



FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS  
ORGANISATION DES NATIONS UNIES POUR L'ALIMENTATION ET  
L'AGRICULTURE  
ORGANIZACION DE LAS NACIONES UNIDAS PARA LA AGRICULTURA Y  
LA ALIMENTACION

00100 Rome, Via delle Terme di Caracalla. Cables: FOODAGRI, Rome. Tel.  
5797



WORLD HEALTH ORGANIZATION  
ORGANISATION MONDIALE DE LA SANTÉ

1211 Genève, 27 Avenue Appia. Cables: UNISANTÉ, Genève. Tél. 34 60 61

ECONOMIC COMMISSION FOR EUROPE  
COMMITTEE ON AGRICULTURAL PROBLEMS  
Working Party on Standardization of Perishable Foodstuffs  
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JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX ALIMENTARIUS COMMISSION

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Eighth Session

REPORT OF THE SIXTH SESSION

OF THE

JOINT ECE/CODEX ALIMENTARIUS GROUP OF EXPERTS ON THE  
STANDARDIZATION OF QUICK FROZEN FOODS

Rome  
27-31 July 1970

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REPORT OF THE SIXTH SESSION OF THE JOINT ECE/CODEX GROUP OF EXPERTS ON THE STANDARDIZATION OF QUICK FROZEN FOODS

Rome, 27-31 July 1970

Introduction

1. The Joint ECE/Codex Alimentarius Group of Experts on Standardization of Quick Frozen Foods held its sixth session at FAO Headquarters, Rome, from 27-31 July 1970 under the chairmanship of Mr. R. Linden (Belgium).
2. The Group of Experts was welcomed on behalf of the Directors-General of FAO and WHO and the Executive Secretary of the Economic Commission for Europe by Mr. G.O. Kermodé, Chief, Joint FAO/WHO Food Standards Programme.
3. Representatives from 25 countries were present:

Argentina	of Germany	Spain
Austria	Greece	Sweden
Belgium	Hungary	Switzerland
Canada	Italy	Tunisia
Cuba	Japan	United Kingdom
Denmark	Netherlands	United States of America
Finland	Peru	Venezuela
France	Philippines	Yugoslavia
Federal Republic	Poland	

Observers were present from the following international organizations:

- the Association of Official Agricultural Chemists (AOAC)
- the European Federation of Importers of Dried Fruits, Preserves, Spices and Honey (FRUCOM)
- the International Institute of Refrigeration (IIR)

The list of participants is contained in Appendix I to this Report.

Election of Vice-Chairman and Rapporteur

4. The Group unanimously re-elected as its Vice-Chairman Mr. W. Orlowski (Poland). Mr. H.M. Goodall (United Kingdom) agreed to act as Rapporteur and was so appointed by the Group of Experts.

Adoption of Agenda

5. The Group of Experts adopted the provisional agenda for the session with a slight modification to the order of work.

Matters arising from the Report of the 7th Session of the Codex Alimentarius Commission

6. The Secretariat informed the Group that the Codex Committee on Food Labelling and the Commission had made certain amendments to the Standard for Quick Frozen Peas and that the Commission had then decided to advance the Standard to Step 9 of the Procedure for the Elaboration of World-wide Codex Standards.

The amended Standard was made available to the delegates to serve as a model for the other standards to be developed by the Group.

7. The Group was further informed that the Proposed Draft Standards for Quick Frozen Raspberries and, Spinach were advanced to Step 6 of the Procedure.
8. The Group was informed that the Commission had decided to permit as an alternative to "quick frozen" the use of the term "frozen" in those countries where this term is customarily used for describing products processed as defined in the process definition sections of the standards.
9. The Group took note that the Commission had decided to adopt the suggestion of the Codex Committee on Food Labelling in relation to Section 6.1 "The Name of the Food" in the Standard for Quick Frozen Peas. In order to restrict the names to the designations given, the text had been altered to read "the name of the food shall only include ...". The delegations of Denmark and the Netherlands considered that the word "only" should be maintained in all the Quick Frozen Food Standards which the Group was elaborating. However, the Group felt that this stipulation was too restrictive and decided that the word "only" should not be included.

#### Matters arising from the Report of the 7th Session of the Codex Committee on Food Hygiene

10. The Group was informed that the Codex Committee on Food Hygiene had decided to change the scope of the Draft Code of Hygienic Practice for Quick Frozen Fruits and Vegetable Products to cover Quick Frozen Fruit and Vegetable Juices as well. The title of the Draft Code was then changed to read as follows: "Draft Code of Hygienic Practice for Quick Frozen Fruits, Vegetables and their Juices".
11. The Group discussed the process definition which had been elaborated for inclusion in the Code of Hygienic Practice for Quick Frozen Fruits, Vegetables and their Juices by the Codex Committee on Food Hygiene:

"Quick frozen fruits, vegetables and their juices are those products which have been subjected to a freezing process carried out in such a manner that the range of temperatures of maximum crystallization is passed quickly and which thereafter have been reduced in temperature to -18°C (0° F) or lower at the thermal centre after thermal stabilization."

12. The Group expressed the opinion that a definition applicable to all commodities was preferable and decided that the process definition as it appeared in the Recommended Standard for Quick Frozen Peas should be used, namely:

"Quick frozen fruits, vegetables and their juices are the products 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 product shall be maintained at a low temperature such as will maintain the quality during transportation, storage and distribution up to and including the time of final sale,

The recognized practice of repacking quick frozen products under controlled conditions followed by the re-application of the quick freezing process as defined is permitted." (See paragraph 19 of this Report.)

### Matters arising from the Report of the 6th Session of the Codex Committee on Food Additives

13. It was brought to the attention of the Group of Experts that the Codex Committee on Food Additives, at its 6th Session, had requested Codex Commodity Committees to give due attention to the technological justification for the use of food additives. In this connection, the Group was informed that the Codex Alimentarius Commission, at its 7th Session, had adopted general principles for the use of food additives and that these were published as an Appendix to the Report of that Session.

### Matters arising from the Report of the 5th Session of the Codex Committee on Methods of Analysis and Sampling

14. The Group of Experts was informed that the Codex Committee on Methods of Analysis and Sampling at its 5th Session had:

- (a) endorsed the method proposed for Net Weight Determination in Quick Frozen Fruits and Vegetables;
- (b) referred back to the Group the Thawing and Cooking Procedures, considering that they did not constitute methods of analysis in the true sense;
- (c) endorsed the method of Determination of Alcohol-Insoluble Solids Content in Quick Frozen Peas, subject to further collaborative tests at the levels of alcohol-insoluble solids prescribed in the standard.

The delegation of the Netherlands presented an alternative method which would take less time and which would be in their opinion applicable to the levels of insoluble solids (19 - 23%) laid down in the Standard. The Group considered it premature at this stage to propose a change from the method in the Standard but agreed to circulate the alternative method to Governments for consideration. This alternative method is reproduced as Appendix VI to the Report.

### Consideration at Step 7 of the Draft Standard for Quick Frozen Strawberries

15. The Group had before it ALINORM 70/25 of which Appendix II contained the Draft Standard for Quick Frozen Strawberries. The Group also considered documents CX/OFF 70/6, containing the comments of the Federal Republic of Germany, the Netherlands and Poland and Conference Room Document 1, which contained the comments of the United States.

#### Scope

16. The Group decided to bring the last line of this section into line with the Standard for Quick Frozen Peas and therefore changed the expression "when labelled as intended" to read "when indicated as intended".

#### Description

##### Product Definition

17. The Group agreed to rearrange this section in accordance with the decision taken for quick frozen peas, moving sub-section 2.1 (b) dealing with sugars to section III on Essential Composition and Quality Factors, under "Optional Ingredients".

##### Process Definition

18. Some delegations felt that the word "thawing" in the last sentence of sub-section 2.1 (c) dealing with repacking should be preceded by the word "partial" as they

considered that the present text could be misunderstood to mean a complete thawing whereas what was actually meant was a possible rise in temperature. The delegation of Argentina objected to a repacking procedure whereby the product could be thawed and then re-frozen. The delegation of France suggested that the word "thawing" should be deleted as it was confusing as no exact indications were made regarding partial thawing. The Group agreed to this proposal and was of the opinion that the same amendment should be made to the Standard for Quick Frozen Peas. The last sentence of 2.1 (c) was therefore amended to read as follows:

"The recognized practice of repacking quick frozen products under controlled conditions followed by the re-application of the quick freezing process as defined is permitted."

#### Presentation

#### Style

19. The Group decided to re-arrange this sub-paragraph slightly in order to make it clear that no other styles other than those contained in the standard could be used. It was agreed that the style "cut" should be added. The Group also decided that strawberry puree should not be covered by the standard and that a reference to this effect should be included in the Scope section.

#### Sizing

20. The delegation of the Federal Republic of Germany proposed that a maximum limit of 10 mm between the largest and smallest berries should also be included for unsized berries. However, several delegations pointed out that it would be extremely difficult for practical reasons to apply such a proposal to unsized berries.

21. The Group agreed that in sub-paragraph 2.3.3 the minimum diameter for sized or unsized berries of Fragaria grandiflora L. should be increased from 12 mm to 15 mm.

22. The delegation of the United States stated that the sizing should be related to the label declaration and proposed the following specifications for size categories:

Small	15 mm or less
Medium	over 15 mm up to and including 30 mm
Large	over 30 mm

The Polish delegation proposed that the present text should remain unchanged but as an alternative suggested the following size categories:

Small	15 mm - 25 mm
Medium	25 mm - 35 mm
Large	over 35 mm

The delegation of Japan pointed out that in their country size grading was done by weight and that strawberries of less than 30 mm in diameter were usually graded as "small".

After a long discussion the Group decided not to introduce specifications for size categories into the standard and to retain the existing text.

## Essential Composition and Quality Factors

### Composition

#### Strawberries prepared with Sugars

23. The Group decided to delete the first line of this sub-paragraph as it considered that it was impossible to determine by analysis the amount of added sugar in the finished product. The delegation of Switzerland reserved its position as it considered it necessary that the manufacturer should know the maximum limit of permitted sugar. The Group agreed to replace the references to "° Brix", by "percentages".

#### Strawberries prepared with Syrup

24. The Group decided to alter this sub-paragraph in respect to the "° Brix" in the same way as in sub-paragraph 3.2.1.

### Organoleptic and other Characteristics

25. The Group decided to adopt the proposals of the Netherlands delegation as they appear in document CX/QFF 70/6, UNECE/AGRI/WP.1/661 with some small amendments. The text was amended accordingly.

#### Analytical Characteristics

26. The Group agreed to delete the phrase in brackets "Ash insoluble in HCl" as the reference method did not include treatment with HCl.

#### Definition of Defects

27. The Group agreed that definitions of some of the defects listed in section 3.3.1 was necessary and decided to adopt the proposals of the delegation of the Netherlands, as they appear in documents CX/QFF 70/6, UNECE/AGRI/WP.1/661 with some modifications. The relevant section was amended accordingly.

#### Tolerances for Defects

28. The Group agreed to base tolerances for defects on the drained fruit ingredient. The delegation of the USA proposed a method which involved first thawing the product until the surrounding media was thawed and then draining the syrup on a screen for a given period of time. The fruit which would be retained would be the "drained fruit ingredient". The Group agreed to re-word this section accordingly.

#### Tolerances for Sizes of Whole Strawberries

29. The Group agreed to delete the reference to weight as they considered that the tolerances should be calculated by number.

#### Classification of "Defectives"

30. The delegation of the Federal Republic of Germany proposed that the total tolerance of 20 should be broken down in the light of the amendments which had been made in the section on tolerances. The Group agreed to separate the various types of defects and the amended paragraph is contained in the report.

#### Lot Acceptance

31. The Group amended this paragraph in the light of the decisions it had taken for the previous paragraphs.

### Food Additives

32. Several delegations proposed that the limit for the additives listed of 400 mg/kg should be deleted. The delegation of Japan indicated that for the ascorbic acid it would prefer to have a limit of 600 mg/kg. The delegation of France stated that they were in principle against the addition of food additives to whole strawberries. The delegations of the Federal Republic of Germany and Poland considered that the existing text should remain. Some delegations pointed out that in their opinion the level of use could not be controlled and that therefore it was not necessary to prescribe a maximum level of usage. The Group agreed to delete the figure of 400 mg/kg and to make a reference to the effect that there should be no limit on the maximum level of use. The delegation of France reserved its position as it considered that there should be a maximum level for whole strawberries. The delegation of Poland reserved its position on the deletion of the reference to 400 mg/kg, as its national legislation contained such requirement for ascorbic and citric acids.

### Contaminants

33. The Committee agreed to delete this section in accordance with the relevant decision taken by the Commission at its Seventh Session, as pesticide residue tolerances were being established not on a food by food basis, but on a pesticide by pesticide basis.

### Hygiene

34. The Group took note that the title of the Draft Code had been amended as follows: "Code of Hygienic Practice for Quick Frozen Fruits, Vegetables and their Juices".

### Labelling

35. The Group reviewed the labelling section of the standard and agreed to a number of amendments:

- in accordance with the relevant decision of the Commission the reference to section 5 of the General Standard for the Labelling of Prepackaged Foods (1969) was deleted.

### The Name of the Food

36. This sub-section was reworded so as to indicate clearly that the style and the packing medium could appear on the label either in conjunction with "strawberries" or else in close proximity to it.

### Size Designation

37. It was decided to delete in this paragraph the reference to "small", "medium" and "large" as the standard included no detailed specifications for sizing. However, the section was amended to allow these or other declarations to be used to conform with the customary method of declaring size in the country in which the product is sold.

### List of Ingredients

38. The Group agreed to amend the existing wording to include the words "in accordance with sub-section 3.2 (c) and (d) of the General Standard for the Labelling of Prepackaged Foods (1969)", so that class names such as "syrup" could be used. The Group also decided that added water contained in syrup need not be declared as such.

### Additional Requirements

39. It was felt that, in line with the wording accepted for the Standard for Quick Frozen Peas, the references to code marking the date of production and to giving information regarding utilisation, should be deleted. A mandatory requirement should remain in the standard for indicating on retail packs information as to the keeping and thawing of the product.

### Methods of Analysis and Sampling

40. The Group was informed that the Codex Committee on Methods of Analysis and Sampling had not endorsed at its Fifth Session a method for mineral impurities (Ash insoluble in HCl) in Quick Frozen Strawberries and Quick Frozen Raspberries, and had referred the matter back to the Group for the choice of a method.

41. The Group of Experts agreed that the following methods of analysis should be referred to the Codex Committee on Methods of Analysis and Sampling for endorsement:

Mineral impurities (such as sand):	ISO Recommendation R 762 (1968) Determination of mineral impurities
Total soluble solids content:	Total soluble solids (Frozen Fruits), submitted by the USA (CX/QFF 70/3 June 1970)

42. The Group agreed to include by reference in the standard the General Method of Net Weight Determination applicable to Quick Frozen Fruits and Vegetables and endorsed by the Codex Committee on Methods of Analysis and Sampling at its Fifth Session.

### Methods of Examination

43. The Group agreed to include the Thawing Procedure in the standard, by reference.

### Status of the Standard

44. The Group agreed to advance the Draft Standard for Quick Frozen Strawberries to Step 8 of the Procedure.

### Proposed Draft General Code of Practice for Quick Frozen Foods

45. It was reported that following the decision of the Group at its Fifth Session in 1969 the United Kingdom had prepared a Draft General Code of Practice for Quick Frozen Foods, in consultation with delegates from Belgium, the Federal Republic of Germany and the Netherlands. The Draft had been distributed to the Group during the session under reference CX/QFF 70/7.

46. The United Kingdom stated that in drafting the document they had taken account of the provisions which had appeared in the draft of the General Standard for Quick Frozen Foods, together with technical information which was available from other bodies including the International Institute of Refrigeration. They stressed that the document had been drafted as an Advisory Code of Practice and was intended to be a guide in the satisfactory production and handling of quick frozen foods generally. There was general agreement that the draft was satisfactory in principle.

47. It was agreed that the document prepared by the United States of America on the method of checking temperature of quick frozen foods should be included in the Draft Code of Practice as an Appendix.

48. The Group decided that the draft should be sent to governments for comment at Step 3 of the Procedure, and that comments be sent direct to the author country (United Kingdom) by the end of December 1970.

#### Thawing and Cooking Procedures (Quick Frozen Fruits and Vegetables)

49. The Group examined the Thawing Procedure for Quick Frozen, Fruits and Vegetables and the Cooking Procedure for Quick Frozen Fruits and Vegetables which had both been referred back to the Group of Experts by the Codex Committee on Methods of Analysis and Sampling (see ALINORM 70/23, paragraph 50).

50. The Group agreed that the sections on Scope of these methods should make it clear that they were not intended to be used by the housewife but for the preparation of samples for the purposes of analysis and assessing the organoleptic characteristics.

51. The Group moreover agreed to the following amendments in the thawing procedure:

paragraph 3.3.2. the clause in brackets, should read: "(This method is applicable to some vegetables only)"

paragraph 7. Precautions

Delete the first section of this paragraph entitled "Selection of thawing method"

52. The Group considered that the texts as originally prepared by the USA delegation for these two methods were more appropriate than the now texts, as presented to the Group during the Session, because they made a distinction between Quick Frozen Fruits and Quick Frozen Vegetables. The Group therefore agreed that the Secretariat should publish these two methods on the basis of the USA text and taking into account the above mentioned amendments. The Group also agreed that these publications should be a guide for inspection and should clearly indicate which examination procedure should be followed.

#### Consideration of the Proposed Draft Standard for Quick Frozen Brussels Sprouts

53. The Group had before it document AGRI/WP.1/60 /Rev. 1 which contained the Proposed Draft Provisional Standard for Quick Frozen Brussels Sprouts. The Group had been unable to consider this Standard at its previous sessions owing to a heavy agenda and the Secretariat had been asked to revise the standard in accordance with decisions which had been taken at the 4th and 5th Sessions of the Group. The Group also had before it Conference Room Document No. 1 containing comments from the delegation of the United States.

#### Process Definition

54. As regards the section on Process Definition, the delegation of Argentina considered that repacking was impossible if the product was not at least partially thawed. The Argentine delegation took the view that even partial thawing was unacceptable and therefore reserved its position.

#### Size-Grading

55. Several delegations felt that the designation of sizes by number was not very meaningful and suggested that these references should be deleted. Some delegations suggested alternative proposals as regards the sizes mentioned in the standard. However, the Group agreed to maintain the existing text. It also agreed that

Governments should be asked to comment on this matter. Home delegations expressed the wish that the term "baby sprouts" could be used as it was a term synonymous in the trade with "very small". The Group decided to amend the Draft Standard in line with the Standard for Quick Frozen Peas.

#### Analytical Characteristics

56. The delegation of the United States proposed the deletion of this section as in their opinion there was a risk of partial regeneration of the enzyme systems during storage. As mention of an ensured stability of colour and flavour had already been made in the product definition, the Group agreed that this section was no longer necessary and deleted it accordingly.

#### Tolerances for Defects

57. The Group considerably changed the defects provisions in the standard in the light of proposals submitted by the Netherlands delegation at the Session. In view of the substantial nature of these amendments the new tolerances were placed in square brackets in order to draw the attention of Governments to them.

#### Optional Ingredients and Food Additives

58. The delegation of the Netherlands considered that the provisions in the Standard for Quick Frozen Peas relating to optional ingredients should also be included in this standard. The Group took note of the desire of the delegation of the Netherlands that Government comments should be sought on this matter at some future date.

#### Methods of Analysis, Sampling and Examination

59. The Group agreed to include in the standard by reference:

- Net Weight Determination (Codex Alimentarius method)
- Thawing Procedure (Codex Alimentarius method)
- Cooking Procedure (Codex Alimentarius method)

60. In addition to amending the standard in the light of the decisions taken on the Draft Standard for Quick Frozen Strawberries, the Group also decided to amend the standard in accordance with the proposals made by the delegation of the Netherlands as regards section 3 of the standard. The revised text appears in Appendix III to this Report.

#### Status of the Standard

61. The Group decided to send back the Proposed Draft Standard for Quick Frozen Brussels Sprouts to Step 3 of the Procedure and to seek further comments from Governments as regards the changes which had been made during the Session.

62. The delegation of the United Kingdom expressed concern that substantial amendments had been made to the Draft Standard and in particular to the Defects Sections, on the basis of proposals which a delegation had submitted at the Session. The United Kingdom delegation stated that delegations had not had an opportunity of studying these proposals in advance of the session. The United Kingdom view was that the amendments which had been made to the Defects Sections were not technically defensible and did not appear to offer adequate protection to the consumer. They appeared to permit, for example, packs with a very excessive percentage of discoloured and stained sprouts. The United Kingdom delegation expressed regret that the Group

had agreed that the standard should be circulated to Governments for further comments in what it regarded as an unsatisfactory form.

#### Consideration of the Proposed Draft Standard for Quick Frozen Peaches

63. The Group agreed that the Draft Standard should be amended in the light of the decisions which had been taken on the Draft Standard for Quick Frozen Strawberries.

##### Style

64. The Group decided to add the style "sliced" with the following definition: "pitted and cut into wedge shaped sectors".

##### Food Additives

65. The Group decided that the only limitation on the use of the permitted food additives should be that imposed by good manufacturing practices and therefore deleted the figures in this section. The Group noted that ascorbic acid and citric acid are added only to prevent discolouration and that sodium alginate is used as a stabilizer to ensure better distribution of peaches and syrup. The delegation of Switzerland reserved its position in relation to the use of sodium alginate since they took the view that there was no technological need for the use of this additive. The Group agreed to delete the provision relating to processing aids as they considered its inclusion to be unnecessary.

##### Declaration of Colour Type

66. Some delegations proposed that the declaration of colour type should be made mandatory. The delegations of Canada and Spain suggested that it was only necessary to mention the colour when it was other than "yellow". It was pointed out that this would discriminate against some countries whose peaches were only white. The Group decided to make the declaration of colour type mandatory either by illustration or by nomenclature.

67. Regarding the methods of analysis for the food additives included in the Draft Standard, the Group considered that, since all of them were permitted without limitation, there was no need for methods of analysis to be specified.

##### Status of the Standard

68. The Group decided to advance the standard to Stop 5 of the Procedure.

#### Consideration of the Proposed Draft Provisional Standard for Quick Frozen Bilberries

69. The Group decided to amend the Draft Standard in the light of the decisions which had been taken on the Draft Standard for Quick Frozen Strawberries.

70. The delegations of Canada and the USA considered that it would be more useful for the consumer if the labelling provisions in all the standards included information on preparation or utilisation of the product rather than "thawing". The Group decided to leave this provision unchanged as it had already been endorsed by the Commission. The delegation of the USA reserved its position in relation to this provision.

##### Status of the Standard

71. The Group decided to advance the standard to Step 5 of the Procedure.

#### Determination of Total Dry Matter in Quick Frozen Spinach

72. The Group of Experts was informed that in the Proposed Draft Standard for Quick Frozen Spinach at Step 6, there was a provision for total dry matter which should not be

lower than 5.5% and that at the 5th session of the Group the delegation of the Netherlands had agreed to provide a method for the determination of free water in spinach matter. The Netherlands delegation reported that they had been unable to develop such a method that would control the detection of added water.

73. The Group agreed that natural variations in water content of spinach were considerable, dependent on various factors, such as soil and climatic conditions, as well as time of year. The delegation of the United Kingdom stated that in order to have a standard which could be complied with in all conditions, a dry matter content at a level of 4.5 would have to be specified. A majority of the Group agreed that a dry matter specification was inappropriate and could be misleading. The Group suggested that the Netherlands, in collaboration with the USA should endeavour to elaborate a method of determining drained weight which could then be considered when the Draft Standard for Quick Frozen Spinach was considered at the 7th Session of the Group.

#### Other Business

74. The delegation of the Netherlands proposed that the draft General Code of Practice for Quick Frozen Foods should be given priority on the agenda for the 7th Session of the Group. The Group instructed the Secretariat to arrange the agenda accordingly.

#### Election of Chairman and Vice-Chairman

75. The Group unanimously re-elected Mr. R. Linden of Belgium to serve as Chairman and Mr. W. Orłowski of Poland to serve as Vice-Chairman until the end of the 7th Session.

#### Date and Place of Next Session

76. The Group noted that the next session of the Group would probably be held in the late autumn of 1971 in Geneva.

Summary Status of Work  
(prepared by the Secretariat)

1. CODES AND STANDARDS UNDER CONSIDERATION BY THE GROUP OF EXPERTS

QF Product Standard	Status (Step)			to be dealt with by	Document ALINORM-App.
	6th Session (1970)		held in abeyance or postponed		
	advanced	retained			
Strawberries	8			C'ssien 8th	71/25-H
Peaches	5			" 8th	71/25-IV
Bilberries	5			" 8th	71/25-v
Brussels Sprouts		3		QFF 7th	71/25-III
Gen. Code of Principles for QFF	3			Governments + QFF 7th	CX/QFF/70/7
Raspberries			6	Governments + QFF 7th	70/25-IV
Spinach			6	Governments + QFF 7th	70/25-v
					AGRI/WP.1
Blueberries			2	QFF 7th	608/Rev.1/1970
Green Beans			2	QFF 7th	610/Rev.1/1970
Broccoli			2	QFF 7th	611/Rev.1/1970
Cauliflower			2	QFF 7th	612/Rev.1/1970
Red Sour Cherries			2	QFF 8th	609/Rev. 1/1970*
Leeks			2	QFF 8th	613/Rev. 1/1970*

\* net yet distributed

2. SPECIFIC REFERRALS TO OTHER COMMITTEES

2.1 Codex Committee on Methods of Analysis and Sampling

- Mineral Impurities (such as sand):  
ISO Recommendation R762 (1968) Determination of Mineral Impurities
- Total Soluble Solids Content:  
Total Soluble Solids (Frozen Fruits)  
Submitted by U.S.A. (CX/QFF 70/3, June 1970)

for the following quick frozen fruits:

<u>Quick Frozen Strawberries</u>	(Annex II, Section 9.3.1 and 9.3.2 and para 41 of this Report)
<u>Quick Frozen Peaches</u>	(Annex IV, Section 9.3.1 and 9.3.2)
<u>Quick Frozen Bilberries</u>	(Annex V, Section 9.3.1 and 9.3.2)

2.2 Codex Committee on Food Additives

Quick Frozen Peaches (Annex IV, Section 4.1 and para 65 of this Report)

<u>Proposed Additives</u>	<u>Maximum Level of Use</u>
ascorbic acid	not limited
citric acid	
sodium alginate	

3. SPECIAL COMMENTS TO BE SENT TO AUTHOR COUNTRIES FOR THE PREPARATION OF WORKING PAPERS

3.1 Proposed Draft Code of Practice for Quick Frozen Foods (Document CX/QFF/70/7)

Comments on the Code with Appendix (Method of Checking Temperature of Quick Frozen Foods - Document QFF/MAS/2 (1969)) to be sent to:

- a) Chief Delegate of the UK;
  - b) (copy) Codex Alimentarius Commission Secretariat, Rome
- by 31 December 1970.

LIST OF PARTICIPANTS \*  
LISTS DES PARTICIPANTS  
LISTA DE PARTICIPANTS

ARGENTINA  
ARGENTINE

Dr. J. Vallega  
Consejero Agrícola  
Embajada de la Argentina  
Piazza dell'Esquiline 2  
Rome, Italy

Dr. R. Pastorisa  
Ingeniero Agrónomo  
Secretaría de Estado de Agricultura  
Inta-Castelar

AUSTRIA  
AUTRICHE

Dr. K- Woidich  
Lebensmittelversuchsanstalt  
Blaasstrasse 29  
A1190 Vienna

BELGIUM  
BELGIQUE  
BELGICA

R. Linden \*\*  
Chef de Travaux  
Centre Agronomique  
Gembloux  
J. L. Verlinden  
Ingénieur principal  
Ministère de l'Agriculture  
Rue du Méridien 10  
Bruxelles

CANADA

E.P. Grant  
Director, Fruit and Vegetable Division  
Canada Department of Agriculture  
Sir John Carling Building  
Ottawa

\* The Heads of Delegations are listed first; Alternates, Advisers and Consultants are listed in alphabetical order,  
Les chefs de délégations figurent en tête et les suppléants, conseillers et consultants sont énumérés par ordre  
alphabétique.

Figuran en primer lugar los Jefes de las delegaciones; Los Suplentes, Asesores y Consultores aparecen por  
orden alfabético.

\*\* Chairman  
President  
Présidente

CUBA	<p>J. Barreto Moreno          Sección Técnica del Frío          Ministerio Industria Alimenticia  <u>Marianao</u></p> <p>A.E. Alfonso Castañeda          Encargado de Negocios A.I.          Embajada de Cuba          Via A. Gramsci 36  <u>Rome, Italy</u></p>
<p>DENMARK          DANEMARK          DINAMARCA</p>	<p>E. Bache          Director, Civil Engineer          Danish Institute of Frozen Foods          Kastelsvej 11  <u>Copenhagen</u></p>
<p>FINLAND          FINLANDE          FINLANDIA</p>	<p>Prof. Toiva Rautavaara          Section d'horticulture          Agriculture Administration          Maatalaushalütu  <u>Helsinki 17</u></p>
<p>FRANCE          FRANCIA</p>	<p>Christian A.F. Bourcier          Inspecteur, Service de la Repression des          fraudes et du contrôle de la qualité          42bis rue de Bourgogne  <u>75-Paris 7ème</u></p> <p>René J. Chiche          Syndicat National des Fabricants et          Importateurs-Exportateurs de Products          Surgelés          3 rue de Logelbach  <u>Paris</u></p>
<p>GERMANY, FED. REP. OF          ALLEMANS, REP. FED.          ALEMANIA, REP. FED.</p>	<p>Dr. Elisabeth Hufnagel          Oberregierungsrätin          Ministry of Youth, Family and Health          Deutschherrenstrasse 87  <u>D-53 Bonn-Bad Godesberg</u></p> <p>Prof. Dr. Hans J. Bielig          Institute of Fruit and Vegetable Technology          Technische Universität  <u>Berlin (West)</u></p> <p>Dipl. Ing. J. Gutschmidt          Bundesforschungsanstalt für          Lebensmittelfrischhaltung Engesser Strasse 20  <u>Karlsruhe</u></p> <p>Dr. Harald G. Haupt          Bundesverband der Obst-und          Gemüseverwestungsindustrie          Quantiusstrasse 14  <u>D-53 Bonn</u></p>

	Rudolf W. auf dem Hövel Unilever-House <u>D-2 Hamburg 36</u>
GREECE GRECE GRECIA	Constantin Tsibouris Attaché Agricole Arabassade de Grèce Viale Liegi 33 <u>00193 Rome, Italy</u>
HUNGARY HONGRIE HUNGRIA	Mrs. Olga Kovacs Chem. Engineer c/o Magyar Hütöpar Dorottya-u. 1 <u>Budapest V</u>  Dr. Károly Gergely c/o Magyar Hütöpar Dorottya-u. 1 <u>Budapest V</u>  Dr. Charles Kismarton Head of Food Control Laboratory I. Rudas L. 4 <u>Miskolc</u>
ITALY ITALIE ITALIA	Prof. R. Andreotti Capo Reparto Stazione Sperimentale Industrie Conserve Alimentari Via Tanara 33 <u>Parma</u>  Curzio Caneva Conseiller Ministero dell'agricoltura <u>Rome</u>  Dr. G. Crivelli Researcher I.V.T.P.A. Via Celoria 2 <u>20133 Milano</u>  Dr. V. Dileo Medico Provinciale Direzione generale per l'Igiene degli Alimenti e la Nutrizione Ministero della Sanità Pzza. Marconi - Palazzo Italia <u>Rome</u>  Dr. G. Luft Dirigente Industrials in rappresentanza AIIPA Via P. Verri, 8 <u>Milan</u>

JAPAN  
JAPON

Satoshi Ohara  
Chief, Vegetable and Flower Division  
Ministry of Agriculture and Forestry  
Tokyo

Koya Mimura  
First Secretary  
Embassy of Japan  
Via Virginio Orsini, 24  
Rome

Toyozo Soma  
Adviser  
Japan Frozen Food Association  
c/o Nipon Reizo K.K.  
3-8 Minatochoy Chyoku  
Tokyo

Yoshihiro Enomoto  
Japan Frozen Foods Inspection Corp.  
1-7 Uuraku-Cho., Chiyoda-Ku  
Tokyo

NETHERLANDS  
PAYS-BAS  
PAISES BAJOS

J.P.L.L.A. Burg  
Ministry of Agriculture  
I van der Boschstraat 4  
The Hague

Drs. W.G. Aldershoff  
Inspecteur Volksgezondheid  
Staatstoezicht Volksgezondheid  
Hoofdinspectie Levensmiddelen  
Dr. Reyersstraat 10  
Leidschendam

M. J.M. Osse  
Ministry of Agriculture and Fisheries  
Agricultural Industries and International Trade  
1 van der Boschstraat 4  
The Hague

Ir. T. van Hiele  
Director, Sprenger Institute  
Haagsteeg 6  
Wageningen

J. van Waardenberg  
Produktschap voor Groenten en Fruit  
Bezuindehoutse weg 153  
The Hague

Daniel M. van Ysselstein  
Technical Director IGLO N.V.  
Quick Freezing Plant  
Nijenoord 1A  
Utrecht

PERU  
PEROU

Carlos Gamarra-Vargas  
Permanent Representative of Peru  
Peruvian Embassy to the Holy See  
Viale Bruno Buozzi 28  
Rome

PHILIPPINES  
FILIPINAS

Miss Leoncia Serrano  
Attaché  
Philippine Embassy  
12 Via San Valentino  
Rome

POLAND  
POLOGNE  
POLONIA

Dr. F. Morawski  
Chief of Section  
Ministry of Foreign Trade  
Quality Inspection Office  
9 Stepinska  
Warsaw

Waclaw Orłowski  
Quality Inspection Office  
Ministry of Foreign Trade  
9 Stepinska  
Warsaw

Dipl. Ing. A. Stepkowski  
Cold Storages and Freezing Plants Inc.  
Szkolna 2/4  
Warsaw

SPAIN  
ESPAGNE  
ESPANA

Dr. Luís Esteban  
Ingeniero Agrónomo  
Director del Servicio de Normalización  
Ministerio de Comercio  
Paseo de la Castellana 16  
Madrid

Dr. José Carballo  
Ingeniero Agrónomo, Experto de  
Subcomisión de Código Alimentario  
Instituto de Investigaciones Agronómicas  
Avenida Puerta de Hierro  
Madrid

Dr. Mariano Blasco  
Ingeniero Agrónomo  
Subdirección General de Industrias Agrarias  
Ministerio de Agricultura  
Madrid 7

SWEDEN  
SUEDE  
SUECIA

U. Rambech  
Senior Food Technologist  
Nordreco A.B.  
Bjuv

SWITZERLAND  
SUISSE  
SUIZA

Ing. Chim. F. Jeanrichard  
NESTEC S.A.  
CH-1814 La Tour de Peilz  
Case Postale 88

Hans-Ulrich Pfister  
Chef de Section  
Régie fédérale des alcools  
Länggasstrasse 31  
3012 Berne

TUNISIA  
TUNISIE  
TUNEZ

Dr. A. Amaraoui  
Ingenieur des Industries Alimentaires  
Institut National de Nutrition  
120 Avenue de la Liberté  
Tunis

UNITED KINGDOM  
ROYAUME-UNI  
REINO UNIDO

H.M. Goodall  
Chief Executive Officer  
Ministry of Agriculture, Fisheries and Food  
Greet Westminster House  
Horseferry Road  
London S.W.1

John D. Croker  
Section Secretary  
Food Manufacturers Federation  
4 Lygon Place  
London S.W.1

John Crook  
Technical Manager  
National Association of Frozen Food Producers  
Associated Fisheries and Foods Ltd  
Brighton St., Hull

Blair Larkey  
Company Secretary  
c/o Birds Eye Foods Ltd.  
Station Avenue  
Walton-on-Thames  
Surrey

L. Patrick Matthews  
Assistant Director  
Food Manufacturers Federation  
4 Lygon Place  
London S.W.1

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

L.M. Beacham  
Director Division of Food Chemistry and  
Technology  
Food and Drug Administration  
Washington D.C. 20204

F. Dunn  
Chief, Processed Products Standardization and  
Inspection Branch  
Consumer and Marketing Service  
Fruit and Vegetable Division  
US Department of Agriculture  
Washington D.C. 20250

John W. Farquhar  
Director of Research and Technical Services  
American Frozen Food Institute  
919 - 18th Street N.W.  
Washington D.C. 20006

Leonard S. Fenn  
Director of Technical Services  
American Frozen Foods Instituté  
919-18th Street N.W.  
Washington D.C. 20006

Walter L. Smith  
Assistant Manager  
Stayton Canning Co.  
210 Shaff Road  
Stayton, Oregon 97383

VENEZUELA

Rodolfo Molina Duarte  
Primer Secretario  
Embajada de Venezuela  
Viale Bruno Buozzi, 109  
Rome, Italy

YUGOSLAVIA  
YOUGOSLAVIE

Dr. G. Niketić  
Assistant Professor  
Faculty of Agriculture  
Nemanjia 6  
Zemun-Beograd

INTERNATIONAL ORGANIZATIONS  
ORGANISATIONS INTERNATIONALES  
ORGANIZACIONES INTERNACIONALES

ASSOCIATION OF OFFICIAL  
AGRICULTURAL CHEMISTS (AOAC) Lowrie M. Beacham  
Director, Division of Food Chemistry and  
Technology  
Food and Drug Administration  
Washington D.C. 20204, U.S.A.

EUROPEAN FEDERATION OF  
IMPORTERS OP DRIED FRUITS,  
PRESERVES, SPICES AND HONEY  
(FRUCOM) Jan J. Mertens  
Vice President  
30 St. Amelbergalei  
B-2120 Schoten, Belgium

INRERNATIONAL INSTITUTE OF  
REFRIGERATION T. van Hiele  
International Institute of Refrigeration  
177 Boulevard Malasherbes  
75-Paris 17ème, Prance

DRAFT STANDARD FOR QUICK FROZEN STRAWBERRIES

(To be submitted to the Codex Alimentarius Commission at Step 8 of the Procedure)

1. SCOPE

This standard shall apply to quick frozen strawberries (excluding quick frozen strawberry puree) of the species Fragaria grandiflora L. and Fragaria vesca L. as defined below and offered for direct consumption without further processing, except for size grading or 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 strawberries are the product prepared from fresh, clean, sound, ripe and stemmed strawberries of firm texture conforming to the characteristics of Fragaria grandiflora L. and Fragaria vesca L.

2.2 Process Definition

Quick frozen strawberries are the product subjected to a 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 product shall be maintained at a low temperature such as will maintain the quality during transportation, storage and distribution up to and including the time of final sale.

The recognized practice of repacking quick frozen products under controlled conditions followed by the re-application of the quick freezing process as defined is permitted.

2.3 Presentation

2.3.1 Style

2.3.1.1 Quick frozen strawberries shall be presented as whole, halved, sliced or cut.

2.3.1.2 Quick frozen strawberries 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).

2.3.2 Sizing

2.3.2.1 Whole strawberries may be presented as sized or unsized.

2.3.2.2 If whole strawberries are size graded they shall be reasonably uniform within each package such that the diameter of the largest berry does not exceed the diameter of the smallest berry by more than 10 mm, measured according to the maximum diameter.

2.3.2.3 In the case of Fragaria grandiflora L. the maximum diameter of each berry whether sized or unsized shall not be less than 15 mm.

### 3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

#### 3.1 Optional Ingredients

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

#### 3.2 Composition

##### 3.2.1 Strawberries 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%, as determined by refractometer at 20°C.

##### 3.2.2 Strawberries 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%, as determined by refractometer at 20°C.

#### 3.3 Quality Factors

##### 3.3.1 Organoleptic and other characteristics

Quick frozen strawberries shall be:

- (a) of good colour;
- (b) free from foreign flavour and odour;
- (c) intact if whole, and not materially disintegrated;
- (d) intact if halved, sliced or cut and not seriously affected by disintegrated fruit;
- (e) clean, practically free from sand and grit and free from other foreign material;
- (f) practically free from stalks, parts of stalks, calyces, leaves and other extraneous vegetable material;
- (g) sound, practically free from mould, insect bites and other blemishes;
- (h) normally developed;
- (i) of similar varietal characteristics in each package;
- (j) when presented as free-flowing, practically free from berries adhering to one another (whole, halved, sliced or cut), which cannot be easily separated by hand without damage when in a frozen state; not icy.

##### 3.3.2 Analytical characteristics

Mineral impurities such as sand not more than 0.1% m/m on a whole product basis.

#### 3.4 Definition of Defects

- |                       |   |
|-----------------------|---|
| Partially uncoloured  | - 25%-75% of the outer surface area without the colour, characteristic of the variety     |
| Completely uncoloured | - 75% or more of the outer surface area without the colour, characteristic of the variety |
| Disintegrated         | - broken, crushed or smashed  |

Stalks or parts of stalks	- if each greater than 3 mm in one dimension
Blemished	- showing visible signs of pest attack or pathological or physical injury
Misshapen	not normally developed and more in particular containing hard parts in the fruit flesh

### 3.5 Tolerances

#### 3.5.1 Tolerances for defects

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

(a) stalks or parts of stalks each greater than 3 mm in one dimension (*)	3 by number
(b) calyces (*)	3 cm <sup>2</sup>
(c) other extraneous vegetable material (*)	3 cm <sup>2</sup>

(\*) Any of the material in (a), (b) or (c) found in the drained syrup shall be added to the drained fruit ingredient for the purpose of applying the tolerances.

(d) completely uncoloured whole berries	1 by number
(e) partially uncoloured whole berries	5% m/m
(f) disintegrated whole berries	5% m/m
(g) Blemished	5% m/m
(h) misshapen whole berries	2% m/m
(i) dissimilar varieties	6% m/m

– The drained fruit ingredient 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 fruit retained on the screen is "drained fruit ingredient". (\*)

– When dry sugar is added to whole berries after freezing, the dry sugar shall be washed off with water before draining.

(\*) Any of the material in (a), (b) or (c) found in the drained syrup shall be added to the drained fruit ingredient for the purpose of applying the tolerances.

#### 3.5.2 Tolerances for sizes of whole strawberries

(a) When presented as sized, a tolerance of 10% by number is allowed for fruit that fail to meet the requirements of paragraph 2.3.2.2.

(b) In the case of Fragaria grandiflora L. whether sized or unsized, the amount of fruit having a maximum diameter of less than 15 mm (paragraph 2.3.2.3) shall not exceed 5% by number.

### 3.6 Classification of "Defectives"

Any sample unit from a sample taken in accordance with the Sampling Plans for Prepackaged Foods (1969) shall be regarded as "defective" when:

(a) the total soluble solids of the sample unit is outside the range specified in 3.2.1 or 3.2.2 as appropriate; or

- (b) any one of the organoleptic and other characteristics under 3.3.1 are not complied with; or
- (c) (i) any one of the defects listed under 3.5.1 is present in more than twice the amount of the specified tolerance for the individual defect; or
  - (ii) the total of defects (e) to (i) exceeds 15% for whole strawberries; or
  - (iii) the total of defects in (g) and (i) exceeds 12% for halved, sliced or cut strawberries; or
- (d) the tolerance for sizes of whole strawberries as listed in 3.5.2 is exceeded.

### 3.7 Lot Acceptance

A lot is considered acceptable when the number of such defectives as specified in (a) or (b) or (c) or (d) in 3.6 when treated independently of each other does not exceed the acceptance number (c) of the Sampling Plans for Prepackaged Foods (1969)

### 4. FOOD ADDITIVES

<u>Additive</u>	<u>Maximum level of use</u>
Ascorbic acid	not limited
Citric acid	

### 5. HYGIENE

It is recommended that the product covered by the provisions of this standard be prepared in accordance with the Codex Alimentarius Code of Hygienic Practice for Quick Frozen Fruits, Vegetables and their Juices.

### 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 "strawberries" or in the case of Fragaria vesca L., "wild strawberries" or "alpine strawberries".
- 6.1.2 In addition, there shall appear on the label in conjunction with, or in close proximity to, the word "strawberries":
  - (a) the style, as appropriate: "halves", "slices" or "cut";
  - (b) the packing medium: "with (name of sweetener and whether as such or as the syrup)".
- 6.1.3 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.

#### 6.2 Size Designation

If a term designating the size of the strawberries is used:

- (a) it must be supported by a correct graphic representation on the label of the size range to which the strawberries predominantly conform; and/or

- (b) by a statement of the predominant range of the maximum diameter of the strawberries in millimeters, or fractions of an inch in those countries where the English system is in general use; and/or
- (c) it shall conform to the customary method of declaring size in the country in which the product is sold.

### 6.3 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)

### 6.4 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.

### 6.5 Name and Address

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

### 6.6 Country of Origin

- 6.6.1 The country of origin of the product shall be declared if its omission would mislead or deceive the consumer.
- 6.6.2 When the product undergoes processing in a second country which changes its nature, the country in which the processing is performed shall be considered to be the country of origin for the purposes of labelling.

### 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 strawberries 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 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 strawberries must

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

8. METHOD OF EXAMINATION

- 8.1 Thawing Procedure for Quick Frozen Fruit and Vegetables (Codex Alimentarius method).

9. METHODS OF ANALYSIS AND SAMPLING

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

9.1 Sampling

Sampling shall be carried out in accordance with the Sampling Plans for Prepackaged Foods (1969)

9.2 Test Procedure

Net weight determination of Frozen Fruits and Vegetables (Codex Alimentarius method, provisionally in Appendix IV to ALINORM 70/23) (endorsed).

9.3 Analysis

- 9.3.1 Determination of mineral impurities, such as sand: ISO Recommendation R 762 (1968): Determination of mineral impurities (to be endorsed).

- 9.3.2 Determination of total soluble solids content: Total soluble solids (frozen fruits), submitted by the U.S. delegation (CX/QFF/70/3, June 1970 (to be endorsed)).

PROPOSED DRAFT STANDARD FOR QUICK FROZEN BRUSSELS SPROUTS  
(Retained at Step 3 for a second round of comments)

1. SCOPE

This standard shall apply to quick frozen Brussels sprouts of the species Brassica oleracea L. var. gemmifera (DC) O.E. Schulz as defined below and offered for direct consumption, without further processing except for size grading or 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 Brussels sprouts are the product prepared from the fresh, clean, sound, whole ancillary buds picked from the stem of the plant and which have been trimmed, sorted, washed and sufficiently blanched to ensure adequate stability of colour and flavour during normal marketing cycles and which conform to the characteristics of Brassica oleracea L. var. gemmifera (DC) O.E. Schulz.

2.2 Process Definition

Quick frozen Brussels sprouts 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 product shall be maintained at a low temperature such as will maintain the quality during transportation, storage and distribution up to and including the time of final sale.

The recognized practice of repacking quick frozen products under controlled conditions followed by the re-application of the quick freezing process as defined is permitted.

2.3 Presentation

2.3.1 Sizing

2.3.1.1 Quick frozen Brussels sprouts may be presented sized or unsized.

2.3.1.2 If Brussels sprouts are size graded they shall conform to the, following system of specifications for the size names:

<u>Size designation</u>	<u>Round hole sieve size in mm</u>
extra small	up to 22
very small	up to 26
small	up to 32
medium	up to 36
large	over 36

### 3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

#### 3.1 Quality Factors

##### 3.1.1 Organoleptic and other characteristics Quick frozen Brussels sprouts shall be:

- (a) not discoloured;
- (b) free from foreign taste and odour;
- (c) firm, whole, with normally closed buds;
- (d) clean, practically free from sand and grit and free from other foreign material;
- (e) properly trimmed;
- (f) practically free from extraneous vegetable material (EVM);
- (g) practically free from damage by insects or disease;
- (h) of similar varietal characteristics in each package.

#### 3.2 Definition of Defects

- (a) defect in colouring:  
more than 50% of outer surface of the sprout yellow or otherwise discoloured;
- (b) defect in firmness:  
fully opened buds;
- (c) perforated leaves: (by insects or otherwise)  
one or more perforations per sprout with a diameter larger than [ 6 ] mm;
- (d) stained sprouts:  
if more than 50% of the outer surface of the sprout is stained (spotted) with clearly noticeable black/brown spots;
- (e) not::  
buds which are rotten inside and/or outside;
- (f) loose leaves:  
detached leaves from the bud;
- (g) extraneous vegetable material (EVM)  
stem ends and vegetable material not belonging to the sprout buds;
- (h) poorly trimmed units:
  - (i) units in which the butt end is not trimmed smoothly or in which the butt end extends more than 10 mm below the point of attachment of the outer leaves;
  - (ii) the appearance of the unit is materially damaged by the excessive cutting into the head.

#### 3.3 Tolerances

##### 3.3.1 Tolerances for defects

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

### Defects

- (a) colour
- (b) firmness
- (c) perforated leaves
- (d) stained sprouts
- (e) rot
- (f) loose leaves
- (g) EVM
- (h) poorly trimmed units

### Tolerances

- [10]% m/m
- [5]% m/m
- [10]% m/m
- [5]% m/m
- [1]% m/m
- [2]% m/m
- [0.5]% m/m
- [15]% m/m

#### 3.3.2 Tolerances for sizes

If size graded, the product shall contain not less than 80% either by number or mass of Brussels sprouts of the declared size or smaller sizes. It shall contain no Brussels sprouts of sizes larger than the next two larger sizes nor more than 20% either by number or mass of Brussels sprouts of the next two larger sizes, if such there be. Not more than one quarter of these Brussels sprouts whether by number or mass, shall belong to the larger of the next two sizes.

#### 3.4 Allowances for Defects

Any sample unit from a sample taken in accordance with the Sampling Plans for Prepackaged Foods (1969) shall be regarded as "defective" when:

- (a) any one of the organoleptic and other characteristics under 3.1.1 is not complied with; or
- (b) any of the defects listed under 3.2 is present in more than twice the amount of the specified tolerances for the individual defect as listed under 3.3.1; or
- (c) if the total of 3.3.1 (a) to (h) exceeds [25% m/m].

#### 3.5 Lot Acceptance

A lot is considered acceptable when the number of such "defectives" as specified in (a) or (b) or (c) in 3.4 does not exceed the acceptance number (c) of the Sampling Plans for Prepackaged Foods (1969)

#### 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 Code of Hygienic Practice for Quick Frozen Fruits, Vegetables and their Juices.

#### 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 "Brussels sprouts".
- 6.1.2 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.

- 6.1.3 Where a statement of size is made, either the sieve size or the words "extra small", "very small", "small", "medium" or "large", as appropriate, shall be indicated.

6.2 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.

6.3 Name and Address

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

6.4 Country of Origin

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

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

6.5 Additional Requirements

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

6.6 Bulk Packs

In the case of quick frozen Brussels sprouts in bulk the information required in 6.1 to 6.4 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 Brussels sprouts must

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

8. METHODS OF EXAMINATION

- Thawing Procedure (Codex Alimentarius method)
- Cooking Procedure (Codex Alimentarius method)

9. METHODS OF ANALYSIS AND SAMPLING

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

9.1 Sampling

Sampling shall be carried out in accordance with the Sampling Plans for Prepackaged Foods (1969).

9.2 Test Procedure

Net weight determination (Codex Alimentarius method) (endorsed).

PROPOSED DRAFT STANDARD FOR QUICK FROZEN PEACHES

(To be submitted to the Codex Alimentarius Commission at Step 5 of the Procedure)

1. SCOPE

This standard shall apply to quick frozen peaches of the species Prunus persica Sieb. et Zucc 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 are the product prepared from fresh, clean, sound, ripe and peeled peaches of firm texture conforming to the characteristics of Prunus persica Sieb. et Zucc, but excluding nectarine varieties.

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 product shall be maintained at a low temperature such as will maintain the quality during transportation, storage and distribution up to and including the time of final sale.

The recognized practice of repacking quick frozen products under controlled conditions followed by the re-application of the quick freezing process as defined is permitted.

2.3 Presentation

2.3.1 Colour type

Peaches of distinct varietal differences may be designated according to the colours 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.

2.3.2 Style

Quick frozen peaches may be presented in the following styles:

- (a) whole - unpitted whole peaches;

- (b) halves - pitted and cut into two approximately equal parts;
- (c) quarters - pitted and cut into 4 approximately equal parts;"
- (d) sliced - pitted and cut into wedge shaped sectors;
- (e) pieces - (regular or irregular) - pitted and comprising regular or irregular shapes and sizes;
- (f) diced - pitted and cut into cube-like parts.

### 3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

#### 3.1 Optional Ingredients

Sugars (sucrose, invert sugar, 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 be not 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 not more than 25% nor less than 15% as determined by refractometer at 20°C.

#### 3.3 Quality Factors

##### 3.3.1 Organoleptic and other characteristics

Quick frozen peaches shall be:

- (a) clean and free from foreign material;
- (b) free from foreign flavour and odour;
- (c) of a colour typical of the flesh of the ripe fruit of the particular varietal type and which is practically free from green or dark discoloration;
- (d) of a firm, but tender texture characteristic of ripe fruit and practically free from immature or fibrous fruit
- (e) practically intact for the particular styles and not materially disintegrated or altered in shape due to excessive trimming or mechanical damage;
- (f) sound, practically free from insect damage and other blemishes;
- (g) practically free from stalks or parts of stalks, leaves and other extraneous vegetable material (EVM);
- (h) practically free from peel fragments, whether adhering to the flesh or loose;
- (i) practically free from .. whole pits in halved style and perceptibly hard sharp pit fragments in all styles;
- (j) of similar varietal characteristics in each package.

#### 3.4 Tolerances

##### 3.4.1 Tolerances for defects

Based on a sample of 500 grammes the drained fruit ingredient of the product shall have not more than the following:

	<u>Defect</u>	<u>Tolerances</u>
(a)	units which are partially green or discoloured	15% m/m
(b)	units which are excessively ripe and pulpy, or disintegrated	5% m/m
(c)	fibrous units	2% m/m
(d)	misshapen units except for the style of "pieces"	10% m/m
(e)	units with blemishes from 0.5 cm to 1 cm of the surface area	10% m/m
(f)	units with blemishes more than 1 cm of the surface area	5% m/m
(g)	stalks or parts of stalks or other extraneous vegetable material	1 piece/500 g
(h)	peel fragments, loose or adhering to the fruit 0: more than 1 cm	8 cm <sup>2</sup>
(i)	whole pits or stones whether free or adhering to the flesh	1 piece/3 kg
for all styles other than whole -		
(j)	hard pit fragments more than [3] mm in any dimension	1 piece/500 g

- The drained fruit ingredient 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 fruit retained on the screen is "drained fruit ingredient".
- When dry sugar is added to peaches after freezing, the dry sugar shall be washed off with water before draining.

### 3.5 Classification of "Defectives"

Any sample unit from a sample taken in accordance with the Sampling Plans for Prepackaged Foods (1969) shall be regarded as "defective" when:

- (a) the total soluble solids of the sample unit is outside the range specified in 3.2.1 or 3.2.2 as appropriate; or
- (b) any one of the organoleptic and other characteristics under 3.3.1 is not complied with; or
- (c)
  - (i) any one of the defects listed under 3.4.1 is present in more than twice the amount of the specified tolerance for the individual defect; or
  - (iii) the total of defects (a) to (f) exceeds [20] % m/m.

### 3.6 Lot Acceptance

A lot is considered acceptable when the number of such "defectives" as specified in (a) or (b) or (c) in 3.5 does not exceed the acceptance number (c) of the Sampling Plans for Prepackaged Foods (1969).

## 4. FOOD ADDITIVES

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

4.1 The following are permitted:

<u>Additives</u>	<u>Maximum level of use</u>
ascorbic acid	not limited
citric acid	
sodium alginate	

5. HYGIENE

It is recommended that the product covered by the provisions of this standard be prepared in accordance with the Codex Alimentarius Code of Hygienic Practice for Quick Frozen Fruits, Vegetables and their Juices.

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 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 sweetener and whether as such or as the syrup)".

6.1.3 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.

6.1.4 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 (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 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.
- 6.5.2 When the product undergoes processing in a second country which changes its nature, the country in which the processing is performed shall be considered to be the country of origin for the purposes of labelling.

## 6.6 Additional Requirements

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

## 6.7 Bulk Packs

In the case of quick frozen peaches 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 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 (including contamination from the packaging material itself);
- (c) protect the product from moisture loss, dehydration and, where appropriate, leakage as far as technologically practicable;
- (d) not pass on to the product any odour, taste, colour or other foreign characteristics.

## 8. METHOD OF EXAMINATION

- 8.1 Thawing Procedure for Quick Frozen Fruit and Vegetables (Codex Alimentarius method).

## 9. METHODS OF ANALYSIS AND SAMPLING

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

### 9.1 Sampling

Sampling shall be carried out in accordance with the Sampling Plans for Prepackaged Foods (1969).

### 9.2 Test Procedure

- 9.2.1 Net Weight Determination of Frozen Fruits and Vegetables (Codex Alimentarius method, provisionally in Appendix IV to ALINORM 70/23) (endorsed).

9.3 Analysis

- 9.3.1 Determination of mineral impurities, such as sand: ISO Recommendation R762 (1968): Determination of Mineral Impurities (to be endorsed).
- 9.3.2 Determination of total soluble solids content: Total Soluble Solids (Frozen Fruits), submitted by the US delegation (CX/QFF/70/3), June 1970 (to be endorsed).

PROPOSED DRAFT STANDARD FOR QUICK FROZEN BILBERRIES

(To be submitted to the Codex Alimentarius Commission at Step 5 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. Neither does it apply to cultivated blueberries of the genus Vaccinium.

2. DESCRIPTION

2.1 Product Definition

Quick frozen bilberries are the product prepared from fresh, clean, sound, ripe bilberries of firm texture conforming to the characteristics of Vaccinium myrtillus L.

2.2 Process Definition

Quick frozen bilberries 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 product shall be maintained at a low temperature such as will maintain the quality during transportation, storage and distribution up to and including the time of final sale.

The recognized practice of repacking quick frozen products under controlled conditions followed by the re-application of the quick freezing process as defined is permitted.

2.3 Presentation

2.3.1 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, 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% 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%, as determined by refractometer at 20°C.

### 3.3 Quality Factors

#### 3.3.1 Organoleptic and other characteristics Quick frozen bilberries shall be:

- (a) of good colour and normally developed;
- (b) free from foreign flavour and odour;
- (c) intact and practically free from smashed berries;
- (d) clean, practically free from sand and grit and other , foreign material;
- (e) practically free from stalks, leaves and other extraneous vegetable material;
- (f) sound, practically free from mould and damage by insects or diseases;
- (g) practically free from immature berries or overripe berries and mummified berries;
- (h) when presented as free-flowing, practically free from berries adhering to one another which cannot be easily separated by hand without damage when in a frozen state and not icy;
- (i) of similar varietal characteristics in each package.

### 3.4 Tolerances

#### 3.4.1 Tolerances for defects

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

(a)	smashed or disintegrated berries	3% m/m
(b)	blemished fruit	5% m/m
(c)	overripe and mummified bilberries	3% m/m
(d)	berries of other species	2% m/m
(e)	green berries	2% m/m
(f)	berries with attached stalks or parts of stalks each longer than 2 mm in one dimension	5% m/m
(g)	leaves or similar extraneous vegetable material (E.V.M.) *	4 pieces/500 g

\* Any of the material in (g) found in the drained syrup shall be added to the fruit ingredient.

- The drained fruit ingredient 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 food retained on the screen is "drained fruit ingredient";
- when dry sugar is added to whole berries after freezing, the dry sugar shall be washed off with water before draining.

#### Classification of "Defectives"

Any sample unit from a sample taken in accordance with the Sampling Plans for Prepackaged Foods (1969) shall be regarded as "defective"" when":

- (a) the total soluble solids of the sample unit is outside the range specified in 3.2.1 or 3.2.2 as appropriate; or

- (b) any one of the organoleptic or other characteristics under 3.3.1 is not complied with; or
- (c) (i) any one of the defects listed under 3.4.1 is present in more than twice the amount of the specified tolerance for the individual defect; or
  - (ii) the total of defects (a) to (f) exceeds 18%.

### 3.6 Lot Acceptance

A lot is considered acceptable when the number of such defects as specified in (a) or (b) or (c) in 3.5 when treated independently of each other does not exceed the acceptance number (c) of the Sampling Plans for Prepackaged Foods (1969).

### 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 Codex Alimentarius Code of Hygienic Practice for Quick Frozen Fruits, Vegetables and their Juices.

### 6. LABELLING

In addition to sections 1, 2, 4 and 6 of the General Standard for the Labelling of Prepackaged Foods (Kef. 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 "bilberries".
- 6.1.2 In addition there shall appear on the label 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 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.

#### 6.2 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

- 6.5.1 The country of origin of the product shall be declared if its omission would mislead or deceive the consumer.
- 6.5.2 When the product undergoes processing in a second country which changes its nature, the country in which the processing is performed shall be considered to be the country of origin for the purposes of labelling.

## 6.6 Additional Requirements

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

## 6.7 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 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 bilberries must

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

## 8. METHOD OF EXAMINATION

- 8.1 Thawing Procedure for Quick Frozen Fruit and Vegetables (Codex Alimentarius method).

## 9. METHODS OF ANALYSIS AND SAMPLING

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

### 9.1 Sampling

Sampling shall be carried out in accordance with the Sampling Plans for Prepackaged Foods (1969).

### 9.2 Test Procedure

9.2.1 Net weight determination of Frozen Fruits and Vegetables (Codex Alimentarius method, provisionally in Appendix IV to ALINORM 70/23) (endorsed).

9.3 Analysis

- 9.3.1 Determination of mineral impurities, such as sand: ISO Recommendation R 762 (1968): Determination of mineral impurities (to be endorsed).
- 9.3.2 Determination of total soluble solids content: Total soluble solids (Frozen Fruits), submitted by the US delegation (CX/QFF/70/3, June 1970) (to be endorsed).

(English only)

Appendix VI

DETERMINATION OF THE ALCOHOL-INSOLUBLE SOLIDS CONTENT OF QUICK  
FROZEN PEAS

(proposed by the Netherlands)

1. SCOPE

This method is applicable to quick frozen peas.

2. DEFINITION

The alcohol-insoluble solids content is defined as the percentage by mass of substances as determined by the procedure described below.

3. PRINCIPLE OF THE METHOD

The "alcohol-insoluble solids" in peas consist mainly of insoluble carbohydrates (starch) and protein. A weighed quantity of the sample is boiled with slightly diluted ethanol. The solids are washed with ethanol until the filtrate is clear. The alcohol-insoluble solids are dried and weighed. The amount present is used as a guide to maturity.

4. REAGENT

Ethanol 80% v/v: dilute 8 litres 95% v/v ethanol to 9.5 litres with distilled ; water.

5. APPARATUS

5.1 Sieve - no. 8

5.2 Macerator or blender (e.g., Tumix, Waring or equivalent)

5.3 Analytical balance of 0.001 g accuracy

5.4 Conical flasks, 750 ml

5.5 Reflux condenser (jacket length 40 cm)

5.6 Electrical heating plate

5.7 Filterpaper, diam. 11 cm, Schleicher & Schüll no. 595 or 604, or equivalent

5.8 Buchner funnel, diam. 9 cm, with suction flask attached to water pump

5.9 Moisture tester, e.g. Ultra-X, system Groner, also named Ultramat; use with preference the model with one reserve dish (Ultra-duplex), or equivalent

5.10 Plastic bag, of capacity to hold entire sample for thawing

5.11 "Policeman" on glass rod bent so as to facilitate cleaning flask or beaker

5.12 Waterbath, with continuous flow at room temperature or regulated at room temperature for thawing

5.13 Clamps or weights to prevent agitation of package in waterbath during thawing.

## 6. PROCEDURE

### 6.1 Preparation of Test Sample

Place frozen peas or frozen peas with sauce in plastic bag and tie off. Immerse sample in waterbath with continuous flow at room temperature or regulated at room temperature. Avoid agitation of package during thawing by using clamps or weights if necessary. When completely thawed, remove bag from bath. Blot off adhering water from the plastic bag. Transfer the peas from bag to a no. 8 sieve. If sauce is present, wash with gentle spray of water at room temperature until the sauce is removed. Without shifting the peas, incline the sieve as to facilitate drainage, and drain two minutes. Wipe the bottom of the sieve. Weigh 250 g peas and transfer into the blender, add 250 ml distilled water and homogenise for 1 min. at low speed and 1 min. at high speed (about 12,000 revolutions per min.)

### 6.2 Determination

- 6.2.1 Weigh 20 g paste into a conical flask of 730 ml, add 150 ml ethanol 80% and swirl to mix
- 6.2.2 Place the flask on the heating plate, fit to the reflux condenser and bring to boil. Keep it boiling during 3 minutes and allow to stand a few minutes
- 6.2.3 In the meantime moisten a filterpaper with ethanol 80% and dry it on the moisture tester in order to remove moisture and any alcohol soluble solids present in the filterpaper. Dry for approximately 3 min., i.e. until the pointer of the apparatus stops. Then weigh the filterpaper accurately in mg
- 6.2.4 Place the dried and weighed filterpaper into the Buchner funnel and filter the solution contained in the conical flask through the filterpaper, using suction, as described in paragraph 6.2.5
- 6.2.5 Decant most of the supernatant liquid through the filterpaper. Wash the solids in the flask without delay using small portions of 80% ethanol until the washings are colourless, decanting through the filterpaper each time. Do not allow the solids to become dry during the washing. Transfer the solids to the filterpaper, spreading evenly
- 6.2.6 Carefully remove the filterpaper containing the residue from the funnel, transfer to the moisture tester and dry in the same way as the empty filterpaper. Drying time is ended when the pointer of the instrument does not move any longer. This takes approximately 10 min: viz. 3 min. at 220 V, 3 min. at 170 V and 4 min. at 140 V
- 6.2.7 Place weights on the dish of the instrument in such a way that after the drying period the pointer stops between 0 and 25

## 7. CALIBRATION

Calibrate the apparatus by placing a 10 g weight on the dish with fully burning lamp. In that case the deflection of the needle should be 0

8. CALCULATION AND EXPRESSION OF RESULTS

Calculate the alcohol-insoluble solids (A.I.S.) content of the sample by means of the following formula:

% m/m A.I.S. = 100 - (a + b + c), where

a = reading of the scale

b = adjoined mass in g x 10

c =  $\frac{\text{mass of the dried filterpaper in mg}}{100}$