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ECONOMIC COMMISSION FOR EUROPE COMMITTEE ON
AGRICULTURAL PROBLEMS

ALINORM 76/25
January 1975

Working Party on Standardization of Perishable Produce

JOINT FAO/WHO FOOD STANDARDS PROGRAMME
CODEX ALIMENTARIUS COMMISSION
Eleventh Session

REPORT OF THE NINTH SESSION OF THE JOINT ECE/CODEX ALIMENTARIUS
GROUP OF EXPERTS ON STANDARDIZATION OF QUICK FROZEN FOODS
Rome, 7-11 October 1974

INTRODUCTION

1. The Joint ECE/Codex Alimentarius Group of Experts *on* Standardization of Quick Frozen Foods held its ninth session at FAO Headquarters, Rome, from 7 to 11 October 1974.
2. 51 representatives from 21 countries and 7 observers from 6 International Organizations were present (see Appendix I for List of Participants).

ELECTION OF RAPPORTEUR

3. Mr. F. Dunn (USA) agreed to act as rapporteur and was so appointed by the Group of Experts.

ADOPTION OF AGENDA

4. The Group of Experts unanimously adopted the Provisional Agenda for the session.

MATTERS ARISING FROM REPORTS OF OTHER CODEX MEETINGS

5. The Secretariat informed the Group that the Commission, at its Tenth Session, had advanced the Draft Standard for Quick Frozen Raspberries to Step 9 of the Procedure.
6. The Group was informed that the Codex Committee on Food Additives had included liquid nitrogen, carbon dioxide and dichlorodifluoromethane in its revised List B of food additives (CX/FA 75/2) and had referred them to the Joint FAO/WHO Expert Committee on Food Additives for evaluation. Governments had been requested to provide information on levels of residue in food, results of toxicological tests, specifications of identity and purity and to indicate what other liquid freezants should be included in the Codex list. The Group of Experts had been requested to consider further the matter of techno-r logical justification of liquid freezants (CL 1974/9, March 1974).

7. The Group of Experts requested its members to make available to the Codex Committee on Food Additives any relevant information on the liquid freezants, especially on dichlorodifluoromethane.

8. The Group agreed that it would be best to consider the specific remarks of the Codex Committees on Food Additives, Food Hygiene, and Methods of Analysis and Sampling relating to the standards which were before it for consideration, when it came to discuss the standards individually.

RECONSIDERATION AT STEP 7 OF THE DRAFT STANDARD FOR QUICK FROZEN SPINACH

9. The Group had before it for reconsideration at Step 7 the above draft standard as contained in ALINORM 74/25, AGRI/WP.1/GE.3.3 (Appendices IV and III respectively) and documents CX/QFF 74/11 (AGRI/WP.1/GE.3/R.19) and Addendum I containing government comments to the above standard.

Section 2.1 - Product Definition

10. The Group decided to adopt a new text proposed by the delegation of the USA, as contained in their comments in CX/QFF 74/H» with the exception of any reference to spinach being cut or chopped. The revised text is contained in Appendix II to this Report.

Section 2.2 - Process Definition

11. The delegation of the Federal Republic of Germany requested that the discussion of the question of product temperature be postponed until it had been dealt with separately as a general problem in the Draft Code of Practice for the Processing and Handling of Quick Frozen Foods. The Group agreed to discuss this matter when it examined the Draft Code.

Section 2.3.1 - Style

12. Following a proposal by the delegation of Switzerland the Group agreed to delete the word "intact" from the definition of "Leaf Spinach". The delegation of France proposed that the term "épinards en feuilles" in the French text should read "épinards en branches" as the former term was not used in France. The Group agreed to amend the text accordingly. The section on Pureed Spinach was amended and the revised text appears in Appendix II to this Report.

Section 3.2.2 - Analytical Characteristics

13. The Group considered the figures in square brackets for the salt-free dry matter and free water as contained in sub-sections 3.2.2.2 and 3.2.2.3. The delegation of the United Kingdom had previously proposed that the figure for the salt-free dry matter of 5.5% m/m should be reduced to 4.5% but indicated that it was now prepared to accept a figure of 5% m/m. It was suggested by the Chairman that if the figure was maintained it should only be for the pureed style. Some delegations agreed with this point of view whilst others felt that the figures were reasonable and could be maintained for all styles. The delegation of the United States explained the means by which the figures had been arrived at and stressed that they did represent different geographical areas throughout the United States. The Group agreed to maintain the present figures in square brackets as it was felt that at present there was insufficient data on these problems. The delegation of Switzerland proposed that more information be gathered on this matter particularly as regards the various stages such as (a) the incoming harvested product to the plant; (b) whilst it is being processed; and (c) the product ready for sale, and offered to cooperate in collaborative studies. The following countries agreed to cooperate:

Federal Republic of Germany, France, the Netherlands, the United Kingdom, and the United States of America. The delegation of Switzerland agreed to act as the Coordinator. The Group further agreed that the results of the study should be available for consideration at its next session.

Section 3.2.3 - Definition of Visual Defects

14. The Group agreed to reverse the order of the term "Flower stems" with "Seed heads". It was also agreed to change "flower head" to "seed head" in the definition. The delegation of France pointed out that the French text was incorrect concerning the same defect and the Group agreed to amend the text accordingly. It was also agreed to divide the definition for "discolouration" into "major" and "minor" defects.

Section 3.2.4 - Tolerances

15. Concerning Tables I and II it was agreed that the Total Allowable Points for minor defects should be increased from 15 to 20 to be consistent with a total allowable points of 20. It was also agreed that the unit of measurement of 5 cm should be applied to both Major and Minor defects for Extraneous Vegetable Matter.

Section 6 - Labelling

16. Some delegations were of the opinion that, where salt had been added to quick frozen spinach, this fact should be declared prominently on the label as part of the name. They stated that this was necessary in order to inform the consumer as spinach was frequently used in the diet of very young children. Other delegations were of the opinion that such a declaration was not necessary as salt was added in quantities which only enhanced natural spinach flavour and would not contribute a characterizing taste. It was therefore, sufficient to include salt in the list of ingredients. The delegation of Switzerland felt that the declaration of ingredients presented a general problem and that the Codex Committee on Food Labelling should be requested to discuss the purpose and meaning of lists of ingredients. The delegation of Australia was of the opinion that if salted spinach was a product which was distinct from the unsalted product the standard should provide for yet another style to take this into account.

17. The Secretariat drew the Group's attention to paragraph 64 of the Report of the Seventh Session of the Codex Committee on Food Labelling (ALINORM 74/22) where the Committee had considered the problem of whether the addition of salt should be declared on the label in close proximity to the name of the product and had decided that for ingredients of this and similar nature, a declaration in the list of ingredients was sufficient. The Committee had further agreed to keep this matter under review.

18. The Group took note of the above and agreed to insert a requirement into the standard, such as included in the standard for quick frozen peas, that "where a characterizing flavouring or ingredient has been added, this shall be stated as "with X", as appropriate". Governments could apply this provision to the addition of salt if they deemed it appropriate. Some delegations considered that there was a need to define what exactly was meant by a "characterizing flavour" or "ingredient". The delegation of the USA agreed to draw up a definition of "characterizing ingredient" during the session for discussion by the Group of Experts (see paras 122 and 123).

Section 6.4 - Name and Address

19. The delegation of Japan proposed that a provision to require the declaration of the date of manufacture be added in order to protect the health of the consumer. The Group agreed to include a section on Lot Identification on the proposal of the delegation

of Switzerland, as follows: "Each container shall be embossed or otherwise permanently marked in code or in clear which identifies the producing factory and the lot". As regards date marking, the Committee decided to postpone consideration of this general question pending the recommendations of the Ninth Session of the Codex Committee on Food Labelling (see paras 59-62, ALINORM 74/22).

Section 7 - Packaging

20. The Group's attention was drawn to an inconsistency between the sections on packaging of the standard for quick frozen spinach and the quick frozen strawberry and peas standards, since the standard for quick frozen spinach required protection from heat accumulation by radiation. The Group agreed to use the same wording as in the standard for quick frozen strawberries except that "moisture loss" was considered to be covered by "dehydration" and was, therefore, not included. The Group instructed the Secretariat to take steps to have a corresponding change made in the standard for quick frozen raspberries.

Section 8 - Methods of Examination, Analysis and Sampling

21. The Group of Experts adopted the amended method for the determination of mineral impurities contained in Appendix II of this report.

22. The Group of Experts reconfirmed the method of determination of salt-free dry matter contained under section 8.4.1 in Appendix IV to ALINORM 74/25.

23. As regards the determination of free water proposed by the delegation of the Netherlands (see Annex II, CX/QFF 74/11), the Group of Experts adopted this method and accepted the offer of the delegation of the USA to revise the method editorially, with the assistance of other interested delegations and of the Secretariat. In particular, the Group of Experts requested that the method of the sieve be verified.

24. The delegation of Switzerland undertook to arrange for the Codex methods to be used in the collaborative effort to be organized in relation to section 3.2.2 of the standard. The opinion was expressed that (a) the draining time of 20 min. seemed unduly long and that (b) the thawing temperature of 80°C was higher than required. The Group noted that the above methods fulfilled the requirements of the standard but considered that they were not true analytical methods requiring endorsement by the Codex Committee on Methods of Analysis and Sampling.

Status of the Standard

25. The Group considered that the draft standard as amended was suitable for adoption at Step 8. However, it decided to retain it at Step 7 of the Procedure pending the results from the collaborative studies on salt-free dry matter and free water.

CONSIDERATION AT STEP 7 OF THE DRAFT STANDARD FOR QUICK FROZEN PEACHES

26. The Group had before it the above standard as contained in document CX/QFF 74/6 (AGRI/WP.1/GE.3/R.14) and government comments thereon as contained in document CX/QFF 74/12 (AGRI/WP.1/GE.3/R.20). The Group decided to proceed as in the case of the Draft Standard for Quick Frozen Spinach and consider only those sections of the standard on which government comments had been received or on which participants at the session proposed certain changes.

Section 2.1 - Product Definition

27. The delegation of the USA proposed that the Product Definition should be redrafted to give more information concerning the nature of the product. Furthermore, the US delegation proposed that, as in the case of canned peaches, nectarines should be excluded from Prunus persica L. The delegation of the United Kingdom was of the opinion that, in order to be consistent with the standard for Quick Frozen Spinach, reference should not be made in the Product Definition to methods of processing. The Group agreed to the definition proposed by the USA in document CX/QFF 74/12 with the omission of references to cutting, peeling, etc. (see Appendix III).

Section 2.2 - Process Definition

28. The delegation of the Federal Republic of Germany made the same remarks as in the case of the standard for Quick Frozen Spinach (see paragraph 11). The Group decided to postpone consideration of this question until the views of the Technical Working Group, which was meeting during the session, were known.

Section 2.3 - Presentation

29. The delegation of The Netherlands was of the opinion that a distinction should be made, as in the case of canned peaches, between "free-stone" and "cling-stone" peaches. Although it was recognized that at this time only "free-stone" peaches were in fact used in the preparation of quick frozen peaches, the Group agreed to make a provision for both types of peaches and to add a new section entitled Varietal Type as in the Recommended International Standard for Canned Peaches (Ref. No. CAC/RS 14-1969).

Section 2.3.1 - Colour Type

30. The Group discussed whether the introductory statement to the various colour types should be worded with the expression "shall" or with the expression "may". For the sake of consistency, the Group decided to change the wording from "may be designated" to "shall be designated".

Section 3.1 - Optional Ingredients

31. The Group agreed to the editorial amendment to change "sugar" to "sugars". The delegation of France pointed out that in the French text the expression "sucre déshydraté" should be changed to "Sucre sec".

Section 3.3 - Quality Criteria

32. The delegation of Japan pointed out an error in the above section concerning units blemished by insect injury. The Group agreed to insert the words "practically free from" at the beginning of the phrase starting with "units blemished by insect injury . . ." The title of this section was also amended to read "Quality Factors".

Section 3.4.1 - Sample Size

33. The delegations of Japan and the Netherlands both suggested that the section dealing with sample size be reworded in such a way as to clarify the meaning of the word "units". The Group adopted the wording proposed by the delegation of the Netherlands contained in document CX/QFF 74/12 and agreed that the text dealing with the method of draining with the fruit would be included in the section "Methods of Analysis and Sampling". The Group also agreed that the method for the determination of drained fruit ingredient and other relevant methods of analysis should be the same as in

the case of Quick Frozen Strawberries with the exception of the determination of mineral impurities, which did not apply to the standard for Quick Frozen Peaches. The Group agreed that the last sentence in Section 3.4.1 dealing with standard sample unit size in document CX/QFF 74/6 should be maintained so as to provide for the method of draining of quick frozen peaches prepared with dry sugars and included in the section "Methods of Analysis and Sampling"...

TABLES I, II and III

34. To be consistent with the previous decision taken in connexion with the Quick Frozen Spinach, the Group agreed to delete the figures in the total column of the Defect Categories and to increase the Total Allowable Points from 20 to 25 in the Minor Defect Category column. In Table III under (a) discolouration, the Group noted that the unit of measurement was incorrect and agreed to change it to "each 4 cm²". The delegation of Australia pointed out that there was an inconsistency in the three Tables under (a), dealing with the presence of units which were green or discoloured. In the opinion of the delegation of Australia the presence of green units in the sample would not constitute a defect in the case of the green colour type. The Group agreed that in Section 3.3, dealing with visual or other defects subject to a tolerance, the phrase in brackets in the first line should be amended to read "except for green in green types". The Group also agreed that, for the sake of consistency, the standard for Quick Frozen Peaches should contain a section dealing with the definition of defects. The delegation of USA undertook to draw up such a section during the session of the Group and the amended text is contained in Appendix III to this Report.

Section 4 - Food Additives

35. The delegation of France was of the opinion that if sodium alginate was provided for in the standard then it would be desirable to also provide for the use of carrageenan. The delegation of France was further of the opinion that there should be either limits laid down for these additives or the provision should be drafted in such a way as not to make it appear that the maximum levels of use were not limited. In the opinion of the delegation of Switzerland thickening agents should be only those which were normal components of fruit and proposed the use of only normal pectin or amidated pectin if this proved to be required. A number of delegations were of the opinion that the use of thickening agents in the preparation of quick frozen peaches was not necessary and should not be provided for. Other delegations were of the opinion that the use of thickening agents together with ascorbic acid was desirable to prevent oxidation of the fruit after thawing. The Group decided to delete both sodium alginate and pectin from the section on food additives as there appeared to be insufficient technological justification for the use of these substances.

36. The Group noted that the Codex Committee on Food Additives had requested that, in view of the fact that ascorbic acid had an acceptable daily intake, a maximum level should be laid down for this substance, The delegation of Switzerland, supported by the delegation of the United States proposed a maximum level in the final product of 750 mg/kg for ascorbic acid and a limitation by good manufacturing practices for citric acid. The delegation of Poland proposed that the maximum limit for ascorbic acid should be 500 mg/kg. The delegation of the Netherlands supported this proposal. The Group agreed to 750 mg/kg. The Group further agreed to delete the words "of use" in the title of the column dealing with maximum permitted levels. In view of the fact that the maximum level for ascorbic acid had been proposed at the session the Group requested governments to send their comments on the maximum level of 750 mg/kg direct to the

Codex Committee on Food Additives. It agreed that, should the need arise, it would review the maximum limit at its next session.

Section 6 - Labelling

37. The Group agreed to include under the section dealing with the name of the food a provision for the declaration of *the* varietal type "free-stone" or "cling-stone" as appropriate. As regards Section 6.1.2 the delegation of the Federal Republic of Germany proposed that the quantity of added sugars and/or sugar solution should be declared on the label. The delegation of Finland was in support of this proposal. In the opinion of the delegation of the USA a provision for the quantitative declaration of sugars content would not be in conformity with other standards for Quick Frozen Fruits. The Group decided not to make any change to this section of the standard and agreed that the whole question of the declaration of sugars would have to be considered in a wider context at a future session.

38., As regards Section 6.3 the delegation of the Federal Republic of Germany was of the opinion that in the case of products manufactured by using sugar and/or sugar solutions the ingoing weight of fruit at the time of packing, without the added portion of sugar, should be declared on the label for the information of the consumer. The delegation of Italy supported this opinion. The delegation of Australia was of the opinion that it would be more appropriate to make provisions for the declaration of drained weight, which could be determined on the finished product. The Group noted that the Codex Committee on Food Labelling had recommended that, where the packing medium was consumed, there was no need to declare drained weight and requested the Codex Committee on Food Labelling to give this question further consideration. In the opinion of the delegation of the United States a provision for drained weight would require the development of an appropriate sampling plan. The Group agreed to request governments to comment on the proposal of the delegation of Australia regarding the declaration of drained weight in quick frozen products prepared using a packing medium. The Group agreed to provide for lot identification as in the case of the standard for Quick Frozen Spinach.

39. The Group noted that in Section 6.2 - List of Ingredients, the declaration of ascorbic acid was provided for either as "ascorbic acid" or as "antioxidant". In the opinion of the delegation of the USA, if the specific name without qualification were used, the consumer might be misled into thinking that the product had been fortified by means of Vitamin C. This view was supported by other delegations. It was agreed that it was desirable to make it clear on the label that the addition of ascorbic acid was not for nutritional purposes but for use as an antioxidant. The Group, therefore, agreed to provide for the declaration of ascorbic acid as "ascorbic acid added as an antioxidant". It also agreed to refer the matter of the declaration of ascorbic acid as a general problem to the Codex Committee on Food Labelling.

40. As regards subsection 6.5.2 the Group agreed that it did not apply to Quick Frozen Peaches and decided to delete this subsection.

Section 7 - Packaging

41. The Group decided to delete the words "moisture loss" in subsection (c) to bring it into line with Standards for Quick Frozen Vegetables and Fruits adopted previously.

Section 9 - Methods of Analysis and Sampling

42. As regards the method for obtaining drained fruit (see Table 3) the Group's decision is recorded in paragraph 33. The delegation of the USA was requested to prepare a draft- of that method for insertion in the section on methods of analysis and sampling on the basis of the decisions of the Group.

Status of the Standard

43. The Group decided to advance the Draft Standard for Quick Frozen Peaches to Step 8 of the Procedure for the Elaboration of World-Wide Codex Standards. The revised text of the Draft Standard is contained in Appendix III to this Report.

RECONSIDERATION AT STEP 7 OF THE DRAFT STANDARD FOR QUICK FROZEN BILBERRIES

44. The Group had before it the above draft standard as contained in document CX/QFF 74/2 (AGRI/WP.1/GE.3/R.10) and government comments thereon as contained in document CX/QFF 74/12 (AGRI/WP.1/GE.3/R.20). The Group agreed to consider only those sections on which written government comments had been received or to which participants attending the session wished to make amendments.

Section 1 - Scope

45. In order to make clear that the draft standard applied only to the Vaccinium myrtillus L. species of the genus Vaccinium, the Group adopted the amended version proposed by the delegation of the Netherlands as contained in their comments in CX/QFF 74/12.

Section 2.1 - Product Definition

46. In order to bring this section into line with the draft standard for Quick Frozen Peaches, the Group agreed to insert a reference to the fact that Quick Frozen Bilberries may be prepared either with or without dry sugars or syrup.

Section 2.2 - Process Definition

47. With regard to the proposal of the delegation of the Federal Republic of Germany (see paragraph 11), the Group agreed to discuss this question later in the session.

Section 3.2 - Composition

48. The Group agreed to bring this section into line with the Recommended International Standard for Quick Frozen Raspberries by providing for a definition of a defective unit and for lot acceptance (see Appendix IV).

Section 3.3.1 - General Requirements

49. The Group noted an error in the French text in the first line of this section, which should be corrected as follows: "-de caractéristiques variétales similaires." In respect of visual defects, the delegation of the Netherlands proposed the addition of provisions for sand and grit and, in the case of free-flowing berries, a provision for berries adhering one to another. The Group adopted that amendment proposed by the delegation of The Netherlands as contained in their comments in CX/QFF 74/12 (see Appendix IV;.

Section 3.3.2 - Analytical Requirements

50. The Group also adopted the editorial amendments proposed by the delegation of the Netherlands to make it clear that the limit for mineral impurities applied to the whole product, including berries and packing medium, if any.

Section 3.3.3 - Definitions and Tolerances for Visual Defects

51. The delegation of the Netherlands proposed the addition of a new paragraph similar to that in the Recommended International Standard for Quick Frozen Raspberries to provide for a tolerance for free-flowing berries. The Group adopted the proposal of the delegation of the Netherlands with minor editorial amendments to bring the wording into line with that adopted under section 3.3.1.

Section 3.3.3.1 - Definitions

52. The Group requested the Secretariat to redraft the definitions to bring them into line with the Recommended International Standard for Quick Frozen Strawberries (Ref. No. CAC/RS 52-1971).

Section 3.3.3.2 - Standard Sample size

53. The Group agreed to delete in Table I the numerical values given in the "Combined" column of the defect categories as in the case of standards previously considered. The word "total" was substituted for the word "combined".

Section 3.3.3.3 - Tolerances for Visual Defects

54. The Group requested the Secretariat to bring this section into line with the Recommended International Standard for Quick Frozen Raspberries.

Section 3.4.1 - Classification of Defectives

55. The Group agreed with the editorial redraft proposed by the delegation of the Netherlands (see Appendix IV).

Section 3.4.2 - Lot Acceptance

56. The Group requested the Secretariat to make the necessary consequential amendments to this section in view of the decisions reached in connexion with Section 3.2

Sections 6.1.2 and 6.3 - Net Contents

57. As regards the proposal by the delegation of the Federal Republic of Germany to declare added sugars and/or sugar solutions by quantity, the Group reached the same conclusion as they had for the Draft Standard for Quick Frozen Peaches (see paragraph 36).

Section 6.5.2 - Country of Origin

58. The Group decided to delete this section as it considered that the question of further processing in a second country did not apply to Quick Frozen Bilberries.

Section 7 - Packaging

59. The Group agreed to make the same change in sub-section 7.1.3 as it had done in the Draft Standard for Quick Frozen Peaches.

Section 8.3 - Test Procedures

60. The Group decided to transfer the method of determination of drained berries under section 3.3.3.2 to the section on test procedures.

Status of the Standard

61. The Group decided to advance the Draft Standard for Quick Frozen Bilberries to Step 8 of the Procedure for the Elaboration of World-wide Codex Standards. The revised version of the Draft Standard is contained in Appendix IV to this Report.

RECONSIDERATION AT STEP 4 OF THE PROPOSED DRAFT STANDARD FOR QUICK FROZEN BLUEBERRIES

62. The Group had before it the above proposed draft standard as contained in document CX/QFF 74/2 (AGRI/WP.1/GE.3/R.10) and government comments thereon as contained in document CX/QFF 74/13 (AGRI/WP.1/GE.3/R.21). During the consideration of the proposed draft standard, the Group made the following changes:

Section 1 - Scope

63. The Group adopted the editorially redrafted version proposed by the delegation of the Netherlands to make it clear that the standard applied only to the species Vaccinium corymbosum L. (see Appendix v). There was some discussion as to which varieties and cross-breeds of this species were included, in the draft standard. The delegation of Finland suggested that reference be made to: "Section 'blueberries' of the genus Vaccinium", as this phrase would include all the varieties, cultivars and cross-breeds of blueberries. The Group agreed to reconsider this matter at its next session. The Group was informed that the Codex committee on Pesticide Residues had included the following varieties, among others, under Blueberries: V. corymbosum L., V. Angustifolium Ait., and V. Ashei Reade.

Section 2.1 - Product Definition

64. The Group agreed to redraft this definition along the lines followed in the case of the draft standard for Quick Frozen Peaches.

Section 2.2 - Process Definition

65. Concerning the proposal of the delegation of the Federal Republic of Germany, as given in paragraph 11, the Group agreed to postpone their decision on this matter until later on in the session. It also noted that in the sixth line of the French text the word "entreposé" should be replaced by the word "maintenu" and that the last word in the sentence should be deleted. The Group agreed to delete the following words from the last sentence of the Process Definition: "... followed by the re-application of the quick freezing process as defined".

Section 2.3.2 - Type of Pack

66. As this paragraph did not add anything to that which was already covered under Section 3 and for the sake of consistency with the other standards for Quick Frozen Foods, the Group agreed to delete this Section.

Section 3.2 - Composition

67. The delegation of the Netherlands proposed that the same limits for sugar and syrup be applied to both blueberries and bilberries since in its opinion these two fruits were of very similar nature. The delegation of the USA explained that the reason for

using larger amounts of sugars in the preparation of quick frozen blueberries was the fact that wild blueberries had a high acid/sugar ratio, which had to be corrected with additional sugars. The Group decided not to make any changes to this section.

68. For the sake of consistency, the Group agreed to provide a definition of "defective unit" in terms of composition and also to provide for a section on "lot acceptance".

Section 3.3 - Quality Factors

69. The delegation of the Netherlands proposed an editorial redraft of this section, including sub-sections 3.3.1 to 3.3.3 and also to decrease the tolerance for disintegrated berries, in the case of cultivated products from 10% to 5%. The delegation of the USA was opposed to this reduction in the tolerance. The Group adopted the editorial changes proposed by the delegation of the Netherlands but decided not to decrease the tolerance for disintegrated berries.

Section 3.3.3.2 - Standard Sample Size

70. In the opinion of some delegations the sample size of 500 grammes appeared to be unduly high. The Group agreed to reduce the sample size to 300 grammes and to make corresponding reductions to the total points allowable in the various defect category (see Appendix V).

Section 3.3.3.3 - Tolerances for Visual Defects

71. The Group decided to add a new paragraph similar to that in the standard for Quick Frozen Bilberries to provide for a tolerance for free-flowing blueberries.

Sections 6.1.2 and 6.3 - Net Contents

72. As regards the proposal made by the delegation of the Federal Republic of Germany to declare added sugars and/or sugar solutions by quantity, the Group reached the same conclusions as given in paragraph 37.

Section 6.5.2 - Country of Origin

73. The Group decided to delete this section as it considered that the matter of further processing in a second country did not apply to Quick Frozen Blueberries.

Section 8 - Methods of Examination, Analysis and Sampling

74. The Group agreed to proceed in the same manner as in the case of the standard for Quick Frozen Bilberries.

Status of the Standard

75. The Group decided to advance the Proposed Draft Standard for Quick Frozen Blueberries to Step 5 of the Procedure for the Elaboration of World-Wide Codex Standards. The revised text is contained in Appendix V to this Report.

RECONSIDERATION AT STEP 7 OF THE DRAFT CODE OF PRACTICE FOR THE PROCESSING AND HANDLING OF QUICK FROZEN FOODS

76. The Group had before it the above Draft Code as contained in ALINORM 74/25 (AGRI/WP.1/GE.3/3, Appendix V) and government comments thereon as contained in ALINORM 74/40 and Addendum 6. The Group also had before it the Report of the Working Group on the Survey of Frozen Food Temperatures (A) During Local Distribution and (B) In Retail Cabinets. This Report is contained in Appendix VI to this Report.

77. The Group was informed of the decision taken by the Commission at its Tenth Session to return the Draft Code to the Group for reconsideration at Step 7 of the Procedure, in view of the fact that there were still problems which had not yet been resolved (ALINORM 74/44, paragraph 106).

Section III - Quick Freezing

78. Several delegations felt that the first part of sub-section 3.5 could be deleted and the latter part be added to 3.6. The delegation of the Federal Republic of Germany pointed out that even if 3.5 was deleted, there was still no provision for the product whilst being transported from the factory to the cold store.

79. The delegation of the Federal Republic of Germany proposed that an increase of temperature following the quick freezing process should not exceed the temperature of -18°C and that sub-section 3.5 be amended accordingly. The Group however decided to amend this sub-section in the following manner: "Effective measures should be taken to keep temperature rise to a minimum, after the quick freezing process and during handling and transport to cold storage."

Section V - Transport and Distribution

Sub-sections 5.1 to 5.4

80. The Group adopted the proposal of the Working Group that the word "transport" be clarified by the addition of the following phrase: "from warehouse cold store to warehouse cold store", in the relevant sub-sections.

Sub-section 5.6

81. The Group amended the text of this sub-section as follows: "... in such a way that any rise in product temperature above -18°C is kept to a minimum". The Group further agreed with the suggestion of the Working Group that no change should be made to footnote 1 .

Sub-section 5.7

82. The delegation of the Federal Republic of Germany, supported by the delegation of Sweden, was of the opinion that, while quick frozen foods should ideally be kept at -18°C or below, at the present time requirements concerning the transport and distribution of quick frozen foods should be flexible to take into account the existing situation in trade. However, in its opinion, this question should be critically reviewed in approximately three years time in the light of the results of new investigations and surveys. The delegation of Australia reserved its position on section 5 of the Code, as in its opinion it was too restrictive in many parts of the world and especially under tropical conditions.

Section 6 - Retail Sale

Sub-section 6.1

83. The delegation of France pointed out that in the French text the word "réfrigérés" should be replaced by the word "frigorifiques".

Sub-section 6.2

84. The delegation of Italy proposed that the requirement that "cabinets be equipped with a thermometer" be made mandatory by substituting the word "should" by the word "shall". The Group did not adopt this proposal in view of the fact that Codes of Practice did not have a mandatory character and were only intended as guidelines. The

delegation of France suggested that this sub-section be amended to require that thermometers be suitably placed in the cabinets. The delegation of Finland pointed out that Finnish legislation required that thermometers be placed in such a way as to be visible to the consumer. In view of the fact that no information was available to lay down specific requirements for the placing of thermometers in cabinets, the Group decided not to make any change to the existing text.

Sub-section 6.3

85. The delegation of the Netherlands proposed that the present text be re-worded to require that the temperature of the warmest package of the second layer in cabinets should not be allowed to become higher than -12°C. The Group decided not to make any changes to the existing text. In the opinion of the delegation of France, the problem concerning cold storage cabinets should be taken into account by national enforcement agencies in the light of the present situation.

Section 7 - Packaging

86. The delegation of the United States of America pointed out that sub-sections 7.1.3 and 7.1.4 differed from the corresponding sections in individual Codex standards. Noting that the Code of Practice represented a target to be achieved, the Group decided not to make any changes to the present text.

87. The Group agreed to incorporate in this section provisions for labelling by including a general reference to the Recommended International Standard for the Labelling of Prepackaged Foods. In addition, the Group also included the sub-section D (8) on "Information on Label" from the Code of Hygienic Practice for quick Frozen Fruits, Vegetables and their Juices (ALINORM 71/13, Appendix IV).

Section IX - Quality of the Product

88. The Group considered a proposal made by the delegation of the Netherlands in their written comments to include a new section in the Draft Code concerning the quality of the product. This would provide indications to the inspector on how to proceed in a situation where a product did not fulfil the temperature requirements as outlined in the Code, but did meet the quality requirements laid down in the individual standards.

89. There was considerable discussion on whether to include such a section in the Draft Code. Although some delegations felt that it would be extremely useful to inspectors, other delegations felt that it had no place in an advisory Code of this nature. The Group noting that the process definitions in the standards were to be reviewed later in the session and would give emphasis to conditions rather than to temperatures alone, decided not to include this section in the Draft Code.

Status of the Code

90. The Group agreed to advance the Draft Code for the Processing and Handling of Quick Frozen Foods to Step 8 of the Procedure. The revised text is contained in Appendix VII of this Report.

CONSIDERATION OF THE SECTION 'PROCESS DEFINITION' IN INDIVIDUAL STANDARDS FOR QUICK FROZEN FOODS

91. In the opinion of the delegation of the Federal Republic of Germany there was a need for a more precise definition of the distribution phase of quick frozen foods. Reference should be made not only to temperature but also to conditions such as length of storage and methods of handling. The aim of the standard should be to ensure a high

quality quick-frozen product at a reasonable price. Quick frozen food was known , to be kept for 6 months or more in retail cabinets and such food stored at -12°C was known to result in a low quality product. In view of the difficulties in ensuring that quick frozen food stored in existing retail cabinets did not rise above - 18 C, there was need for a flexible provision which would make reference to not only temperature but also to length of storage and handling. Such a provision would have to be revised in the light of further information. In the opinion of the delegation of the Netherlands, lack of specific information did not yet permit the establishment of provisions concerning storage time and temperature' requirements.

92. The delegation of Denmark was in agreement with the view expressed by the delegation of the Netherlands and was further of the opinion that the requirements of individual standards for quick frozen foods were enough guarantee that the product had been stored and handled in an appropriate manner. Furthermore, the standards contained requirements concerning hygiene which ensured that the quick frozen products were wholesome.

93. The delegation of the United States of America proposed that the first three sentences of the Process Definition, together with the last sentence, should form a new mandatory section of "Process Definition". As regards the penultimate sentence dealing with transport, storage and distribution, it should be deleted and a cross-reference should be made under a new section "Handling Practice" to the Draft Code of Practice for the Processing and Handling of Quick Frozen Foods. Some delegations were in favour of this proposal, considering that the quality criteria of individual standards for quick frozen foods would ensure that the product was handled in a way recommended in the Code of Practice. Other delegations were of the opposite view and maintained that the standard should require that quick frozen Products be kept at such conditions as would ensure a product of the quality required by the standard.

94. The Group decided to sub—divide the existing text under Process Definition into a definition of the process proper and a section dealing with the handling of quick frozen foods after quick freezing, up to the time of final sale. As regards Process Definition, the Group adopted the proposal of the delegation of the USA. As regards the section on Handling Practice, the Group agreed to retain the existing penultimate sentence but decided to change the phrase "at a low temperature" to "under such conditions" to take into account factors other than temperature (e.g. length of storage and method of handling). It further agreed to insert a text recommending that quick frozen foods be handled in accordance with the Code.

95. In order to bring standards which had been already submitted to governments for acceptance into line with the new revisions which had been adopted for the section on "Description" and also with the deletion of sub-section 6.5.2 - Country of Origin, in the standards considered at the present session, the Group agreed that the new revisions should be submitted to the Commission as proposed amendments to the relevant standards at Step 9.

FUTURE WORK OF THE WORKING GROUP ON THE SURVEY OF FROZEN FOOD TEMPERATURES (A) DURING LOCAL DISTRIBUTION AND (B) IN RETAIL CABINETS

96. The Group noted the recommendation of the Working Group (Appendix VI) concerning the need for further investigations into the conditions affecting quick frozen food in the distribution chain. The Group agreed that the Working Group should seek further data, assess the possibility of technical improvements and. advise whether or not

there was a need to change the existing provisions of the Draft Code of Practice for Processing and Handling of Quick Frozen Foods. The United Kingdom agreed to coordinate this work and it was agreed that Australia should participate in addition to the existing members of the Working Group.

RECONSIDERATION AT STEP 4 OF THE PROCEDURE FOR CHECKING TEMPERATURE OF QUICK FROZEN FOODS

97. The Group had before it the above Procedure contained in Appendix VII to ALINORM 74/25 dealing with the Procedure for Checking Temperature of Quick Frozen Foods.

98. The delegation of the United States of America, the author country, was of the opinion that the above Procedure required editing and revision to remove repetition and to improve the presentation. It undertook to prepare a new text for circulation to governments for comment. A number of delegations were of the opinion that there was a need for a practical and routine method of checking temperature especially in retail cabinets. In this connexion (see Section 14.2.3) the opinion was expressed that the first alternative method under (a) which referred to the ISO method of selecting packages was not entirely suitable for this purpose. In the opinion of the delegation of Australia Codex methods were intended for referee purposes and the development of routine methods should be left to national authorities. It agreed to provide the delegation of the USA with detailed comments on the method before the end of the year. The delegation of the USA pointed out that the Procedure contained three methods i.e Method I which would be suitable for referee purposes, Method II which measured surface temperature and could be regarded as a practical method, and Method III which was a method of checking air temperature.

Status of the Procedure

99. The Group accepted the offer of the delegation of the United States of America to redraft the Procedure and decided that the revised version be submitted to governments at Step 3 for further comments.

CONSIDERATION OF THE DRAFT CODE OF HYGIENIC PRACTICE FOR QUICK FROZEN FRUITS, VEGETABLES, AND THEIR JUICES

100. The Group had before it the above Draft Code contained in ALINORM 71/13, Appendix IV, and document CX/QFF-LIM. 6 containing an extract from the Report of the Tenth session of the Codex Alimentarius Commission. The Group noted that the Commission at its Tenth Session had decided to refer the Code to the Group for reconsideration in view of the fact that it was inter-related with the Code of Practice for the Processing and Handling of Quick Frozen Foods. The Commission had requested the Group to advise as to how best to proceed with the two Codes.

101. The delegation of Australia drew the Group's attention to the fact that, with the exception of end product specifications and the section on labelling, the Code of Hygienic Practice for Quick Frozen Foods differed very little from the General Principles of Food Hygiene. The Group was informed that the latter General Principles would be revised in due course. In the opinion of a number of delegations there was little point, therefore, in proceeding with the further elaboration of the Code of Hygienic Practice for Quick Frozen Foods.

102. In the opinion of a number of delegations the Section of the Code dealing with the information to be included on the label of quick frozen foods was more appropriate

for inclusion either in individual standards in the Code of Practice for the Processing and Handling of Quick Frozen Foods. As regards the Section dealing with the end product specifications contained in the Code of Hygienic Practice, some delegations were in favour of including them in the individual standards for quick frozen foods as a mandatory provision. In the opinion of the delegation of France, supported by other delegations, the requirement that quick frozen foods be free from pathogenic micro-organisms and their toxins was not realistic as it was not possible to prepare quick frozen foods in such a manner. The Group was informed that certain standards for quick frozen raw fish products did not contain such a requirement for similar reasons. As regards paragraph C of Section v dealing with food additives and pesticide residues, the Group noted that these questions were dealt with by the Codex Committees on Food Additives and Pesticide Residues respectively.

103. The Group decided that: a) the reference to the Code of Hygienic Practice for Quick Frozen Fruits, Vegetables and their Juices contained in the Section on Hygiene in individual standards should be replaced by reference to the General Principles of Food Hygiene; b) the section on Hygiene in the Code of Practice for the Processing and Handling of Quick Frozen Foods should remain unaltered; c) no reference should be made in individual standards to paragraphs A, B and C dealing with end product specifications of Section V of the Code of Hygienic Practice; and d) that Section 0(8), dealing with label information for keeping, of the Code of Hygienic Practice should be transferred to the Code of Practice for the Processing and Handling of Quick Frozen Foods.

Recommendations concerning the Code

104. The Group agreed to refer the Code of Hygienic Practice for Quick Frozen Fruits, Vegetables and their Juices to the Commission with the recommendation that it be nullified as, with the exception of end product specifications, its provisions were either contained in the General Principles of Food Hygiene or have now been incorporated in the Code of Practice for the Processing and Handling of Quick Frozen Foods. In addition, the Group noted that the Codex Committee intended to revise the General Principles of Food Hygiene. The Group agreed that the problem of end product specifications would be considered at a future session. The Group also recommended to the Commission that the standards for quick frozen peas, quick frozen strawberries and quick frozen raspberries at Step 9 be amended as indicated under a) in para 103.

RECONSIDERATION AT STEP 4 OF THE PROPOSED DRAFT STANDARD FOR QUICK FROZEN CAULIFLOWER

105. The Group had before it for reconsideration at Step 4 the above proposed draft standard as contained in CX/QFF 74/8 (AGRI/WP.1/GE.3/R.16) and government comments thereon as contained in CX/QFF 74/14 (AGRI/WP.1/GE.3/R.22). The main points emerging from the Group's deliberations were as set out hereunder.

106. The Group agreed that the changes which had been made during the session and which applied to all the standards for quick frozen foods, should also be included in the proposed draft standard.

107. The delegation of Japan proposed that a section on weights and measures should be included in the proposed draft standard. It was explained that there was no need for such a section in the quick frozen food standards as there were no provisions for drained weight or requirements for "fill". It was also pointed out that where a packing medium was used in some standards, those standards contained a specific provision

under Composition. The Group agreed that at the present moment there was no need for a section on weights and measures in the standards for quick frozen foods.

Scope

108. The Group agreed with the proposal made by the delegation of Australia that the botanical nomenclature for cauliflower Brassica oleracea L. var. botrytis L. should only be used for cauliflower and not also for broccoli.

Style

109. The delegation of the Netherlands proposed that this section be revised in a similar manner to the Quick Frozen Spinach and furthermore to divide the style called "clusters or florets" into two separate styles. The Group agreed with this proposal as contained in the written comments of the Netherlands but decided to place the figures relating to the styles of "Cluster" and "Florets" in square brackets. The delegation of the United Kingdom stated that the style "clusters" was not declared as such on the label in the United Kingdom, but was sometimes called "florets" and usually just "Cauliflower". The Group also agreed to amend the French text for the names of the two styles to "Grandes fleurettes" and "Fleurettes" respectively. The Group also agreed to amend the style for "Split" to read "The whole head, cut vertically into two or more sections".

Sizing

110. Several delegations considered that it was extremely difficult to size whole or split cauliflower lower for consumers and queried whether this provision was really necessary. The Group agreed to delete this section and to request governments to comment on whether they size cauliflower and if so how.

General Requirements

111. The Group agreed to amend the requirement dealing with colour according to the written comments of the United States as mentioned in CX/QFF 74/14.

Definition of Visual Defects

112. The amendments proposed by the United States in their written comments relating to surface discolouration, damage and blemish and EVM were adopted.

Table I - Whole and Split Sections

113. The delegation of Denmark proposed that the defect for "fibrous or woody" should be moved into the serious category of defect. The Group decided, however, to leave it as a major defect but to place the figures in square brackets.

Classification of Defectives

114. The Group agreed to amend this section as proposed by the Netherlands in their written comments.

Labelling

115. The Group amended the labelling section as regards styles to take into account the changes which had been made in sub-section 2.3.1.

Cooking Procedure

116. The amendment proposed by the Netherlands in their written comments as regards the cooking time according to the style was adopted by the Group.

Status of. the Standard.

117. The Group decided to retain the Proposed Draft Standard for Quick Frozen Cauliflowers at Step 3 of the Procedure and to request further government comments. The revised text is contained in Appendix VIII to this Report.

RECONSIDERATION AT STEP 4 OF THE PROPOSED DRAFT STANDARD FOR QUICK FROZEN GREEN BEANS

118. The Group had before it the above Draft Standard as contained in document CX/QFF 74/10 (AGRI/WP. 1/GE.3/R. 18) and government comments thereon as contained in documents CX/QFF 74/15, Addendum 1, Addendum 2 (AGRI/WP.1/GE.3/R.23, Add. 1 and 2) and LIM. 4. The Group, recognizing that the standard had only recently been sent out for government comments, agreed not to discuss it in any detail.

119. The Group discussed as to whether the standard should cover only green beans or also wax beans as well. A number of delegations informed the Group that in their countries only green beans were prepared by the quick freezing process. The delegation of the USA pointed out that wax beans were also quick frozen in its country and that therefore the standard should provide for both species. The delegation of the Netherlands was of the opinion that it would be difficult to determine which type of bean had been used in products presented in the sliced form. The delegation of Hungary pointed out that there would be difficulties in applying the standard to a variety of beans of yellow colour. The Group agreed to revise the standard to conform to the Recommended Standard for Canned Green Beans and Canned Wax Beans - - that is "conforming to the characteristics of Phaseolus vulgaris L. and Phaseolus coccineus L. . . .

Status of the Standard

120. The Group agreed that the author country should redraft the proposed draft standard in the light of the comments made at the session and the written comments. The proposed draft standard should then be sent out to governments for a further round of comments at Step 3. The Group also agreed that governments should be invited to comment on the applicability of the "tough string" test, which was included in the Recommended International Standard for Canned Green Beans and Canned Wax Beans (Ref. No. CAC/RS 16-1969).

STATUS OF THE PROPOSED DRAFT STANDARDS FOR QUICK FROZEN BROCCOLI AND BRUSSELS SPROUTS

121. The Group agreed that the author countries should redraft the above proposed draft standards in the light of the comments made at the session and the written government comments. The proposed draft standards would then be sent out at Step 3 for a further round of government comments.

DEFINITION OF "CHARACTERIZING INGREDIENT"

122. The definition drawn up by the delegation of the United States of America is as follows:

"Characterizing ingredient

Any ingredient which, when added to another food, imparts to such food the distinctive flavour of the ingredient. Salt and sugar when added in the small amounts customarily used in culinary practice merely enhance the normal flavour of the food to

which they are added, but do not give the food a new or different flavour. Examples would be:

- Frozen peas with mint essence
- Cinammon flavoured apple jelly
- Canned peaches with rum flavour

On the other hand, vanilla flavouring in milk chocolate would not be a characterizing ingredient."

123. The Group agreed to request governments to send their comments on the above definition to the delegation of the USA so that it could be reconsidered by the Group at the next session.

PROGRAMME OF FUTURE WORK FOR THE NEXT SESSION

124. The Group agreed that the agenda of its next session would include:

Quick Frozen Spinach	- Step 7			
Quick Frozen Cauliflower	- Step 4	authorcountry:	USA	
Quick Frozen Broccoli	- Step 4	"	USA	
Quick Frozen Brussels Sprouts	- Step 4	"	"	UK
Quick Frozen Leeks	- Step 4	"	"	The Netherlands
Quick Frozen Green Beans	- Step 4	'	"	UK
Procedure for Checking	- Step 4	"	"	USA
Temperature for Quick Frozen Foods				

125. With regard to the proposed draft standard for Quick Frozen Red Sour Cherries the delegation of the United States agreed to collect international trade statistics in order that the Group could evaluate and decide whether or not to proceed with the standard.

126. The Group took note of the proposals of the delegations of Australia, the Netherlands and Sweden to elaborate standards for Quick Frozen Potato Chips ("French fries"), Carrots and Corn on the Cob respectively. It was agreed that those delegations would prepare justifications according to the work priorities criteria as contained in the Procedural Manual, page 51, para 4, and also to submit Proposed Draft Standards for consideration at Step 2.

DATE AND PLACE OF THE NEXT SESSION

127. The Group agreed that the Tenth Session would take place at the Palais des Nations, Geneva, in October 1975.

ELECTION OF CHAIRMAN AND VICE-CHAIRMAN

128. The Group unanimously re-elected Mr. T. van Hiele (the Netherlands) and Mr. W. Orłowski (Poland) as Chairman and vice-chairman respectively to serve from the d of the Ninth Session until the end of the Tenth Session

ALINORM 76/25 •
APPENDIX I

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APPENDIX II

DRAFT STANDARD FOR QUICK FROZEN SPINACH (Retained at Step 7 of the Procedure)

1. SCOPE

This standard shall apply to quick frozen spinach of the species Spinacia oleracea L. as defined below and offered for direct consumption without further Processing except for repacking if required. It does not apply to the product when indicated as intended for further processing or for other industrial purposes.

2. DESCRIPTION

2.1 Product Definition

Quick Frozen Spinach is the product prepared from fresh, clean, sound edible parts of the spinach plant conforming to the characteristics of the species Spinacia oleracea L. and which have been sorted, washed, sufficiently blanched to ensure adequate stability of colour and flavour during marketing cycles and properly drained.

2.2 Process Definition

Quick frozen spinach is the product subjected to a freezing process in appropriate equipment and complying with the conditions laid down hereafter. This freezing operation shall be carried out in such a way that the range of temperature of maximum crystallization is passed quickly. The quick freezing process shall not be regarded as complete unless and until the product temperature has reached -18°C (0°F) at the thermal centre after thermal stabilization.

The recognized practice of repacking quick frozen products under controlled conditions is permitted.

2.3 Handling Practice

The product shall be handled under such conditions as will maintain the quality during transportation, storage and distribution up to and including the time of final sale. It is recommended that during storage, transportation, distribution and retail, the product be handled in accordance with the provisions in the Code of Practice for the Processing and Handling of Quick Frozen Foods.

2.4 Présentation

2.4.1 Style

- (a) Whole Spinach - the intact spinach plant with root removed.
- (b) Leaf Spinach - substantially whole leaves most of which are separated from the root crown.
- (c) Cut-Leaf Spinach - parts of leaves of spinach generally larger than 20 mm in the smallest dimension.
- (d) Chopped Spinach - parts of leaves of spinach cut into small pieces generally less than 10 mm in the largest dimension, but not comminuted to a pulp or puree - i.e. pieces smaller than 3 mm in dimension.
- (e) Pureed Spinach – (spinach Puree) - spinach finally divided or finely chopped or having (Spinach Puree) passed through a sieve such that the leaf particles are less than 3 mm in dimension.

3. ESSENTIAL, COMPOSITION AND QUALITY FACTORS

3.1 Optional Ingrédients

3.1.1. Sait.

3.1.2. Condiments, such as spices and herbs.

3.2 Quality Factors

3.2.1 General Requirements

Quick Frozen Spinach shall:

- have a reasonably uniform green colour characteristic of the variety;
- be clean, sound and practically free from foreign matter;
- be free from foreign flavour and odour, taking into considération any added optional ingredients;
- be practically free from fibrous material and for the styles of Whole, Leaf and Cut Leaf not materially disintegrated due to mechanical damage, and with respect to Visual Defects or Other Defects subject to a tolerance shall be
- practically free from sand and grit;
- well drained and contain no excess water;
- practically free from loose or detached leaves in Whole style only;
- reasonably free from discoloured leaves or portions thereof;
- reasonably free from flower stems (seed heads);
- reasonably free from flower buds;
- reasonably free from crown and portion thereof, except for Whole spinach;
- practically free from root material;
- reasonably free from extraneous vegetable material (EVM).

3.2.2 Analytical characteristics

3.2.2.1 Mineral impurities - not more than 0.1% m/m.

3.2.2.2 Salt-free dry matter - not less than [5.5%]m/m'

3.2.2.3 Free water - not more than [35%] m/m (to be determined only if the product fails to meet the requirement for salt-free dry matter).

3.2.3 Définition of Visual Defects

- (a) Loose leaves (Whole Style only) - leaves which are detached from the crown;
- (b) Discolouration - discolouration of any kind on the leaves or stem portions and which materially detracts from the appearance of the product;
Minor - discolouration which is light in colour
Major - discolouration which is dark in colour
- (c) Extraneous Vegetable (EVM) Material - harmless vegetable material such as grass, weeds, straw, etc.
Minor - EVM which is green and tender;
Major - EVM which is other than green or is coarse;
- (d) Seed Heads (Flower stems) - the flower bearing portion of the spinach plant, which is longer than 25 mm;
- (e) Flower buds - the separate flower buds detached from the

- seed head;
- (f) Crowns (exclusive of style) Whole - the solid area of the spinach plant between the root and the attached leaf clusters;
- (g) Root material - any portion of the root, either loose or attached to leaves.

3.2.4 Tolérances for Visual Defects

3.2.4.1 Standard Sample Sizes

The sample size for segregating and evaluating visual defects shall be as follows:

<u>Style</u>	<u>Standard Sample Size</u>
Whole and Leaf	300 grammes
Cut Leaf	300 grammes
Chopped	100 grammes
Puréed	100 grammes

3.2.4.2 Method of Examination

For séparation and enumeration of visual defects the test sample (standard sample unit) is placed in water in a deep tray, and the leaves or leaf portion separated one by one.

3.2.4.3 Tolerances based on the standard sample sizes indicated in 3.2.4.1, visual defects shall be assigned points in accordance with the appropriate taîae in this section. The maximum number of defects permitted is the Total Point Allowance rating indicated for the respective categories Minor, Major and Serious or the Combined. Total of the foregoing categories.

TABLE I
Whole Leaf and Cut Leaf Style
(Sample unit 300 grammes)

Defect	Unit of Measurement	Defect Categories			
		Minor	Major	Serious	Total
(a) Loose Leaves (whole style only)	Each leaf	1			
(b) Discolouration	Each 4 cm ²	1			
			2		
(c) EVM	Each 5 cm	1	2		
			2		
(d) Seed Heads	Bach whole head		2		
	Each portion	1			
(e) Crowns (Exclusive of whole style)	Each whole		2		
	Each part	1			
(f) Root Material	Each Piece			4	
TOTAL ALLOWABLE POINTS		20	10	4	20

TABLE II
Chopped Style
(Sample unit 100 grammes)

Detect	Unit of Measurement	Defect Categories		
		Minôr	Major	Total
(a) Discolouration	Each cm ²			
(b) EVM	Each 1 cm	1		
			2	
(c) Flower Buds	Each 50 pièces	1		
(d) Crown Material	Each piece		2	
(e) Root Material	Each piece		2	
TOTAL ALLOWABLE POINTS		20	10	20

TABLE III
Pureed Style
(Sample unit 100 grammes)

Defect	Allowance
Any dark particle or flower buds	Shall not affect the overall appearance of the product.

3.2.5 Definition of "Defective" for Quality Criteria

Any sample unit taken in accordance with the Sampling Plans for Prepackaged Foods, and which is adjusted to a standard sample unit size for applying the tolerances relating to "Visual Defects", shall be regarded as "defective" for the respective characteristics as follows:

- (a) any sample unit that fails to meet the analytical requirements of 3.2.2;

- (b) any sample unit that fails the Total Point Allowance for defect catégories Minor, Major or Serious; or which fails the Total Point Allowance for the combined Total of the respective defect Categories (3.2.4).

3.2.6 Lot Acceptance for Quality Criteria

A lot is considered acceptable When the number of "defectives" as defined in paragraph 3.2.5 does not exceed the acceptance number (c) for the appropriate sample size as specified in the "Sampling Plans for Prepackaged Foods". In applying the acceptance procedure each "defective" (sub-paragraph (a) or (b) of 3.2.5) is treated individually for the respective characteristics.

4. FOOD ADDITIVES

None permitted.

5. HYGIENE

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

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 provisions apply:

6.1 The Name of the Food

6.1.1 The name of the food as declared on the label shall include "whole spinach", "leaf spinach", "cut leaf spinach", "chopped spinach" or "spinach puree".

6.1.2 where a characterizing flavouring or ingredient had been added, this shall be stated as "with X", as appropriate.

6.1.3 The words "quick frozen" shall also appear on the label, except that the term "frozen"¹ may be applied in countries where this term is customarily used for describing the product processed in accordance with sub-section 2.2 of the standard.

¹"Frozen": this term is used as an alternative to "quick frozen" in some English speaking countries

6.2 List of Ingredients

A complete list of ingredients shall be declared, in descending order of proportion in accordance with sub-section 3.2 (c) of the General Standard for the Labelling of Prepackaged Foods.

6.3 Net Contents

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

6.4 Name and Address

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

6.5 Country of Origin

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

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 Additional Requirements

Information for keeping and cooking of the product shall be given on retail packs.

6.8 Bulk Packs

In the case of quick frozen spinach in bulk the information required in 6.1 to 6.6 must either be placed on the container or to be given in accompanying documents, except that the name of the food accompanied by the words "quick frozen" (the term "frozen" may be used in accordance with sub-section 6.1.2 of this standard) and the name and address of the manufacturer or packer must appear on the container.

7. PACKAGING

7.1 Packaging used for quick frozen spinach must:

7.1.1 Protect the organoleptic and other quality characteristics of the product;

7.1.2 Protect the product against micro-biological and other contamination;

7.1.3 Protect the product from dehydration, and where appropriate, leakage as far as technologically practicable;

7.1.4 Not pass on to the product any odour, taste, colour or other foreign characteristics, throughout the processing (where applicable) and distribution of the product up to the time of final sale.

8. METHODS OF EXAMINATION, ANALYSIS AND SAMPLING

The methods of examination, analysis and sampling described hereunder are international referee methods which are to be endorsed by the Codex Committee on Methods of Analysis and Sampling.

8.1 Sampling

Sampling shall be carried out in accordance with the Sampling Plans for Pre-packaged Foods (AQL-6.5) (Réf. No. CAC/RM 42-1969).

8.2 Thawing Procedure

According to the FAO/WHO Codex Alimentarius Standard Procedure for Thawing of Quick Frozen Fruits and Vegetables (Ref. No. CAC/RM 32-1970).

8.3 Test Procedures

8.3.1 Net Weight - FAO/WHO Codex Alimentarius Standard Procedure for Net Weight Determination of Frozen Fruits and Vegetables (Recommended International Standard for Quick Frozen Peas, Section 8.3, CAC/RS 41-1970, Method CAC/RM 34-1970).

8.3.2 Free Water Determination: according to the method for determination of drained weight for quick frozen spinach given in Appendix VI to ALINORM 74/25.

8.4 Analysis

8.4.1 Determination of Salt-Free Dry Matter

8.4.1.1 Determine the total dry matter of the product by drying over sand for 4 hours at 105°C

8.4.1.2 From the value obtained in 8.4.1.1 deduct the amount of salt (NaCl) determined by either (a) electrometric titration using a pH meter with a silver electrode; or (b) direct titration with Ag NO₃. Express the result, after deducting salt from dry matter, as "Salt-free Dry Matter".

8.4.2. Determination of Mineral Impurities (Sand)

8.4.2.1 Principle of Method

This method describes a procedure by which sand and other earthy material is separated from plant tissue by a process of flotation and sedimentation. The sand being heavier sinks to the bottom of the receptacle and the residue is then collected, incinerated, weighed, and reported as Mineral Impurities.

8.4.2.2 Apparatus Reagents

(a) Apparatus

Blendor or mascerator (Atomix, Turmix, Waring or equivalent)
Beakers - 2,000 ml capacity
Funnels
Filter paper, Whatman No.1 or equivalent
Porcelain or platinum crucibles
Air oven or bunsen burner
Muffle furnace (600°C)
Dessicator with active dessicant
Analytical balance

(b) Reagents

NaCl solution (15% w/v)

8.4.2.3 Preparation of Test Sampling (Analytical Sub)

(a) Fruit Products

- (i) Containers of 500 g, or less - use the entire contents (fruit plus any packing medium). Comminute in blendor and transfer the entire mixture to the first beaker, using small quantities of water to assure complete *transfer* of material.
- (ii) Containers larger than 500 g - thoroughly mix the contents of the entire container and quickly remove a representative 500 g portion. Blend and transfer as specified in (a).

(b) Vegetable Products

The method is similar to that specified in 8.4.2.3 (a) for fruit except the analytical sub is 250 g. After the sub is placed in the blendor a small amount of water may be necessary to facilitate masceration of the material.

8.4.2.4 Procedure

- 1) Transfer the analytical sub to a 2 L beaker taking care to include any sand that might settle out.
- 2) Nearly fill the beaker with water and mix contents by swirling, using a stirring rod if needed.

- 3) Let stand about 10 minutes and decant supernatant material and water into a second 2 L beaker.
- 4) Refill the first beaker with water, repeat the mixing and swirling operation and again let set 10 minutes.
- 5) Fill the second beaker with water, mix and swirl, and let stand 10 minutes.
- 6) At the end of the 10 minute period decant beaker No. 2 into beaker No. 3 Likewise decant beaker No. 1 in beaker No. 2.
- 7) Repeat the sequence carefully decanting supernatant front beaker No. 3 into sink, until all fruit tissue is removed from the sample.
- 8) Finally collect the residue from ail the beakers in beaker No. 3.
- 9) Remove any seeds or fruit tissue that settle out by treating the residue in beaker No. 3 with hot 15% NaCl solution.
- 10) Remove NaCl by washing with hot water. Removal can be verified by testing the washings with Ag NO₃.
- 11) Finally transfer residue remaining in step 10 to funnel fitted with ashless filter paper. Use small portion of water to assure transfer of ail residue. Discard filtrate.
- 12) Transfer filter paper to a weighed crucible. Dry in air oven or oven bunsen burner. Ignite in muffle furnace for about 1 hour at 600°C.
- 13) Cool in dessicator and weigh.
- 14) The weight of water insoluble residue is determined by subtracting, the weight of the empty crucible from the weight of the crucible plus incinerated residue.

8.4.2.5 Expression of Results

Express the residue of mineral impurities on the basis of mg per kilogramme. If the test sample is 500 g, multiply the value (in mg) obtained in Step 14) by two (2). If the test sample is less than 500 g, use the following formula

$$X = \frac{1000}{W} R$$

in which

X = mineral impurities (mg/kg)

W = weight of test sample (g)

R = residue remaining after incineration (mg)

8.4.3. Determination of Free Water

8.4.3.1 Scope

The method is applicable to quick frozen spinach.

8.4.3.2 Definition

The free water is the weight of the liquid that cornes off the thawed product by draining it on a sieve during a certain time.

8.4.3.3 Principle

The product is thawed under standardized conditions and then transferred to a sieve with standardized dimensions.

After a certain time the drained liquid is weighed. This can be used as a guide to consistency.

8.4.3.4 Apparatus

- (a) Waterbath, regulated thermostatically.
- (b) Balance of adequate capacity, accuracy 1 g.
- (c) Polyethylene bags approximately 39 x 15 cm, thickness approximately 0.12 mm, well to close
- (d) Seal apparatus for polyethylene bags.
- (e) Round sieves, made of poly vinylchloride tube and stainless steel wire with the following dimensions:

sieve opening 0.84 mm; thickness of the wire 0.37 mm; 64 openings/cm²

for 150 g	:	inside diameter of tube	49mm
" 300 g	:	" " " "	71mm
" 450 g	:	" " " "	86Mm
" 600 g	:	" " " "	101Mm
" 750 g	:	" " " "	113Mm
" 900 g	:	and more: inside diameter of tube	125 mm

- (f) Funnels in rack, in which the sieves are placed at level.
- (g) Beakers, cylinders or other containers in which the liquid is collected.
- (h) Scraping-knife.

8.4.3.5 Procedure

- (1) Large packages (> 900 g) are divided into 2 or more pieces of suitable quantity, of which the free water has to be determined separately. The sum of the free water of the different pieces represents the total free water.
- (2) The spinach + packing are weighed.
- (3) The packing is removed and weighed.
- (4) The spinach is transferred into a polyethylene bag and well closed.
- (5) The bag with spinach is thawed at a temperature of 80°C, the thawing-time will be dependent on the number and the size of the bags to be treated. The temperature in the centre of the bag must be about 75°C. Example: 10 bags of 450 g will take 2 hours.
- (6) After complete thawing the bag is snipped open.
- (7) The spinach is carefully transferred to a sieve, prepared according to 8.4.3.4.(f) that fits the packing unit and smoothed (no pressing). The draining time enters at this moment.
- (8) The rest of the spinach in the bag is well scraped together with a scraping-knife and also transferred to the sieve.
- (9) After a draining time of 20 minutes, the liquid in the beaker or cylinder is weighed.

(10) The liquid is discarded, the beaker or cylinder is cleaned, dried and weighed.

8.4.3.6 Expression of Results

- (a) Free water is the weight of the liquid plus beaker or cylinder (9) minus weight of the beaker or cylinder (10).
- (b) Free water as a percentage of net weight is free water (a) divided by net weight, (2) minus (3), multiplied by 100.

APPENDIX III

DRAFT STANDARD FOR QUICK FROZEN PEACHES

Advanced to Step 8 of the Procedure)

1. SCOPE

This standard shall apply to quick frozen peaches of the species Prunus persica L. as defined below and offered for direct consumption without further processing, except repacking if required. It does not apply to the product when indicated as intended for further processing or for other industrial purposes.

2. DESCRIPTION

2.1 Product Definition

Quick frozen peaches is the product prepared from the fresh, sound, properly ripened fruit conforming to the characteristics of Prunus persica L., but excluding nectarine varieties, which fruit is packed with or without a dry sugar or a syrup and is packaged.

2.2 Process Definition

Quick frozen peaches are the product subjected to a freezing process in appropriate equipment and complying with the conditions laid down hereafter. This freezing operation shall be carried out in such a way that the range of temperature of maximum crystallization is passed quickly, The quick freezing process shall not be regarded as complete unless and until the product temperature has reached -18°C (0°F) at the thermal centre after thermal stabilization.

The recognized practice of repacking quick frozen products under controlled conditions is permitted.

2.3 Handling Practice

The product shall be handled under such conditions as will maintain the quality during transportation, storage and distribution up to and including the time of final sale. It is recommended that during storage, transportation, distribution and retail, the product be handled in accordance with the provisions in the Code of Practice for the Processing and Handling of Quick Frozen Foods.

2.1. Présentation

2.4.1. Varietal Type

Peaches of distinct varietal types shall be designated:

Freestone - where the pit separates readily from the flesh; or

Clingstone - where the pit to the flesh.

2.4.2. Colour Type

Peaches of distinct varietal differences shall be designated according to the colour of the ripe flesh.

- (a) white - varietal types in which the predominant colour ranges from white to yellow-white;
- (b) yellow - varietal types in which the predominant colour ranges from pale yellow to light orange;
- (c) red - varietal types in which the colour ranges from orange red to red with more or less pronounced variegated red colouring other than that associated with.. the pit cavity;
- (d) green - varietal types in which the predominant colour is light green but which are fully mature and properly ripened.

2.4.3. Style

Quick frozen peaches shall be presented in the following styles:

- (a) whole - unpitted whole peaches;
- (b) halves - pitted and cut into two approximately equal parts following the longitudinal axis;
- (c) quarters - pitted and cut into four approximately equal parts following the longitudinal axis;
- (d) sliced - pitted and cut into wedge shaped sectors of approximately equal size;
- (e) pieces - (regular or irregular) - pitted and comprising regular or irregular shapes and sizes;
- (f) diced - pitted and cut into cube-like parts having a maximum size of 15 mm long on one edge.

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1. Optional Ingredients

Sugars (sucrose, invert sugar, invert sugar syrup, dextrose, fructose, glucose syrup, dried glucose syrup).

3.2. Composition

3.2.1 Peaches prepared -with dry sugars

The total soluble solids content of the liquid extracted from the thawed, comminuted sample shall not be more than 35% nor less than 18% as determined by refractometer at 20°C

3.2.2 Peaches prepared with syrup

The amount of syrup used shall be no more than that required to cover the peaches and fill the spaces between them. The total soluble solids content of the liquid extracted from the thawed, comminuted sample shall be no more than 30% not less than 15% as determined by refractometer at 20°C.

3.2.3 Definition of "Defective" for Composition

Any sample unit that falls outside the limits for the soluble solids range* specified in 3.2.1 and 3.2.2 shall be regarded as a "defective" provided it does not exceed the limits of the range by more than 5 percent soluble solids.

3.2.4 Lot Acceptance for Composition

A lot is considered acceptable for Compositional criteria when the number of "defectives" as defined in 3.2.3 does not exceed the acceptance number (c) for the appropriate sample size of the Sampling Plans for Prepackaged Foods (AQL-6.5) (Ref. No. CAC/RM 42-1969).

3.3. Quality Factors

General Requirements.

Quick frozen peaches shall be:

- clean and practically free from foreign material;.
- free from foreign flavour and odour;
- of similar varietal characteristics;
- of good reasonable uniform colour characteristics of the varietal type

and with respect to visual or other defects subject to a tolerance, shall be:

- practically free from dark discolouration or green areas (except for green in green types);
- practically free from blemished units;
- practically free from stalks (stems), or portions thereof, or other extraneous vegetable matter (EVM);
- practically intact units for the style and may be materially altered in shape due to excess trimming or mechanical damage;
- practically free from fibrous units;
- reasonably free from overripe, mushy or disintegrated fruit;
- reasonably free from peel;
- free from whole pits (stones) except in whole style;
- practically free from pit fragments.

3.3.1 Definition of Visual Defects

Discolouration	- discolouration due to oxidation or bruising and which materially detracts from the appearance of the product;
Blemish	- units affected by insect injury or scab pathological damage or other similar means;
Stalks (stems)	- the immediate stalk which attaches the peach to the branch of the peach tree;
Extraneous Vegetable Matter (EVM)	- Harmless vegetable material such as pieces of leaf;
Excess trim and mechanical damage	- units gouged or severely trimmed such that the damage apparent appearance and shape of the unit is materially altered;
Fibrous units	- units with tough fibres that are objectionable when eaten;

- Over-ripe or mushy - units that are excessively soft or disintegrated to the extent that they have lost their normal shape;
- Pit fragments - pieces of pit which are hard and sharp and are at least 3 mm in any dimension.

3.4. Tolerances for Visual Defects

3.4.1 Standard Sample sizes

The sample size for segregating, classifying and enumerating visual defects is as follows:*

<u>Style</u>	<u>Standard Sample Size</u>
Whole	20 units (whole fruits)
Halved and Quartered	30 units (halves and quarters)
Sliced, Diced, Pieces	300 grammes

The above sample units are made up of drained fruit (8.3.2).

3.4.2 Allowances for Defects

Defect	Unit of Measurement	Defect Categories			
		Minor	Major	Serious	Total
(a) Discolouration or green	Each 4 cm ²	1			
(b) Blemish	Each 0.5 cm ² to 1 cm ² > 1 cm ² Very dark, penetrating the flesh	1	2	4	
(c) stalks, stems, other EVM	Each piece		2		
(d) Excess trim or mechanical damage	Each unit		2		
(e) Fibrous units	Each unit		2		
(f) Overripe, mushy	Each unit			2	
(g) Peel	Each 1 cm ²	1			
TOTAL ALLOWABLE POINTS		25	8	4	25

TABLE II

Halved and Quartered
(30 Units)

Defect	unit of Measurement	Defect Categories			
		Minor	Major	Serious	Total
(a) Discolouration or green	Each 4 cm ²	1			
(b) Blemish	Each 0.5 cm ² to 1 cm ² > 1 cm ² Very dark, penetrating the flesh	1	2	4	
(c) stalks, stems, other EVM	Each piece		2		
(d) Excess trim or mechanical damage	Each unit		2		
(e) Overripe, mushy	Each unit	1			
(f) Fibrous	Each unit		2		
(g) Peel	Each 1 cm ²	1			
(h) Pit fragments	Each piece		2		
TOTAL ALLOWABLE POINTS		25	8	4	25
(i) Whole Pits (stones) 1 per 3 kgs					

TABLE III
Sliced, Diced, Pieces
(300 g. drained Fruit)

Defect	unit of Measurement	Defect catégories			
		minor	Major	serious	Total
(a) Discolouration or green	Each 4 cm ²	1			
(b) Blêmish	up to 1 cm ² > 1 cm ² Very dark, penetrating the flesh	1	2	4	
(c) Stalks, stems, other EVM	Each piece		2		
(d) Exeess trim	Each unit	1			
(e) Overripe, mushy	Each 5 g	1			
(f) Fibrous	Each unit		2		
(g) Peel	Each cm ²	1			
(h) Pit fragments	Each piece		2		
TOTAL ALLOWABLE POINTS		25	6	4	25
(i) Whole pits (stones) 1 per 3 kgs,					

3.4.3 Definition of "defective" for Quality Factors

Any sample unit taken in accordance with the Sampling Plans for Prepackaged Foods, and which is adjusted to a standard sample unit size for applying the tolerances relating to Visual Defects, shall be regarded as "defective" for the respective characteristics as follows:

- (a) any sample unit that fails to meet the general requirements of 3.3
- (b) any sample unit that fails the Total Point Allowance for defect categories Minor, Major or Serious; or which fails the Total Point Allowance for the combined Total of the respective defect categories (3.4.2).

3.4.4 Lot Acceptance for Quality Factors

A lot is considered acceptable when the number of defectives" as defined in paragraph 3.4.3 does not exceed the acceptance number (c) for the appropriate sample size as specified in the Sampling Plans for Prepackaged Foods, provided that with respect to all styles except whole the number of whole pits (stones) does not exceed the tolerance on a sample average basis.

4. FOOD ADDITIVES

The following provisions in respect of food additives are subject to endorsement by the Codex Committee on Food Additives.

6.1 The following are permitted:

<u>Additives</u>	<u>Maximum level</u>
4.1.1. Ascorbic acid	750 mg/kg
4.1.2. Citric acid	limited by G. M. P.

5. HYGIENE

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

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 The name of the food as declared on the label shall include the designation "peaches".

6.1.2 In addition, there shall appear on the label in conjunction with or in close proximity to the word "peaches":

- (a) the style, as appropriate: "whole", "halves", "quarters", "slices", "pieces" or "diced";
- (b) the packing medium: "with (name of the sweetener and whether as such or as the, syrup)",

6.1.3 Peaches of distinct varietal types shall be designated: "freestone" or "clingstone" as appropriate (see subsection 2.4.1).

6.1.4 In addition there shall appear on the label the words "quick frozen" except that the term "frozen" may be applied in countries where this term is customarily used for describing the product processed in accordance with sub-section 2.2 of this standard.

6.1.5 The colour type of the flesh of the peaches shall be declared either by illustration or by nomenclature.

6.2 List of Ingredients

A complete list of ingredients shall be declared in descending order of proportion, in accordance with sub-section 3.2(c) and (d) of the General Standard for the Labelling of Prepackaged Foods.

6.2.1 If ascorbic acid is added to preserve colour, its presence shall be declared in the list of ingredients or elsewhere on the label in this manner: "Ascorbic acid added as an anti-oxidant".

6.3 Net Contents

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

6.4 Name and Address

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

6.5 Country of Origin

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

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 Additional Requirements

Information for keeping and thawing of the product shall be given on retail packs.

6.8 Bulk Packs

In the case of quick frozen peaches in bulk the information required in 6.1 and 6.6 must either be placed on the container or be given in accompanying documents, except that the name of the food accompanied by the words "quick frozen" (the term "frozen" may be applied in countries where this term is customarily used for describing the product processed in accordance with sub-section 2.2 of this standard) and the name and address of the manufacturer or packer must appear on the container.

7. PACKAGING

Packaging used for quick frozen peaches must

- (a) protect the organoleptic and quality characteristics of the product;
- (b) protect the product from bacteriological and other contamination;
- (c) protect the product from dehydration and, where appropriate, leakage as far as technologically practicable;
- (d) not pass on to the product any odour, taste, colour or other foreign

8. METHODS OF EXAMINATION, ANALYSIS AND SAMPLING

The methods of examination, analysis and sampling described hereunder are international referee methods which are to be endorsed by the Codex Committee on Methods of Analysis and Sampling.

8.1 Sampling

Sampling shall be carried out in accordance with the Sampling Plans for Prepackaged Foods (AQL-6.5) (Réf. No. CAC/RM 42-1969).

8.2 Thawing Procedure

According to the FAO/WHO Codex Alimentarius standards Procedure for Thawing of Quick Frozen Fruits and Vegetables (Réf. No. CAC/RM 32-1970).

8.3 Test Procedures

8.3.1 Net Weight - FAO/WHO Codex Alimentarius standard Procedure for Net Weight Determination of Frozen Fruits and Vegetables (Recommended international Standard for Quick Frozen Peas, Section 8.3, CAC/RS 41-1970, Method CAC/RM 34-1970).

8.3.2 Drained Fruit - Drained fruit is determined by thawing the product until it is practically free from ice crystals and then draining on a screen - 3 mesh/cm (8 mesh/inch) - for two minutes. The weight of product retained by the screen is "drained fruit". When dry sugar (s) is added to the peaches it shall be removed with a gentle spray of water' before draining.

8.4 Analysis

8.4.1 Total Soluble Solids - FAO/WHO Codex Alimentarius Method - Determination of Total Soluble Solids Content in Frozen Fruits (Ref. No. CAC/RM 36-1970)

DRAFT STANDARD FOR QUICK FROZEN BILBERRIES
(Advanced to Step 8 of the Procedure)

1. SCOPE

This standard shall apply to quick frozen bilberries of the species vaccinium myrtillus L. as defined below and offered for direct consumption without further processing, except for repacking if required. It does not apply to the product when indicated as intended for further processing or for other industrial purposes nor to the product covered by the special standard for Quick Frozen Blueberries.

2. DESCRIPTION

2.1 Product Definition.

Quick frozen bilberries is the product prepared from fresh, clean, sound, ripe bilberries of firm texture conforming to the characteristics of Vaccinium myrtillus L. with or without a dry sugar or a syrup and is packaged and frozen in an appropriate manner.

2.2 Process Definition

Quick frozen bilberries is the product subjected to a freezing process in appropriate equipment and complying with the conditions laid down hereafter. This freezing operation shall be carried out in such a way that the range of temperature of maximum crystallization is passed quickly. The quick freezing process shall not be regarded as complete unless and until the product temperature has reached -18°C (0°F; at the thermal centre after thermal stabilization,

The recognized practice of repacking quick frozen products under controlled Conditions is permitted.

2.3 Handling Practice

The product shall be handled under such conditions as will maintain the quality during transportation, storage and distribution up to and including the time of final sale. It is recommended that during storage, transportation, distribution and retail, the product be handled in accordance with the provisions in the Code of Practice for the Processing and Handling of Quick Frozen Foods.

2.4 Presentation

2.4.1 Style

Quick Frozen bilberries may be presented as free-flowing (i.e. as individual berries not adhering to one another) or non free—flowing (i.e. as a solid block).

3. ESSENTIAL. COMPOSITION AND QUALITY FACTORS

3.1 Optional Ingredients

Sugars (sucrose, invert sugar, invert sugar syrup, dextrose, fructose, glucose syrup,, dried glucose syrup).

3.2 Composition

3.2.1 Bilberries prepared with dry sugars

The total soluble solids content of the liquid extracted from the thawed, comminuted sample shall be not more than 35% nor less than 18%, expressed as sucrose, as determined by refractometer at 20°C.

3.2.2 Bilberries prepared with syrup

The amount of syrup used shall be no more than that required to cover the berries and fill the spaces between them. The total soluble solids content of the liquid extracted from the thawed, comminuted sample shall be not more than 25% nor less than 15%, expressed as sucrose, as determined by refractometer at 20°C.

3.2.3 Definition of "Defective" for Composition

Any sample unit that falls outside the limits for the soluble solids range specified in 3.2.1 and 3.2.2 shall be regarded as a "defective" provided it does not exceed the limits of the range by more than 5 percent soluble solids.

3.2.4 Lot Acceptance for Composition

A lot is considered acceptable for Compositional Criteria when the number of "defectives", as defined in 3.2.3 does not exceed the acceptance number (c) for the appropriate sample size of the Sampling Plans for Prepackaged Foods (AQL-6.5) (Réf. No. CAC/RM 42-1969).

3.3 Quality Factors

3.3.1 General Requirements,

The product shall be:

- of similar varietal characteristics;
- of good colour;
- free from foreign flavour and odour;
- clean, sound and practically free from mould and other harmless foreign matter;

and with respect to visual - or other defects with a tolerance shall be:

- practically free from sand and grit;
- when presented as free-flowing, practically free from berries adhering one to another and which cannot be easily separated by hand without damage when in the frozen state;
- practically free from extraneous vegetable material (EVM);
- reasonably free from cap stems (stalks)
- practically free from green berries;
- practically free from dissimilar varieties of edible berries other than bilberries;
- reasonably free from blemished berries;
- reasonably free from undeveloped or mummified berries.

3.3.2 Analytical Requirements

Mineral impurities such as sand, grit, and silt shall be not more than 0.05 percent m/m. on the whole product (berries and packing medium, if any).

3.3.3 Free-Flowing Characteristics

When presented as "free flowing" a tolerance of 10 per cent m/m shall be allowed for berries which are stuck together and not easily separated in the frozen state. The sample unit for free "flowing" is the entire contents of the container or as large a quantity as practicable.

3.3.4 Definitions and tolerances for Visual Defects

3.3.4.1 Definitions

- (a) Extraneous Vegetable Material (BVM) means leaves or portions of the bilberry plant, or other similar vegetable material which is harmless.
- (b) Cap Stems (Stalks) - means the immediate stem that attaches the bilberry to the plant, whether or not attached to the berry, and which is 2 mm, or greater in length.
- (c) Green Berries - means completely uncoloured berries or berries that have a green cast that predominates over the normal reddish purple colour of bilberries.
- (d) (o) Dissimilar Varieties - means other edible berries that are distinctly different in colour or shape, which have definitely different internal characteristics than bilberries.
- (e) Blemished - means bilberries which show visible signs of damage by insects or by pathological injury.
- (f) Undeveloped or Mummified - means berries that are badly shrivelled, dried, or hard.

3.3.4.2 Standard Sample Size

The sample size for evaluating Visual defects, including application of tolerances, is 300 grams of drained berries. (8.3.2)

TABLE 1
(Sample unit 300 grams)

Detect	UNIT of MEASUREMENT	DEFECT CATEGORIES		
		Minor	Major	Total
(a) EVM	each piece <1 cm ² each piece 1 cm ² and larger	1	2	
(b) Cap Stems	each stem	1		
(c) Green Berries	each berry		2	
(d) Dissimilar Varieties	each berry		S	
(e) Blemished		1	a	
slightly	each berry			
materially	each berry			
(f) Undeveloped or Mummified	each berry		2	
TOTAL POINTS ALLOWABLE		20	10	20
Disintegrated, Badly Crushed, or Smashed		10% m/m		

¹ See subaction 3.3.4.3.

3.3.4.3 Tolerances for Visual Defects

Based upon examination of the standard sample unit as specified in 3.3.4.2 Visual defects are classified as "minor" or "major" and assigned points in accordance with Table I. To be acceptable the sample unit shall not exceed the "Total Allowable Points" for the respective categories, including total, in the Table.

3.4 Lot Acceptance for Quality Factors

3.4.1 Definition of "defective"

Any sample unit taken in accordance with the "Sampling Plans for Prepackaged Foods (AQL-6.5)"(Ref. No. CAC/RM 42-1969) shall be regarded as a "defective" for the respective characteristics as follows:

- (a) that exceeds the tolerance for mineral impurities (3.3.2);
- (b) that exceeds the tolerance for "free flowing" (3.3.3);
- (c) that exceeds the "maximum total points for Visual defects" in any one or more of the categories in Table I (3.3.4.3); or that exceeds the tolerance for disintegrated, badly crushed, or smashed, in Table I (3.3.4 3).

3.4.2 Lot Acceptance

A lot will be considered acceptable with respect to Quality Factors when the number of "defectives" as defined in paragraph 3.4.1 does not exceed the acceptance number (c) for the appropriate sample size as specified in the Sampling Plans for Prepackaged Foods.

In applying the acceptance procedure each "defective" (as defined in 3.4.1 sub-paragraphs (a) or (b) or (c)) is treated individually for the respective characteristic.

4. FOOD ADDITIVES

None permitted.

5. HYGIENE

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

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 The name of the food as declared on the label is "bilberries".

6.1.2 In conjunction or in close proximity to the word "bilberries" the packing medium: "with (name of sweetener and whether as such or as the syrup)".

6.1.3 The words "quick frozen" except that the term "frozen" may be applied in countries where this term is customarily used for describing the product processed in accordance with sub-section 2.2 of this standard.

6.2 List of Ingredients

A complete list of ingredients shall be declared, in descending order of proportion in accordance with sub-section 3.2(c) and (d) of the General Standard for the Labelling of Prepackaged Foods (1969).

6.3 net Contents

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

6.4 Name and Address

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

6.5 Country of origin

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

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 Additional Requirements

Information for keeping and thawing of the product shall be given on retail packs.

6.8 Bulk Packs

In the case of quick frozen bilberries in bulk the information required in 6.1 to 6.5 must either be placed on the container or be given in accompanying documents, except that the name of the food accompanied by the words "quick frozen" (the term "frozen" may be used in accordance with sub-section 6.1.3 of this standard) and the name and address of the manufacturer or packer must appear on the container.

7. PACKAGING

7.1 Packaging used for quick frozen bilberries must:

- 7.1.1 protect the organoleptic and other quality characteristics of the product;
- 7.1.2 protect the product against micro-biological and other contamination;
- 7.1.3 protect the product from dehydration and, where appropriate, leakage, as far as technologically practicable;
- 7.1.4 not pass on to the product any odour, taste, colour or other foreign characteristics.

8. METHODS OF EXAMINATION, ANALYSIS AND SAMPLING

The methods of examination, analysis and sampling described hereunder are international referee methods which are to be endorsed by the Codex Committee on Methods of Analysis and Sampling.

8.1 Sampling

Sampling shall be carried out in accordance with the Sampling Plans for Prepackaged Foods (AQL-6.5) (Ref. No. CAC/RM 42-1969).

8.2 Thawing Procedure

FAO/WHO Codex Alimentarius Standard Procedure for Thawing of Quick Frozen Fruits and Vegetables (Ref. No. CAC/RM 32-1970).

8.3 Test Procedures

8.3.1 Net Weight - FAO/WHO Codex Alimentarius Standard Procedure for Net Weight Determination of Frozen Fruits and Vegetables (Recommended International Standard for Quick Frozen Peas, Section 8.3, CAC/RS 41-1970, Method CAC/KM 34-1970).

Drained Berries

8.3.2 "Drained berries" is determined by thawing the product until it is practically free FROM ice crystals and then draining on a screen - 3 mesh/cm (8 mesh/inch) - for two minutes. The weight of product retained by the screen is "drained berries". When dry sugar(s) is added to the berries it shall be removed with a gentle spray of water before draining.

8.4 Analysis

8.4.1 Total Soluble Solids - FAO/WHO Codex Alimentarius Method•- Determination of Total soluble solids content in Frozen Fruits (Réf. No. CAC/KM 36-1970).

8.4.2 Mineral Impurities - Appendix I Document AGRI /WP.1/GE.3/CRP No. 5 "Mineral Impurities in Quick Frozen Fruits and Vegetables" (to be endorsed). Annex I to Appendix II of the report (to be inserted).

DRAFT STANDARD FOR QUICK FROZEN BLUEBERRIES

Advanced to step 5 01 (the procedure)

1. SCOPE

This standard shall apply to quick frozen blueberries of the species Vaccinium corymbosum L. as defined below and offered for direct consumption without further processing, except for repacking, if required. It does not apply to the product when indicated as intended for further processing or for other industrial purposes, nor to the bilberries as covered by the special Standard for Quick Frozen Bilberries.

2. DESCRIPTION

2.1 Product Definition

Quick frozen blueberries is the product prepared from fresh, clean, sound, ripe and stemmed blueberries of firm texture, conforming to the characteristics of Vaccinium corymbosum L., and which are packed with or without sugar or a sugar syrup and frozen in an appropriate manner.

2.2 Process Definition

Quick frozen blueberries is the product subjected to a freezing process in appropriate equipment and complying with the conditions laid down hereafter. This freezing operation shall be carried out in such a way that the range of temperature of maximum crystallization is passed quickly. The quick freezing process shall be regarded as complete unless and until the product temperature has reached -18°C (07) at the thermal centre after thermal stabilization. The recognized "practice of repacking quick frozen products under controlled conditions as defined is permitted.

2.3 Handling Practice

The product shall be handled under such conditions as will maintain the quality during transportation, storage and distribution up to and including the time of final sale. It is recommended that during storage, transportation, distribution and retail, the product be handled in accordance with the provisions in the Code of Practice for the Processing and Handling of Quick Frozen Foods.

2.4 Presentation

2.4.1 Style

Quick frozen blueberries may be presented as free-flowing (i.e. as individual barriers not adhering to one another) or non free-flowing (i.e. as a solid block).

3 ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 Optional Ingredients

Sugars (sucrose, invert sugar, invert sugar syrup, dextrose, fructose, glucose syrup, dried glucose syrup).

3.2 Composition

3.2.1 Blueberries prepared with dry sugars

The total soluble solids content of the liquid extracted from the thawed, comminuted sample shall be not more than 30% or less than 20%, expressed as sucrose, as determined by refractometer at 20°C.

3.2.2 Blueberries prepared with syrup

The amount of syrup used shall be no more than that required to cover the berries and fill the spaces between them. The total soluble solids content of the liquid extracted from the thawed, comminuted sample shall be not more than 21% nor less than 16%, expressed as sucrose, as determined by refractometer at 20 C.

3.2.3 Definition of "Defective" for Composition

Any sample unit that falls outside the limits for the soluble solids range specified in 3.2.1 and 3.2.2 shall be regarded as a "defective" provided it does not exceed the limits of the range by more than 5 percent soluble solids.

3.2.4 Lot Acceptance for Composition

A lot is considered acceptable for Compositional Criteria when the number of "defectives", as defined in 3.2.3 does not exceed the acceptance number (c) for the appropriate sample size of the Sampling Plans for Prepackaged Foods (AQL-6.5) (Ref. Mo. CAC/RM 48-1969).

3.3 Quality Factors

3.3.1 General Requirements

The product shall be:

- of similar varietal characteristics;
- of good colour;
- free from foreign flavour and odour;
- clean, sound and practically free from mould and other harmless foreign matter; and with respect to visual - or other defects with a tolerance shall be:
 - practically free from sand and grit
 - When presented as free-flowing, practically free from berries adhering one to another and which cannot be easily separated by hand without damage when in the frozen state;
 - practically free from extraneous vegetable material (EVM);
 - reasonably free from cap stems (stalks);
 - practically free from green berries;
 - practically free from dissimilar varieties of edible berries other than blueberries;
 - reasonably free from blemished berries;
 - reasonably free from undeveloped or mummified berries.

3.3.2 Analytical Requirements

Mineral impurities such as sand, grit, and silt shall be not more than 0.04 percent m/m on the whole product (berries and packing medium, if any).

3.3.3 Free-flowing Characteristics

When presented as "free-flowing" a tolerance of 10 percent m/m shall be allowed for berries which are stuck together and not easily separated in the frozen state. The sample for free "flowing" is the entire contents unit of the container or as large a quantity as practicable.

3.3.4 Definitions and tolerances for Visual Defects

3.3.4.1 Definitions

- (a) Extraneous Vegetable Material (EVM) means leaves or portions of the blueberry plant, or other similar vegetable material which is harmless.
- (b) Cap Stems (Stalks) - means the. immediate stem that attaches the blueberry to the plant, whether or not attached to the berry, and which is 2 mm, or greater in length.
- (c) Green Berries - means completely uncoloured berries or berries that have a green cast that predominates over the normal reddish purple colour of blueberries.
- (d) Dissimilar Varieties - means other edible berries that are distinctly different in colour or shape, which have definitely different internal characteristics than blueberries.
- (e) Blemished - means blueberries which show visible signs of damage by insects or by pathological injury.
- (f) Undeveloped or Mummified - means berries that are badly shrivelled, dried, or hard.

3.3.4.2 Standard Sample Size

The sample size for evaluating visual defects, including application of tolerances is 300 grams of drained berries. (8.3.2)

3.3.4.3 Tolerances for Visual Defects

Based upon examination of the standard sample unit as specified in 3.3.4.2 visual defects are classified as "minor" or "major" and assigned points in accordance with Table I. To be acceptable the sample unit shall not exceed the "Total Allowable Points" for the respective categories, including total, in the Table.

TABLE I
(Sample size 300 grammes)

Detect	UNIT OF MEASUREMENT	DEFECT CATEGORIES		
		Minor	Major	Total
(a) EVM	each piece <1 cm ² each piece 1 cm ² and larger	1	2	
(b) Cap Stems	each stem	1		
(c) Green Berries	each berry		2	
(d) Dissimilar Varieties	each berry		2	
(e) Blemished				
Slightly	each berry	1	2	
Materially	each berry			
(f) Undeveloped or Mummified	each berry		2	
TOTAL POINTS ALLOWABLE		15	8	15
Disintegrated, Badly Crushed, or Smashed		10% m/m		

3.4 Lot Acceptance for Quality Factors

3.4.1 Definition of "defective"

Any sample unit taken in accordance with the "Sampling Plans for Prepackaged Foods (AQL-6.5)" (Ref. No. CAC/SM 42-1969) shall be regarded as a "defective" for the respective characteristics as follows:

- (a) that exceeds the tolerance for mineral impurities (3.3.2);
- (b) that exceeds the tolerance for "free-flowing" (3.3.3);
- (c) that exceeds the "maximum total points for Visual defects" in any one or more of the categories in Table I (3.3.4.3); or that exceeds the tolerance for disintegrated, badly crushed, or smashed. Table I (3.3.4.3).

3.4.2 Lot Acceptance

A lot will be considered acceptable with respect to Quality Factors when the number of "defectives" as defined in paragraph 3.4.1 does not exceed the acceptance number (c) for the appropriate sample size as specified in the Sampling Plans for Prepackaged Foods.

In applying the acceptance procedure each "defective" (as defined in 3.4.1 subparagraphs (a) or (b) or (c)) is treated individually for the respective characteristic.

4 FOOD ADDITIVES

None permitted.

5 HYGIENE

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

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 The name of the food as declared on the label shall include "blueberries".

6.1.2 In conjunction or in close proximity to the word "blueberries" the packing medium: "with (name of sweetener and whether as such or as the syrup)".

6.1.3 The words "quick frozen" exempt that the term "frozen" may be applied in countries where this term is customarily used for describing the product processed in accordance with sub-section 2.2 of this standard.

6.2 List of Ingredients *

A complete list of ingredients shall be declared, in descending order of proportion in accordance with sub-section 3.2(c) and (d) of the General Standard for the Labelling of Prepackaged Foods (1969).

6.3 Net Contents

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

6.4 Name and Address

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

6.5 Country of Origin

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

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 Additional Requirements

Information for keeping and thawing of the product shall be given on retail packs.

6.8 Bulk Packs

In the case of quick frozen blueberries in bulk the information required in 6.1 to 6.6 must either be placed on the container or be given in accompanying documents, except that the name of the food accompanied by the words "quick frozen" (the term "frozen" may be used in accordance with sub-section 6.1.3 of this standard) and the name and address of the manufacturer or packer must appear on the container.

7. PACKING

7.1 Packing used for quick frozen blueberries must;

7.1.1 protect the organoleptic and other quality characteristics of the product;

7.1.2 protect the product against microbiological and other contamination;

7.1.3 protect the product from dehydration, and, where appropriate, leakage as far as technologically practicable;

7.1.4 not pass on to the product any odour, taste, colour or other foreign characteristics throughout the processing (where applicable) and distribution of the product up to the time of final sale.

8. METHODS OF EXAMINATION ANALYSIS AND SAMPLING

The methods of examination analysis and sampling described hereunder are international referees methods which are to be endorsed by the Codex Committee on Methods of Analysis and sampling.

8.1 Sampling

Sampling shall be carried out in accordance with the sampling Plans for pre-packaged Foods (AQL--6.5) (Ref. No. CAC/ RM 42-1969)

8.2 Thawing Procedure

According to the FAO WHO Codex Alimentarius standard Producers for Thawing of Quick Frozen Fruits and Vegetables (Ref. No. CAC/RM 32-1970).

8.3 Test Procedures

8.3.1. Net Weight - FAO/WHO Codex Alimentarius Standard Procedure for Net Weight Determination of Frozen Fruits and vegetables (Recommended International standard for Quick frozen peas, section 8.3, CAC/RS 41-1970 , Method CAC/RM 34-1970).

Drained Berries

8.3.2 "Drained berries" is determined by thawing the product until it is practically free from ice crystals and then draining on a screen -3 mesh/cm (8 mesh/inch) - for two minutes. The weight for product retained by the screen is "drained berries ", When dry sugar (s) is added to the berries it shall be removed with a gentle spray of water before draining.

8.4 Analysis

8.4.1 Total soluble solids - FAO/ WHO Codex Alimentarius Method- Determination of Total soluble content in Frozen Fruits (Ref. No. CAC/ RM 36-1970).

8.4.2 Mineral Impurities - Appendix I Document AGRI/WP.1/GF.3/CKP No.5 "Mineral Impurities in Quick Frozen Fruits and Vegetables" (to be endorsed).

REPORT OF THE WORKING GROUP ON THE SURVEY OF FROZEN FOOD
TEMPERATURES

(A) DURING LOCAL DISTRIBUTION AND (B) IN RETAIL CABINETS

BACKGROUND

1. At the 8th Session of the Joint ECE/Codex Group of Experts on Quick Frozen Foods held in Geneva from 30 April to 4 May 1973 it was agreed that the United Kingdom should convene a drafting group to formulate recommendations for dealing with problems met when attempting to recommend the optimum temperature at which quick frozen foods should be held during local distribution and in retail cabinets; the drafting group to consist of representatives from France, The Federal Republic of Germany, Denmark, Netherlands, Switzerland, Norway, USA and United Kingdom.
2. Prior to discussion by a working group a questionnaire was drawn up which sought information about temperature levels during local delivery (CX/QFF 74/3). Supplementary instructions for carrying out the survey (CX/QFF 74/4) and instructions for an optional survey of temperatures in retail cabinets and during distribution from depots to retail stores (CX/QFF 74/5) were also prepared. These papers were distributed to Codex Contact Points during March 1974 with a request that the survey should be carried out during April or May 1974 and the results returned to the United Kingdom for analysis by 30 June 1974.

RESPONSE TO THE SURVEYS

3. It was hoped that the survey would allow the working group to make recommendations based on analysis of a statistically significant sample. Unfortunately, only Australia, Czechoslovakia, Denmark, Netherlands, Switzerland and the United Kingdom supplied data in the form requested. In addition, Norway and the USA have supplied information; the Federal Republic of Germany has submitted data on the temperature of certain quick frozen foods in retail cabinets; France has drawn attention to information contained in the publication "Le Froid dans les Magasins de Vente des Denrées Périssables"; Canada has supplied extracts from the "Distribution Practices for Frozen Foods"; Japan has indicated that data 'will be submitted in due course and Australia hope to submit further data.
Most of the information was received well after the deadline.

SUMMARY OF INFORMATION RECEIVED

(a) During Local Distribution (*)

4. The figures received in response to the questionnaire are based on the warmest sample from the final delivery. It is not possible at this stage to elaborate on the background to the data, e.g the use of insulated vehicles, pre-cooling vehicles, type of refrigerant used during delivery, etc. Without exception the data shows that a considerable proportion of the samples in each country were warmer than -18°C at point of final delivery. The number of samples not complying with -15°C ranged from approximately 15-85%. Significant numbers of samples were also found to be warmer than -12°C.

(b) In Retail Cabinets (»)

5. The data again shows that a considerable proportion of samples in each country were found to be warmer than -18°C. This applies even for samples taken from other

than the top layer. The percentage of samples in the top layer not complying with -15°C limit ranged from approximately 30%-65%.

RECOMMENDATIONS

6. The Working Group, recognizing the possible deficiencies and the incompleteness of the data, considers that there are already sufficient indications to justify making recommendations to the Joint ECE/Codex Group of Experts on Standardisation of quick Frozen Foods.

(*) It must be stressed that time did not permit any detailed examination of the data received and the figures stated here are subject to vérification.

LOCAL DISTRIBUTION

7. It is recommended that paragraph 5.6 of the Draft Code of Practice should remain essentially as drafted except that additional emphasis should be given to the need to work towards -18°C. The revised wording would be as follows: "Transport of quick frozen foods for local distribution to retailers should be carried out in such a way that any rise in product temperature above -18°C is kept to a minimum". Footnote 1 would remain. The Working Group also considered but did not adopt the three possible alternative wordings to that recommended above:

- 1) A requirement for -18°C with a tolerance of 3°;
- 2) A requirement for -15°C with a tolerance of 3°;
- 3) A requirement that at the loading point, frozen food should have a sufficient cold reserve to achieve the temperature specified for retail cabinets.

It may be argued that a Code of Practice should indicate a target or objective rather than be a reflection of current practice. Furthermore, it may already be possible to comply with a requirement for -18°C with a tolerance given correct control and handling procedures. However, the Working Group agreed that while this may be possible in a small number of countries a codex Code of Practice should recognize the realities of the present, to the extent that these are compatible with the aims of the Codex Alimentarius, so that the Code would find acceptance by most countries. At the same time it should point the way ahead and recognize that with additional experience, stricter control of temperatures might be possible. As the Code will not prevent those countries who consider that their circumstances will already permit stricter control from doing so, the working Group agreed to submit its recommendation to the Joint ECE/Codex Group of Experts.

RETAIL CABINETS

8. The Working Group recommends that Section VI - RETAIL SALE of the Code of Practice should remain as drafted. Footnote 2 should also remain. The Working Group considered that the evidence of the data and information supplied showed that it would not be realistic at present to require that quick frozen food in retail cabinets should be maintained at -18°C. Defrosting cycles, other thermal factors like the influx of heat through radiation and the inability of retail cabinets to reduce the temperature of frozen food made such a requirement impracticable. The data also showed that it was quite impossible at present to require that frozen food in the top layer of a retail cabinet should be maintained at even -15°C. Furthermore, some members of the working Group questioned the need to specify such a requirement. They considered that the overriding criteria should be the quality of the product and that the length of time the product was kept in the cabinet was as relevant as the temperature at which it was kept. The working Group was informed that it had been found that quick-frozen food was kept in retail

cabinets for as long as 6 months and one member of the Group suggested that the measurements of individual cabinets seem to show that with modern equipment and correct handling procedures it should be possible in normal circumstances to maintain the temperature of food at -16°C. However, the working Group agreed that in view of the data submitted and the need for the Code of Practice to reflect the normal position in most countries such a requirement could not be recommended at this stage.

FURTHER INVESTIGATIONS

9. Coupled with the above recommendations the Working Group considers that countries which have not yet submitted data in response to *CX/QFS 74/3* and *CX/QFF 74/5* should be encouraged to do so and that countries which have submitted data should be asked to provide more detailed information on the circumstances and conditions in which the data was obtained. Consideration will be given to the possibility of the Working Group meeting again' before the next meeting of the Joint ECE/Codex Group of Experts to consider the matter further. The working Party agreed to recommend that further investigations be conducted by the members of the working Group and not to request comments at this stage from the IIP. or ISO.

EDITORIAL AMENDMENT

10. In order to draw a clearer distinction between paragraphs 5.1 to 5.5 of the Code of Practice and paragraphs 5.6 and 5.7, the Working Group recommends that the words "from warehouse cold store to warehouse cold store" should be inserted in paragraphs 5.1 to 5.5 as: appropriate.

DRAFT CODE OF PRACTICE FOR THE PROCESSING AND HANDLING OF QUICK
FROZEN FOODS

(Advanced to step 8 of the Procedure)

SECTION I - SCOPE AND PURPOSE

1.1 This Code is intended to provide guidelines to Codex Committees for elaborating codes of practice or standards for specific quick frozen product or groups of products.

* Detailed technical information may be found in a publication of the International Institute of Refrigeration, "Recommendations for the Processing and Handling of Frozen Foods".

1.2 This Code of Practice is intended to apply to quick frozen foods of all types which have been subjected to the process of quick freezing set out in Section III of this Code and which are offered for sale in the quick frozen state.

1.3 The recommendations are intended as a guide to assist in the production and handling of quick frozen foods in order to maintain their quality up to the time of final sale.

SECTION. II - RAW MATERIALS AND PREPARATION

2.1 Only sound and wholesome raw materials should be used for the quick freezing process. Because quick freezing cannot improve the original quality of the foods being treated, only products at an optimum level of freshness and maturity should be quick frozen.

2.2 The selected raw materials should be in prime condition when processing begins. In order to minimize the rate of natural deterioration when storage prior to processing is a necessary stage in stock holding, all raw materials should be stored, for a period dictated by actual trade and material needs, in conditions capable of maintaining a temperature range and degree of relative humidity appropriate to the raw materials concerned.

2.3 To minimize micro-biological activity pre-cooked foods intended for quick freezing should not be held in the temperature range +10°C to 60°C. They should be cooled as rapidly as possible in suitable pre-cooling equipment consistent with requirements of hygienic processing. whilst it is desirable that cooling and quick freezing should be carried out immediately, where this is not possible the food should be held at a temperature above 60°C (140°F) until cooling and subsequent quick freezing can take place.

SECTION. III - QUICK FREEZING

3.1 After preparation the product should be quick frozen without delay. The quick freezing process should be carried out in appropriate equipment in such a way as to minimize physical, biochemical and micro-biological changes.

3.2 To achieve this the freezing operation should be carried out in such a way that the range of temperature of maximum crystallization (for most products -1°C to -5°C) (+30°F to +23°F) is passed quickly,,

3.3 The process should not be regarded as complete unless and until the product temperature has reached -18°C (OOF) at the thermal centre after thermal stabilization.

3.4 Specific limits for freezing times and speeds are not given, as the requirements of both differ for various foodstuffs. Where necessary, specific indication should be made in individual food standards or Codes of Practice.

3.5 Effective measures should be taken to keep temperature rise to a minimum, after the quick freezing process and during handling and transport to cold storage.

3.6 The recognized practice of repackaging quick frozen products should be carried out only under controlled conditions.

SECTION IV - STORAGE

4.1 Cold stores should be operated so as to maintain a product temperature of -18°C (0°F) or lower with a minimum of fluctuation.

4.2 Excessive product temperature fluctuations either in range or frequency are undesirable. They may lead to serious dehydration in susceptible products and to other forms of quality deterioration. Although temperature fluctuations are generally less harmful at lower storage temperatures, variations greater than 2 Centigrade degrees (4 Fahrenheit degrees) in the air temperature should, so far as possible, be avoided.

4.3 Frequent temperature checks should be carried out, preferably with recording thermometers or devices that will continually monitor storage temperatures.

4.4 The air velocity in cold stores should be moderate and no higher than necessary to achieve sufficiently uniform temperatures within the store.

4.5 Products should be stacked so that air circulation is not impaired. No direct contacts with the walls - except in jacketed rooms - ceiling or floor should be allowed. The distance between the stored products and the walls, ceiling or floor should be at least 10 cm (4 in.).

4.6 A system of controlled stock rotation should be employed in cold stores.

SECTION V - TRANSPORT AND DISTRIBUTION

5.1 The transport of quick frozen foods from warehouse cold store to warehouse cold store should be carried out in equipment capable of maintaining and so operated as to maintain a product temperature of -18°C (0°F) or lower. Vehicles should be pre-cooled to $+10^{\circ}\text{C}$ (50°F) or lower prior to loading and should be equipped with devices to record temperatures during transport.

5.2 A temperature rise of the product during such transport from warehouse cold store to warehouse cold store to -15°C due to unforeseen circumstances may be tolerated but any product temperature higher than -18°C should be reduced as soon as possible either during transport or immediately after delivery to -18°C .

5.3 Loading into and unloading from vehicles and into and from stores should be as fast as practicable and the methods used should minimize product temperature rise.

5.4 During the transport from warehouse cold store to warehouse cold store as indicated in 5.1, frequent temperature checks should be carried out using methods of recording temperatures of the load visible outside of the vehicle.

5.5 During unloading the vehicle as indicated in 5.1 and before entering the cold store the product temperature should be checked.

5.6 Transport of quick frozen foods for local distribution to retailers should be carried out in such a way that any rise in product temperature above -18°C is kept to a minimum.¹

¹ It is intended to give further specifications of the temperature and its measurement as soon as additional experience makes this possible

5.7 A temperature rise of the product occurring during local transport as indicated in 5.6 should be reduced to -18°C as soon as possible after delivering. When this is not possible the product should be offered for sale as soon as possible.

SECTION VI - RETAIL SALE

6.1 Quick frozen foods should be offered for sale from refrigerated cabinets designed for the purpose.

6.2 The cabinets should be capable of maintaining and be so operated as to maintain a product temperature of -18°C (0°F) and should be equipped with a thermometer.

6.3 A rise in product temperature may be tolerated for short periods but the product temperature should not be allowed to become higher than -15°C (5°P), except for the top layer where a higher temperature may be tolerated.¹

¹ It is intended that precise temperature be specified in this section after a review of data obtained from additional experience

6.4 Warm air currents from the outside should not blow directly into the refrigerated space. Cabinets should be located so that the open display area is not subjected to abnormal radiant heat (e.g not in direct sunlight, under strong artificial light or in direct line with heaters). Cabinets should be covered at night and over the weekend. Defrosting cycles should be programmed in such a way that, as much as possible, defrosting takes place outside the normal shopping hours.

6.5 The contents of the cabinet should never be stocked outside the load line. Stocks should not be removed from and returned to the cabinet except when absolutely necessary.

6.6 Unpacked products are subject to risks of contamination and dehydration and should be stored and displayed in compartments separate from those used for packaged quick frozen foods.

6.7 Foods which are not quick frozen should not be placed in a cabinet which contains quick frozen foods. Prepackaged edible ices may, however, be kept in cabinets containing quick frozen foods.

6.8 Stocks should be carefully rotated to ensure that the products are sold on a "First in First Out" basis.

SECTION VII - PACKAGING AND LABELLING

7.1 The packaging should be designed to:

7.1.1 protect the organoleptic and other quality characteristics of the product;

7.1.2 protect the product against micro-biological and other contamination;

7.1.3 protect as far as practicable against dehydration, heat accumulation by radiation, and, where appropriate, leakage;

- 7.1.4 not pass on to the product any odour, taste, colour or other foreign characteristics, throughout the processing (where applicable) and distribution of the product up to the time of final sale.
- 7.2 Retail packages should be preserved intact up to the time of final sale.
- 7.3 Quick frozen foods should always comply with the provisions of Section 1, 2, 4 and 6 of the General Standard for the Labelling of Prepackaged Foods.
- 7.3.1 In addition the packages of quick frozen foods should bear clear indications as to the way to keep them from the time they are bought at the retailer to that of their use.

SECTION VIII - HYGIENE

- 8.1 The maintenance of good hygiene is important throughout the preparation, freezing process, transport and distribution right up to and including the time of final sale.
- 8.2 Quick frozen foods should always comply with the provisions of the General Principles of Food Hygiene and, where appropriate, with Codes of Hygienic Practice relevant to a particular food.

APPENDIX VIII

PROPOSED DRAFT STANDARD FOR QUICK FROZEN CAULIFLOWER (Retained at Step 3 of the Procedure)

1. SCOPE

This standard shall apply to quick frozen cauliflower of the species Brassica oleracea L. var. Botrytis L. as defined below and offered for direct consumption without further processing, except for repacking, if required. It does not apply to the product when indicated- as intended for further processing or for other industrial purposes.

2. DESCRIPTION

2.1 Product Definition

Quick frozen cauliflower is the product prepared from fresh, clean, sound heads of the cauliflower plant conforming to the characteristics of the species Brassica oleracea L. var. botrytis L., which heads may be trimmed and separated into parts,, and which are washed and sufficiently blanched to ensure stability of colour and flavour during normal marketing channels.

2.2 Process Definition

Quick frozen cauliflower is the product subjected to a freezing process in appropriate equipment and complying with the conditions laid down hereafter. This freezing operation shall be carried out in such a way that the range of temperature of maximum crystallization is passed quickly. The quick freezing process shall not be regarded as complete unless and until the product temperature has reached -18°C (0°F) at the thermal centre after thermal stabilization.

The recognized practice of repacking quick frozen products under controlled conditions is permitted.

2.3 Handling Practice

The product shall be handled under -such conditions as will maintain the quality during transportation, storage and distribution up to and including the time of final sale. It is recommended that during storage, transportation, distribution and retail, the product be handled in accordance with the provisions in the Code of Practice for the Processing and Handling of Quick Frozen Foods.

2.4 Presentation

2.4.1 Style

Whole - the whole, intact head, which is trimmed at the base and which may have attached small, tender, modified leaves.

Split - the whole head, cut vertically into two or more sections.

Clusters - segments of the head, with a portion of the secondary stem attached, measuring at least [25] mm across the top in the greatest dimension. Small, tender, modified leaves may be present or attached to the units.

Florets - segments of the head, divided into individual units, with trimmed portion of the adjoining stem, measuring at least [15]mm, but less than [25] mm across the top of the unit in the greatest dimension, small, tender, modified leaves may be present or attached to the units..

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.3 Optional Ingredients

- (a) salt
- (b) condiments, such as spices and herbs

3.4 Quality Factors

3.2.1 General Requirements

Quick frozen cauliflower shall be:

- of reasonably uniform white to cream colour over the tops of the units which may be slightly dull and have a tinge of green, yellow or pink. The stem or branch portions may have a tinge of green or blue;
- free from foreign flavour and odour;
- clean, practically free from sand, grit, insect contamination and other foreign material;
- reasonably free from dark, discoloured areas confined essentially to the surface ;
- reasonably free from damaged or blemished areas;
- reasonably free from fibrous or woody stems ;
- reasonably free from poorly trimmed units;
- reasonably compact and well developed;
- practically free from extraneous vegetable material;
- practically free from small pieces (cluster style).

3.2.2 Definitions and tolerances of Visual defects

3.2.2.1 Definitions

(a) Surface discolouration means grey, brown, green or similar discolouration confined essentially to the surface of the unit and impairing the appearance. Surface discolouration is classified as Light if it almost entirely disappears upon cooking; or Dark if it does not disappear upon cooking. Branches or stems with a bluish or greenish tint are considered normal colour and not "discolouration".

(b) Damage or blemish means pathological or insect injury with associated discolouration and which normally extends into the floret or bud cluster. This category of defect may be further classified as "minor", "major", or "serious" depending upon the extent to which the appearance is affected.

Minor means damage or blemish that affects the unit to only a slight degree;

Major means damage or blemish that is quite noticeable and materially affects the unit;

Serious means damage or blemish that is very noticeable and objectionable and of such nature that it would be customarily discarded under normal culinary preparation.

(c) Fibrous or woody means units that are tough, fibrous and contain noticeable tough strings.

(d) Poorly trimmed means units that have deep knife gouges in the bud or floret or which have a ragged appearance,, including large leaves.

(e) Not compact means units in which the florets are spreading, the flower clusters have a "ricey" appearance or which are very soft or mushy.

(f) EVM - It would be better to classify EVM as Minor and Major according to seriousness. For example, Minor would be green, coarse leaves of the cauliflower plant whereas Major would be discoloured leaves or vegetables material not common to the cauliflower plant. Small, tender, modified leaves of the cauliflower plant are not considered defects.

(g) Small piece means a portion of the floret or cluster 5 mm or less in greatest dimension.

3.2.2.2 Standard Sample Size

- 1 Whole head;
- 2 Split sections ;
- 50 Clusters or Florets

3.2.2.3 Tolerances for Visual Defects

Based upon examination of the standard sample unit as specified in 3.3.4.2 visual defects are classified as "minor" or "major" and "serious" and assigned points in accordance with Table I. To be acceptable the sample unit shall not exceed the "Total Allowable Points" for the respective categories, including total, in the Table.

TABLE I
Whole and Split Sections

	UNIT OF MEASUREMENT	DEFECT CATEGORIES			Total
		Minor	Major	Serious	
Surface discolouration	Any part of Whole Head or Split Section				
Light		1	2		
Dark					
Damage or Blemish					
Minor	"	1			
Major	"		2		
Serious	"			4	
Fibrous or Woody	"		[2]		
Poorly Trimmed	"		2		
Not Compact	"		2		
EVM					
Minor	"	1			
Major	"		2		
MAXIMUM TOTAL POINTS		12	6	4	12

¹ NOTE: In applying the defect rating for the styles of whole and split, each area of unit affected is considered a separate defect. For example, the head may have 2 separate areas that are excessively trimmed, 1 area of major blemish, 2 areas of minor blemish, and 3 areas of dark surface . discolouration -this would comprise a total of 8 defects which are rated as such using the appropriate defect category.

The following guide forms a part of the defect rating scheme:

- (a) For light surface discolouration, minor blemishes, poor trim and not compact:
 - Each area up to 12 cm² = 1 defect
- (b) For dark discolouration and major blemish:
 - Each area up to 6 cm² = 1 defect
- (c) For serious blemish:
 - Each area up to 6 cm² = 1 defect

TABLE II
Clusters or Florets

DEFECT	UNIT OF MEASUREMENT	DEFECT CATEGORIES			Total
		Minor	Major	Serious	
Surface discolouration Light Dark	Each bud Cluster or Floret	1	2		
Damage or Blemish Minor Major Serious	" " "	1	2	4	
Fibrous or Woody	"		[2]		
Poorly Trimmed	"	1			
Not Compact	"		2		
Small Piece	Each Piece	1			
EVM Minor Major	"	1	2		
MAXIMUM TOTAL POINTS		25	10	4	25

3.3 Lot Acceptance for Quality Factors

3.3.1 Definition of "defective"

Any sample -unit taken in accordance with the "Sampling Plans for Prepackaged Foods (AQL-6.5)" (Réf. No. CAC/RM 42-1969) shall be regarded as a "defective" for the respective characteristics as follows:

- (a) when it fails to meet the general requirements (3.2.1);

or

- (b) that exceeds the "maximum total points" in any one or more of the defect categories in Table I or Table II, as appropriate for the style (3.2.2.3).

3.3.2 Lot Acceptance

A lot will be considered acceptable with respect to Quality Factors when the number of "defectives" as defined in paragraph 3.2.1 does not exceed the acceptance number (c) for the appropriate sample size as specified in the Sampling Plans for Prepackaged Foods.

4. FOOD ADDITIVES

Citric acid as a processing aid when used in the blanching or cooling water.

5. HYGIENE

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

6. LABELLING

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

6.1 The Name of the Food

6.1.1 The name of the food as declared on the label shall include "cauliflower". The words "quick frozen" shall also appear on the label except that the term "frozen" may be applied in countries where this term is customarily used for describing the product processed in accordance with sub-section 2.2 of the standard.

¹ "frozen": This term is used as an alternative to "quick frozen" in some English speaking countries.

6.1.2 In addition, there shall appear on the label, in conjunction with, or in close proximity to, the word "cauliflower" the style, as appropriate: "whole", "split", "clusters", or optionally "florets" if the product complies with the size specification of 2.4.1. If the product complies with the style "florets" it may be optionally labelled "clusters".

6.2 List of Ingredients

A complete list of ingredients shall be declared in descending order or proportion in accordance with sub section 3.2 (c) of the General Standard for the Labelling of Prepackaged Foods (1969).

6.3 Net Contents

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

6.4 Name and Address

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

6.5 country of Origin

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

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 Additional Requirements

Information for keeping and thawing of the product shall be given on retail packs.

6.8 Bulk Packs

In the case of quick frozen cauliflower in bulk, the information required in 6.1 to 6.6 must either be placed on the container or be given in accompanying documents, except that the name of the food accompanied by the words "quick frozen" (the term "frozen" may be used in accordance with subsection 6.1.1 of this standard) and the name and address of the manufacturer or packer must appear on the container.

6.9 Directions for keeping

The packages of quick frozen foods should bear clear indications as to the way to keep them from the time they are bought at the retailer to that of their use.

7. PACKAGING

7.1 Packaging used for quick frozen cauliflower must:

- 7.1.1 Protect the organoleptic and quality characteristics of the product;
- 7.1.2 Protect the product from bacteriological and other contamination (including contamination from the packaging material itself) ;
- 7.1.3 Protect the product from dehydration and, where appropriate, leakage as far as technologically practicable; and
- 7.1.4 Not pass on to the product any odour, taste, colour or other foreign characteristics, throughout the processing (where applicable) and distribution of the product up to the time of final sale.

8. METHODS OF EXAMINATION, ANALYSIS AND SAMPLING

The methods of examination, analysis and sampling described hereunder are international referee methods which are to be endorsed by the Codex Committee on Methods of Analysis and Sampling.

8.1 Sampling

Sampling shall be carried out in accordance with the Sampling Plans for Prepackaged Foods (AQL-6.5) (Ref. NO.. CAC/RM 42-1969).

8.2 Thawing Procedure

According to the FAO/WHO codex Alimentarius Method: FAO/WHO Codex Alimentarius Standard Procedure for Thawing of Quick Frozen Fruits and Vegetables (Ref. No. CAC/RM 32-1970).

8.3 Cooking Procedure

8.3.1 According to the FAO/WHO codex Alimentarius Method: FAO/WHO Codex Alimentarius standard Procedure for cooking of Quick Frozen Vegetables (Ref. No. CAC/RM 33-1970).

8.3.2 cooking time for quick frozen cauliflower varies according to the style and variety characteristics. The following figures should be considered as a guideline:

Whole and Split	10-20 minutes
Clusters	6- 8"
Florets	3- 5"

8.4 Determination of Net weight

According to the FAO/WHO codex Alimentarius Method: Net Weight Determination of Frozen Fruits and Vegetables (Recommended International Standard for Quick Frozen Peas, Section 8.3, CAC/RS 41-1970, Method CAC/RM 34-1970).