within a total boiling time of 3 min. by repeated small additions of diluted honey solution until the indicator is decolourized. Note the total volume of diluted honey solution (y ml). Duplicate titrations should agree within 0.1 ml.

7.1.5 Calculation and expression of results

Where the First Procedure (6.1.4.1) has been used:

$$C = \frac{W_1}{V_1} \times \frac{1000}{V_2}$$

Where the Second Procedure (6.1.4.2) has been used:

$$C = \frac{2}{W_2} \times \frac{1000}{V_2}$$

Where C = g invert sugar per 100g honey

W_1 = weight (g) of honey sample taken according to sub-section 6.1.4.1

W_2 = weight (g) of honey sample taken according to sub-section 6.1.4.2

V_1 = volume (ml) of diluted honey solution consumed in the determination carried out according to the First Procedure (6.1.4.1)

and V_2 = volume (ml) of diluted honey solution consumed in the determination carried out according to the Second Procedure (6.1.4.2)

7.1.6 Notes on the procedure

It is essential to the accuracy and repeatability of the determination that the volume of water necessary to bring the reactant mixture to a total volume of 35 ml be determined for each individual sample; the following table gives typical volumes which may be encountered at the preliminary titration stage for the incremental contents of invert sugar shown, assuming the test sample (6.1.4.1) weighs about 25g or test sample (6.1.4.2) weighs about 2g.

Invert sugar content %	Volume of distilled water to be added ml
60	8.3
65	9.6
70	10.7
75	11.6

7.2 Determination of apparent sucrose content

7.2.1 Principle of the method

Based on the Walker (1917) inversion method.

7.2.2 Reagents

7.2.2.1 *Soxhlet modification of Fehling's solution* (6.1.2.1)

7.2.2.2 *Standard invert sugar solution* (6.1.2.2)

7.2.2.3 *Hydrochloric acid* (6.34 N aqueous)

7.2.2.4 *Sodium hydroxide solution* (5 N aqueous)

7.2.2.5 *Methylene blue solution* 2g/1 litre (6.1.2.3)

7.2.3 Sampling

The honey is prepared for sampling as in 6.1.3

7.2.4 Procedure

7.2.4.1 Preparation of test sample

Prepare the honey sample as in 6.1.4.1(a). Dilute 10 ml of this solution to 250 ml with distilled water: *honey solution* (for sucrose determination) OR prepare the *honey solution* as in 6.1.4.2(a).

7.2.4.2 Hydrolysis of the test sample

The *honey solution* (50 ml) is placed in a 100-ml graduated flask, together with 25 ml distilled water; heat the test sample to 65°C over a boiling water-bath. The flask is then removed from the water-bath and 10 ml of 6.34 N hydrochloric acid added. The solution is allowed to cool naturally for 15 minutes, and then brought to 20°C and neutralizing with 5 N sodium hydroxide, using litmus paper as indicator, cooled again, and the volume adjusted to 100 ml (*diluted honey solution*).

7.2.4.3 Titration

As in 6.1.4.4 and 6.1.4.5

7.2.5 Calculation and expression of results

Calculate percent invert sugar (g invert sugar per 100 g honey) after inversion using the appropriate formula as for percent invert sugar before inversion in 6.1.5

Apparent sucrose content = (Invert sugar content after inversion minus invert sugar content before inversion) X 0.95

The result is expressed as g apparent sucrose/100 g honey

7.3 Determination of moisture content

7.3.1 Principle of method

Based on the refractometric method of Chataway (1932), revised by Wedmore (1955).

7.3.2 Apparatus

Refractometer

7.3.3 Sampling

The honey is prepared for sampling as in 6.1.3

7.3.4 Procedure

7.3.4.1 Determination of the refractive index

Determine the refractive index of the test sample using a refractometer at a constant temperature near 20°C. Convert the reading to moisture content (percent m/m) using the table given below. If the determination is made at a temperature other than 20°C, convert the reading to standard temperature of 20°C, according to the *temperature corrections* quoted. The method used is to be noted in the test report.

TABLE FOR THE ESTIMATION OF MOISTURE CONTENT

Refractive Index (20°C)	Moisture Content (percent)	Refractive Index (20°C)	Moisture Content (percent)	Refractive Index (20°C)	Moisture Content (percent)
1.5044	13.0	1.4935	17.2	1.4830	21.4
1.5038	13.2	1.4930	17.4	1.4825	21.8
1.5033	13.4	1.4925	17.6	1.4820	21.8
1.5028	13.6	1.4920	17.8	1.4815	22.0
1.5023	13.8	1.4915	18.0	1.4810	22.2
1.5018	14.0	1.4910	18.2	1.4805	22.4
1.5012	14.2	1.4905	18.4	1.4800	22.6
1.5007	14.4	1.4900	18.6	1.4795	22.8
1.5002	14.6	1.4895	18.8	1.4790	23.0
1.4997	14.8	1.4890	19.0	1.4785	23.2
1.4992	15.0	1.4885	19.2	1.4780	23.4
1.4987	15.2	1.4880	19.4	1.4775	23.6
1.4982	15.4	1.4875	19.6	1.4770	23.8
1.4976	15.6	1.4870	19.8	1.4765	24.0
1.4971	15.8	1.4865	20.0	1.4760	24.2
1.4966	16.0	1.4860	20.2	1.4755	24.4
1.4961	16.2	1.4855	20.4	1.4750	24.6
1.4956	16.4	1.4850	20.6	1.4745	24.8
1.4951	16.6	1.4845	20.8	1.4740	25.0
1.4948	16.8	1.4840	21.0		
1.4940	17.0	1.4835	21.2		

7.3.4.2 Temperature corrections – Refractive Index:

Temperatures above 20°C – Add 0.00023 per °C
Temperatures below 20°C – Subtract 0.00023 per °C

7.4 Gravimetric determination of water-insoluble solids content

7.4.1 Sampling

The honey is prepared for sampling as in 6.1.3

7.4.2 Procedure

7.4.2.1 Preparation of test sample

Honey (20g) is weighed to the nearest centigram (10 mg) and dissolved in a suitable quantity of distilled water at 80°C and mixed well.

7.4.2.2 Gravimetric determination

The test sample is filtered through a previously dried and weighed fine sintered glass crucible (pore size 15-40 microns) and washed thoroughly with hot water (80°C) until free from sugars (Mohr test). The crucible is dried for one hour at 135°C, cooled and weighed to 0.1 mg.

7.4.3 Expression of results

The result is expressed as percent water-insoluble solids (m/m).

7.5 Determination of mineral content (ash)

7.5.1 Sampling

Honey is prepared for sampling as in 6.1.3

7.5.2 Procedure

7.5.2.1 Ignition of the honey

Honey (5-10g) is weighed accurately into an ignited and pre-weighed platinum or silica dish and gently heated in a muffle furnace until the sample is black and dry and there is no danger of loss by foaming and overflowing. An infra-red lamp may also be used to char the sample before inserting into the furnace. If necessary, a few drops of olive oil may be added to prevent frothing. The sample is then ignited at 600°C to constant weight. The sample is cooled before weighing.

7.5.3 Expression of results

The result is expressed as percent ash (m/m).

7.6 Determination of acidity

7.6.1 Sampling

The honey is prepared for sampling as in 6.1.3

7.6.2 Reagents

7.6.2.1 Sodium hydroxide 0.1N (carbonate-free)

7.6.2.2 Phenolphthalein indicator 1 percent (m/v) in ethanol, neutralized.

7.6.2.3 Distilled water made carbon dioxide free by boiling and subsequent cooling.

7.6.3 Procedure

7.6.3.1 Preparation of test sample

Honey (10.0g) is weighed accurately and dissolved in 75 ml distilled water (6.6.2.3).

7.6.3.2 Titration

The test sample is titrated against carbonate-free 0.1N sodium hydroxide solution using 4-5 drops of neutralized phenolphthalein indicator. The end-point colour should persist for 10 sec. For darkly coloured samples, a smaller weight should be taken. As an alternative, a pH meter may be used and the sample titrated to pH 8.3.

7.6.4 Calculation and expression of results

The result is expressed as millival (milliequivalents) acid/kg honey and is calculated as follows:

$$\text{Acidity} = 10v$$

where v = the number of ml 0.1N NaOH used in the neutralization of 10g honey.

7.7 Determination of diastase activity

7.7.1. Principle of the method

Based on the method of Schade *et al.* (1958) modified by White *et al.* (1959) and Hadorn (1961).

7.7.2 Reagents

7.7.2.1 Iodine stock solution:

Dissolve 8.8g of iodine analytical grade, in 30-40 ml water containing 22g potassium iodine, analytical grade, and dilute to 1 litre with water.

7.7.2.2 Iodine solution 0.0007 N:

Dissolve 20g potassium iodine, analytical grade, in 30-40 ml water in a 500-ml volumetric flask. Add 5.0 ml iodine stock solution and make up to volume. Make up a fresh solution every second day.

7.7.2.3. Acetate buffer - pH 5.3(1.59 M):

Dissolve 87g sodium acetate, $3H_2O$ in 400 ml water, add about 10.5 ml glacial acetic acid in a little water and make up to 500 ml. Adjust the pH to 5.3 with sodium acetate or acetic acid as necessary, using a pH meter.

7.7.2.4 Sodium chloride solution 0.5 M:

Dissolve 14.5g sodium chloride, analytical grade, in boiled-out distilled water and make up to 500 ml. The keeping time is limited by mould growth.

7.7.2.5 Starch solution:

(a) Preparation of soluble starch

In a conical flask immersed in a water-bath and fitted with a reflux condenser, boil 20 g of potato starch for one hour in the presence of a mixture of 100 ml of 95 percent ethanol and 7 ml of 1 N hydrochloric acid. Cool, filter through a filtering crucible (pore size 90 - 150 microns) and wash with water until the wash-water ceases to give any chloride reaction. Drain thoroughly and dry the starch in air at 35°C. The soluble starch must be stored in a well stoppered flask.

(b) Determination of moisture content of soluble starch

Accurately weigh a quantity of approximately 2 g of soluble starch and spread in a thin layer over the bottom of a weighing bottle (diameter 5 cm). Dry for one and a half hours at 130°C. Allow to cool in a desiccator and re-weigh. The weight loss with respect to 100 g represents the moisture content. The moisture content of such starch should be 7-8% m/m depending on the humidity of the air in which the sample has been dried.

(c) Preparation of starch solution

Use a starch with a blue value between 0.5 - 0.55 using a 1 cm cell, as determined by the method below.

Weigh out that amount of starch which is equivalent to 2.0g anhydrous starch. Mix with 80 ml of water in a 250-ml conical flask. Bring rapidly to the boil, swirling the solution as much as possible, heating over a thick wire gauze preferably with an asbestos centre. Boil gently for 3 min., cover and allow to cool spontaneously to room temperature. Transfer to a 100-ml volumetric flask, place in a water bath at 40°C to attain this temperature and make up to volume at 40°C.

Method for determining blue value of starch

The amount of starch equivalent to 1g anhydrous starch is dissolved by the above method, cooled and 2.5 ml acetate buffer added before making up to 100 ml in a volumetric flask.

To a 100-ml volumetric flask add 75 ml water, 1 ml N hydrochloric acid and 1.5 ml of 0.02 N iodine solution. Then add 0.5 ml of the starch solution and make up to volume with water. Allow to stand for one hour in the dark and read in 1 cm cell using a spectrophotometer at 660 nm against a blank containing all the ingredients except the starch solution. Reading on the absorbance scale = Blue value.

7.7.3 Apparatus

7.7.3.1 Water-bath at 40 ± 0.2°C.

7.7.3.2 Spectrophotometer to read at 660 nm.

7.7.4 Sampling

The honey sample is prepared as in 6.1.3 without any heating

7.7.5 Procedure

7.7.5.1 Preparation of test samples

Honey solution: 10.0g honey is weighed into a 50-ml beaker and 5.0 ml acetate buffer solution is added, together with 20 ml water to dissolve the sample. The sample is completely dissolved by stirring the cold solution. 3.0 ml sodium chloride solution is added to a 50-ml volumetric flask and the dissolved honey sample is transferred to this and the volume adjusted to 50 ml.

N.B. It is essential that the honey should be buffered before coming into contact with sodium chloride.

Standardization of the starch solution

The starch solution is warmed to 40°C and 5 ml pipetted into 10 ml of water at 40°C and mixed well. 1 ml of this solution is pipetted into 10 ml 0.0007 N iodine solution, diluted with 35 ml of water and mixed well. The colour is read at 660 nm against a water blank using a 1 cm cell.

The absorbance should be 0.760 ± 0.020. If necessary the volume of added water is adjusted to obtain the correct absorbance.

7.7.5.2 Absorbance determination

Pipette 10 ml *honey solution* into 50 ml graduated cylinder and place in $40^{\circ} \pm 0.2^{\circ}\text{C}$ water bath with flask containing *starch solution*. After 15 minutes, pipette 5 ml *starch solution* into the *honey solution*, mix, and start stop-watch. At 5 minute intervals remove 1 ml aliquots and add to 10.00 ml 0.0007 *N iodine solution*. Mix and dilute to *standard volume* (see 6.7.5.1). Determine absorbance at 660 nm in spectrophotometer immediately using 1-cm cell. Continue taking 1 ml aliquots at intervals until absorbance of less than 0.235 is reached.

7.7.6 Calculation and expression of results

The absorbance is plotted against time (min) on a rectilinear paper. A straight line is drawn through at least the last three points on the graph to determine the time when the reaction mixture reaches an absorbance of 0.235. Divide 300 by the time in minutes to obtain the diastase number (DN). This number expresses the diastase activity as ml 1 percent starch solution hydrolysed by the enzyme in 1g of honey in 1 h at 40°C . This diastase number corresponds with the Gothe-scale number.

Diastase activity = DN = ml starch solution (1 percent)/g honey/h at 40°C .

7.8 Photometric determination of hydroxymethylfurfural (H.M.F.) content ^{1/}

7.8.1 Principle of the method

Based on the method of Winkler (1955).

7.8.2 Reagents

7.8.2.1 Barbituric acid solution:

Weigh out 500 mg barbituric acid and transfer to a 100-ml graduated flask using 70 ml water. Place in a hot water bath until dissolved, cool and make up to volume.

7.8.2.2 *p*-toluidine solution:

Weigh out 10.0g *p*-toluidine, analytical grade, and dissolve in about 50 ml isopropanol by gentle warming on a water bath. Transfer to a 100-ml graduated flask with isopropanol and add 10 ml glacial acetic acid. Cool and make up to volume with isopropanol. Keep the solution in the dark. Do not use for at least 24 hours.

7.8.2.3 Distilled water (oxygen free)

Nitrogen gas is passed through boiling distilled water. The water is then cooled.

7.8.3 Apparatus

7.8.3.1 Spectrophotometer to read at 550 nm.

^{1/} This method may be replaced at sometime in the future by a spectrophotometric method.

7.8.4 Sampling

The honey is prepared as in 6.1.3 without any heating.

7.8.5 Procedure

7.8.5.1 Preparation of test sample

10 g of *honey sample* is weighed and dissolved without heating in 20 ml oxygen-free distilled water (6.8.2.3). This is transferred to a 50-ml graduated flask and made up to volume (*honey solution*). The sample should be tested after preparation without delay.

7.8.5.2 Photometric determinations

2.0 ml of *honey solution* is pipetted into each of two test tubes and 5.0 ml *p*-toluidine solution is added to each. Into one test tube 1 ml water is pipetted and into the other 1 ml barbituric acid solution and both mixtures are shaken. The one with added water serves as the water blank. The addition of the reagents should be done without pause and should be finished in about 1-2 min.

The extinction of the sample is read against the blank at 550 nm using a 1-cm cell immediately the maximum value is reached.

7.8.6 Calculation and expression of results

The method may be calibrated by using a standard solution of hydroxymethylfurfuraldehyde (H.M.F.) standardized by dissolving commercial or laboratory prepared HMF and assaying spectrophotometrically where $\epsilon = 16,830$ (J.H. Turner 1954) at 284 nm; using 0-300 μg standards. An equation is given by which results may be roughly worked out:

$$\text{mg/100g HMF} = \frac{\text{Absorbance}}{\text{Thickness of layer}} \times 19.2$$

Results are expressed as mg HMF/kg honey.

7.9 Literature references

- Chataway H.D. (1932) *Canad. J. Res.* 6, 540; (1933) *Canad. J. Res.* 8, 435; (1935) *Canad. Bee J.* 43 (8) 215 only
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7.7.2 Reagents

7.7.2.1 Iodine stock solution:

Dissolve 8.8g of iodine analytical grade, in 30-40 ml water containing 22g potassium iodine, analytical grade, and dilute to 1 litre with water.

7.7.2.2 Iodine solution 0.0007 N:

Dissolve 20g potassium iodine, analytical grade, in 30-40 ml water in a 500-ml volumetric flask. Add 5.0 ml iodine stock solution and make up to volume. Make up a fresh solution every second day.

7.7.2.3. Acetate buffer - pH 5.3(1.59 M):

Dissolve 87g sodium acetate, $3H_2O$ in 400 ml water, add about 10.5 ml glacial acetic acid in a little water and make up to 500 ml. Adjust the pH to 5.3 with sodium acetate or acetic acid as necessary, using a pH meter.

7.7.2.4 Sodium chloride solution 0.5 M:

Dissolve 14.5g sodium chloride, analytical grade, in boiled-out distilled water and make up to 500 ml. The keeping time is limited by mould growth.

7.7.2.5 Starch solution:

(a) Preparation of soluble starch

In a conical flask immersed in a water-bath and fitted with a reflux condenser, boil 20 g of potato starch for one hour in the presence of a mixture of 100 ml of 95 percent ethanol and 7 ml of 1 N hydrochloric acid. Cool, filter through a filtering crucible (pore size 90 - 150 microns) and wash with water until the wash-water ceases to give any chloride reaction. Drain thoroughly and dry the starch in air at $35^{\circ}C$. The soluble starch must be stored in a well stoppered flask.

(b) Determination of moisture content of soluble starch

Accurately weigh a quantity of approximately 2 g of soluble starch and spread in a thin layer over the bottom of a weighing bottle (diameter 5 cm). Dry for one and a half hours at $130^{\circ}C$. Allow to cool in a desiccator and re-weigh. The weight loss with respect to 100 g represents the moisture content. The moisture content of such starch should be 7-8% m/m depending on the humidity of the air in which the sample has been dried.

(c) Preparation of starch solution

Use a starch with a blue value between 0.5 - 0.55 using a 1 cm cell, as determined by the method below.

Weigh out that amount of starch which is equivalent to 2.0g anhydrous starch. Mix with 90 ml of water in a 250-ml conical flask. Bring rapidly to the boil, swirling the solution as much as possible, heating over a thick wire gauze preferably with an asbestos centre. Boil gently for 3 min., cover and allow to cool spontaneously to room temperature. Transfer to a 100-ml volumetric flask, place in a water bath at $40^{\circ}C$ to attain this temperature and make up to volume at $40^{\circ}C$.

Method for determining blue value of starch

The amount of starch equivalent to 1g anhydrous starch is dissolved by the above method, cooled and 2.5 ml acetate buffer added before making up to 100 ml in a volumetric flask.

To a 100-ml volumetric flask add 75 ml water, 1 ml N hydrochloric acid and 1.5 ml of 0.02 N iodine solution. Then add 0.5 ml of the starch solution and make up to volume with water. Allow to stand for one hour in the dark and read in 1 cm cell using a spectrophotometer at 660 nm against a blank containing all the ingredients except the starch solution. Reading on the absorbance scale = Blue value.

7.7.3 Apparatus

7.7.3.1 Water-bath at $40 \pm 0.2^{\circ}C$.

7.7.3.2 Spectrophotometer to read at 660 nm.

7.7.4 Sampling

The honey sample is prepared as in 6.1.3 without any heating

7.7.5 Procedure

7.7.5.1 Preparation of test samples

Honey solution: 10.0g honey is weighed into a 50-ml beaker and 5.0 ml acetate buffer solution is added, together with 20 ml water to dissolve the sample. The sample is completely dissolved by stirring the cold solution. 3.0 ml sodium chloride solution is added to a 50-ml volumetric flask and the dissolved honey sample is transferred to this and the volume adjusted to 50 ml.

N.B. It is essential that the honey should be buffered before coming into contact with sodium chloride.

Standardization of the starch solution

The starch solution is warmed to $40^{\circ}C$ and 5 ml pipetted into 10 ml of water at $40^{\circ}C$ and mixed well. 1 ml of this solution is pipetted into 10 ml 0.0007 N iodine solution, diluted with 35 ml of water and mixed well. The colour is read at 660 nm against a water blank using a 1 cm cell.

The absorbance should be 0.760 ± 0.020 . If necessary the volume of added water is adjusted to obtain the correct absorbance.

7.7.5.2 Absorbance determination

Pipette 10 ml *honey solution* into 50 ml graduated cylinder and place in $40^{\circ} \pm 0.2^{\circ}\text{C}$ water bath with flask containing *starch solution*. After 15 minutes, pipette 5 ml *starch solution* into the *honey solution*, mix, and start stop-watch. At 5 minute intervals remove 1 ml aliquots and add to 10.00 ml 0.0007 N *iodine solution*. Mix and dilute to *standard volume* (see 6.7.5.1). Determine absorbance at 660 nm in spectrophotometer immediately using 1-cm cell. Continue taking 1 ml aliquots at intervals until absorbance of less than 0.235 is reached.

7.7.6 Calculation and expression of results

The absorbance is plotted against time (min) on a rectilinear paper. A straight line is drawn through at least the last three points on the graph to determine the time when the reaction mixture reaches an absorbance of 0.235. Divide 300 by the time in minutes to obtain the diastase number (DN). This number expresses the diastase activity as ml 1 percent starch solution hydrolysed by the enzyme in 1g of honey in 1 h at 40°C . This diastase number corresponds with the Gothe-scale number.

Diastase activity = DN = ml starch solution (1 percent)/g honey/h at 40°C .

7.8 Photometric determination of hydroxymethylfurfural (H.M.F.) content ^{1/}

7.8.1 Principle of the method

Based on the method of Winkler (1955).

7.8.2 Reagents

7.8.2.1 Barbituric acid solution:

Weigh out 500 mg barbituric acid and transfer to a 100-ml graduated flask using 70 ml water. Place in a hot water bath until dissolved, cool and make up to volume.

7.8.2.2 *p*-toluidine solution:

Weigh out 10.0g *p*-toluidine, analytical grade, and dissolve in about 50 ml isopropanol by gentle warming on a water bath. Transfer to a 100-ml graduated flask with isopropanol and add 10 ml glacial acetic acid. Cool and make up to volume with isopropanol. Keep the solution in the dark. Do not use for at least 24 hours.

7.8.2.3 Distilled water (oxygen free)

Nitrogen gas is passed through boiling distilled water. The water is then cooled.

7.8.3 Apparatus

7.8.3.1 Spectrophotometer to read at 550 nm.

^{1/} This method may be replaced at sometime in the future by a spectrophotometric method.

7.8.4 Sampling

The honey is prepared as in 6.1.3 without any heating.

7.8.5 Procedure

7.8.5.1 Preparation of test sample

10 g of *honey sample* is weighed and dissolved without heating in 20 ml oxygen-free distilled water (6.8.2.3). This is transferred to a 50-ml graduated flask and made up to volume (*honey solution*). The sample should be tested after preparation without delay.

7.8.5.2 Photometric determinations

2.0 ml of *honey solution* is pipetted into each of two test tubes and 5.0 ml *p*-toluidine solution is added to each. Into one test tube 1 ml water is pipetted and into the other 1 ml barbituric acid solution and both mixtures are shaken. The one with added water serves as the water blank. The addition of the reagents should be done without pause and should be finished in about 1-2 min.

The extinction of the sample is read against the blank at 550 nm using a 1-cm cell immediately the maximum value is reached.

7.8.6 Calculation and expression of results

The method may be calibrated by using a standard solution of hydroxymethylfurfuraldehyde (H.M.F.) standardized by dissolving commercial or laboratory prepared HMF and assaying spectrophotometrically where $\epsilon = 16,830$ (J.H. Turner 1954) at 284 nm; using 0-300 μg standards. An equation is given by which results may be roughly worked out:

$$\text{mg/100g HMF} = \frac{\text{Absorbance}}{\text{Thickness of layer}} \times 19.2$$

Results are expressed as mg HMF/kg honey.

7.9 Literature references

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REPORT OF THE AD HOC WORKING GROUP ON THE
PROPOSED DRAFT CODEX STANDARD FOR HONEY

1. Countries and International Organizations represented in the Group were:

Argentina (*)
Australia (*)
Cameroon
Canada (*)
Denmark
Federal Republic of Germany
France (*)
Mexico
The Netherlands (*)
New Zealand (*)
Norway
South Africa (*)
Switzerland (*)
United Kingdom (*)
United States of America (*)
European Economic Community (*)

Countries identified by (*) were also represented on the 1982 Working Group. Canada was chairman of both Groups.

2. At its 14 February, 1984 Session the Working Group was able to consider the Sections from 1 to 3.1.2 of CX/PFV 84/13 and to reach consensus on these sections.

3. The comments contained in CX/PFV 84/16 and conference room documents submitted by The Netherlands (not numbered) and Japan (Conference Room Doc. 3) were considered by the Group.

4. In line with the request of the 1982 Working Group, Australia and the Federal Republic of Germany presented information to the Group. Argentina also presented its written position.

5. Considerable difficulty was encountered by the Group in dealing with the product called "Manufacturing Honey" or "Baking Honey" or "Industrial Honey". This product terminology was used in the original European Regional Standard and permitted deviations in diastase activity and HMF content, organoleptic characteristics, fermentation and heat treatment. The Proposed Draft Standard (CX/PFV 84/13) permitted only a deviation for diastase and HMF.

6. The Working Group, eventually, decided that the Standard should only apply to honey for direct consumption and to bulk honey intended for re-packing into retail packs. This decision is reflected in the Scope section.

7. Substantial changes and editorial modifications were made in Section 2 Description. In particular, the section on colour was deleted in its entirety.

8. The results of the February 14th meeting, appear as sections 1 through 3.4 of Appendix IX, ALINORM 85/20. It is to be noted in the final Committee report that Argentina held to its position that the moisture content shall be not more than 18 percent.

9. A second meeting was held during the morning of 15 February, 1984. The Working Group was unable to resolve differences over the levels of apparent sucrose content.

10. The Chairman of the Working Group gave a verbal report to the General Session of the Committee in the afternoon of 15 February 1984. He outlined some of the possible alternatives available to the Committee. Mention was made of the philosophy of minimum international standards for world trade.

11. The Chairman of the Committee and some Delegations also expressed opinions. Eventually, it was decided to reflect on the subject overnight and to meet in General Session on 16 February 1984 to try to resolve the impasse.