

ALINORM 91/14  
AGRI/WP.I/GE.4/19

UN ECONOMIC COMMISSION FOR  
EUROPE COMMITTEE ON AGRICULTURAL  
PROBLEMS  
WORKING PARTY ON STANDARDIZATION  
OF PERISHABLE PRODUCE

JOINT FAO/WHO FOOD STANDARDS  
PROGRAMME CODEX  
ALIMENTARIUS COMMISSION

CODEX ALIMENTARIUS COMMISSION  
Nineteenth Session  
Rome, 1-10 July 1991

REPORT OF THE NINETEENTH SESSION OF THE  
JOINT ECE/CODEX ALIMENTARIUS GROUP OF EXPERTS  
ON STANDARDIZATION OF FRUIT JUICES  
Rome, 12-16 November 1990

Note: This document incorporates Codex Circular Letter CL 1991/2-FJ

**CX 5/55.2**

**CL 1991/2-FJ  
January 1991**

TO: - Codex Contact Points  
- Participants at the Nineteenth Session of the Joint ECE/Codex Alimentarius Group of Experts on Standardization of Fruit Juices  
- Interested International Organizations

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

SUBJECT: Distribution of the Report of the Nineteenth Session of the Joint ECE/Codex Alimentarius Group of Experts on Standardization of Fruit Juices

PART A - MATTERS OF INTEREST OF THE 19TH SESSION OF THE CODEX ALIMENTARIUS COMMISSION

1. Documents at Step 8 of the Procedure
  - Draft General Standard for Vegetable Juices (Alinorm 91/14, Paragraphs 38–47 and Appendix II)
  - Draft Guidelines on Mixed Fruit Juices (Alinorm 91/14, Paragraphs 48–62 and Appendix III)
  - Draft Guidelines on Mixed Fruit Nectars (Alinorm 91/14, Paragraphs 63–73 and Appendix IV)
2. Revised Methods of Analysis (Alinorm 91/14, Paragraphs 91–92 and Appendix V)

The Group of Experts adopted the revised methods of analysis for carbon dioxide, ethanol and essential oils recommended by the ad hoc Group of Analysis. The Group agreed that the methods should be submitted for adoption by the Commission, following endorsement by the Codex Committee on Methods of Analysis and Sampling.

Governments wishing to propose amendments to the Standard and Draft Guidelines should do so in writing in conformity with the Guide to the Consideration of Standards at Step 8 (See 7th ed. of the Procedural Manual of the Codex Alimentarius Commission) to the Chief, Joint FAO/WHO Food Standards Programme, FAO, 00100 Rome, Italy, not later than 30 March 1991.

## **Summary and Conclusions**

The summary and conclusion of the 19th Session of the Joint ECE/Codex Alimentarius Group of Experts on Standardization of Fruit Juices (Rome, 12-16 November 1990) were as follows:

- the Group of Experts reviewed recent information on the toxicology and levels of tin and agreed to maintain the present maximum limits of 200 mg/kg for tin adopted by the Commission (Paragraphs 25-30)
- noted that the limits for contaminants adopted so far and included in the fruit juice standards were acceptable and that at present no other contaminant provisions were warranted (Paragraph 37)
- agreed to move the Draft General Standard for Fruit Juices to Step 8 for adoption by the Commission (Paragraphs 38-45 and Appendix II)
- agreed to move the Draft Guidelines for Mixed Fruit Juices to Step 8 for adoption by the Commission (Paragraphs 58-59 and Appendix III)
- agreed to move the Draft Guidelines for Fruit Nectars to Step 8 for adoption by the Commission (Paragraph 77 and Appendix IV)
- noted the different views held by delegations as concerned the compulsory addition of sugars to mixed fruit nectars and agreed that the guidelines should include the addition of sugars or honey in the description of the product (Paragraph 72)
- reached a consensus of opinion which reconciled differences on the addition of sugars and noting that the changes in the guidelines would require consequential changes in the General Standard for Fruit Nectars agreed to bring this to the attention of the Commission (paragraph 73)
- considered the proposal to delete the reference to "mechanical process" in the Definition Section for Fruit Juices to provide for additional methods for manufacturing of fruit juices and found that this proposal was not acceptable (paragraphs 78-89)
- agreed to submit for endorsement by the CC on Methods of Analysis and Sampling and for adoption by the Commission of the methods of analysis for carbon dioxide, ethanol and essential oils as recommended by the ad hoc Working Group on Analysis (paragraph 92 and Appendix V)
- noting that there were no outstanding issues for consideration agreed to adjourn sine die and to ask the Commission's approval for this recommendation (paragraph 94)
- indicated that a few areas would need attention in the future, viz, (a) analytical methodology, chemiometry and identity control; (b) tehnicological advances in the manufacture of fruit juices and their implication for the definition of fruit juices; (c) revision and updating of standards and guidelines (paragraph 94)
- expressed its highest appreciation to Prof. W. Pilnik (The Netherlands) who had served as its Chairman since 1966 (paragraph 96)

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## **INTRODUCTION**

1. The Joint ECE/Codex Alimentarius Group of Experts on Standardization of Fruit Juices held its 19th Session in FAO Headquarters, Rome from 12-16 November 1990, under the Chairmanship of Professor Dr. W. Pilnik (Netherlands).

2. The Session was attended by 57 participants, representing the following Member Countries: Argentina, Australia, Austria, Belgium, Canada, Egypt, Finland, France, Islamic Republic of Iran, Israel, Italy, Japan, Republic of Korea, Mexico, Morocco, the Netherlands, Nigeria, Poland, Spain, Switzerland, Thailand, United Kingdom, United States of America. Observers were present from the European Economic Community (EEC), the International Federation of Fruit Juice Producers (IFJU), the Confédération des Industries Agroalimentaires de la CEE (CIAA), and the European Committee for Standardization (CEN). The list of participants, including officers from FAO and the UN/ECE, is attached as Appendix I of this report.

3. The Session was opened by Mr. John R. Lupien, Director of the Food Policy and Nutrition Division, who welcomed the delegates on behalf of the Directors-General of FAO and WHO, the sponsoring organizations of the Codex Alimentarius Commission, and the Executive Secretary of the United Nations Economic Commission for Europe (UN/ECE) He noted that the Group of Experts had been meeting for almost 30 years and had deservedly been referred to as an example of successful cooperation between United Nations Organizations.

4. Mr. Lupien noted that the work of the Group represented a significant contribution towards promoting international trade and protecting consumer interests for a series of products which are produced and marketed all over the world. Attention was drawn to the increasing participation of developing countries in this work over the years which reflected the increasing importance of their products in world trade. The Group produced some 25 worldwide standards covering the most important fruit juices, concentrated fruit juices and fruit nectars. It was expected that the present session would see the completion of this wide ranging work in finalizing a General Standard for Vegetable Juices and Guidelines for Mixed Fruit Juices and Nectars. During the past the programme of work of the Group had also evaluated and endorsed a battery of analytical methodologies which played a particular role in preventing adulteration and misbranding of fruit juices. He noted that the application of the fruit juice standards, as measured by traditional acceptance procedures, could be improved. However, he reported that recent developments in the Uruguay Round Of Multilateral Trade Negotiations now nearing completion, would introduce more order and discipline in international trade and place a new emphasis on the usefulness of Codex Standards. He drew attention to the fact that the Working Group on the Agreement on Sanitary and Phytosanitary Controls had decided to adopt Codex Alimentarius Standards and expertise as the main scientific base for the an agreement in this area.

5. Mr. Lupien drew delegations' attention to the FAO/WHO Conference on Food Standards, Chemicals in Food and Food Trade which would take place in March 1991. This Conference would bring together a worldwide audience of varied backgrounds and experiences to discuss and make recommendations concerning key issues in these areas. He noted that as the substantive work of the Group was nearing completion it may consider to recommend to the Commission that it be adjourned *sine die*. He wished the Group success in its important work.

6. The Chairman welcomed delegates to the Session and noted the useful role played by the Group of Experts as an international forum on standardization of fruit juices. He noted that other international organizations such as the International Federation of Fruit Juice Producers would continue to provide opportunities for delegates to meet and discuss matters concerning fruit juices. He informed the Group that in the course of the Session it would be necessary to look back at past discussions to reaffirm those decisions taken and to clarify any remaining points in establishing a programme of work which might require further attention in the future.

7. The Group of Experts was informed of the death of Mr. T. Satasuk of Thailand during 1989. He had been Vice-Chairman of the Group for a number of years and had actively contributed to its work. The Group of Experts observed a moment of silence in honour of Mr. Satasuk. The Delegation of Thailand was requested to convey the Group's sincere sympathy to Mr. Satasuk's family.

#### **ADOPTION OF THE AGENDA (Agenda Item 2)**

8. The Provisional Agenda was adopted without change. The Group of Experts decided to set up an ad hoc Working Group on Methods of Analysis under the Chairmanship of Prof. H. Woidich (Austria) with the participation of delegations from Finland, France, Israel, Spain, Switzerland, the United Kingdom, the United States of America and the European Committee on Standardization (CEN).

#### **MATTERS OF INTEREST ARISING FROM THE CODEX ALIMENTARIUS COMMISSION (18TH SESSION) AND OTHER CODEX COMMITTEES AND PROGRESS REPORT ON ACCEPTANCES (Agenda Item 3)**

9. The Group of Experts had before it Matters of Interest Arising from the Report of the Codex Alimentarius Commission and Other Codex Committees as contained in document CX/FJ 90/2 (AGRI/WP.1/GE.4/R.98).

##### **A. Codex Alimentarius Commission, 18th Session (ALINORM 89/40)**

##### **Adoption of Standards (paras. 374-381)**

10. The Group of Experts noted that the Commission had adopted at Step 8 of the Codex Procedure the General Standard for Fruit Nectars Preserved Exclusively by Physical Means and the General Standard for Fruit Juices Preserved Exclusively by Physical Means. The Draft General Standard for Vegetable Juices had been adopted at Step 5. The Guidelines for Mixed Fruit Juices (ALINORM 89/14, Appendix. VI) and for Mixed Fruit Nectars (ALINORM 89/14, Appendix V) had been considered by the 35th Session of the Executive Committee (ALINORM 89/3, paras. 32-33) which had noted that the guidelines were not elaborated through the Codex Step Procedure. The Executive Committee expressed the view that these types of texts (guidelines) should be elaborated with the same degree of rigour as other Codex texts and should be subject to the Step Procedure. The Commission had endorsed (ALINORM 89/40 para. 109) the recommendations of the Executive Committee that "guidelines and other texts of a non-mandatory nature should be elaborated through the Step Procedure unless there was a justification for not doing so", and that "all such work should be approved by the Commission (or, in the interim, by the Executive Committee) at an early stage." The Commission "adopted both Guidelines at Step 5 of the Procedure (ALINORM 89/40, para. 381).

#### Endorsement of Methods of Analysis (paras. 382-383)

11. The Group of Experts noted that the Commission had endorsed the revised general methods of analysis of fruit juices which had been updated. The Delegation of Egypt urged that the situation of developing countries should be taken into consideration when developing technical methods of analysis. It considered that established methods of analysis should be retained and that advanced analytical methods which may not be available in developing countries should not be introduced.

#### Labelling Provisions (paras. 385-386)

12. The Group of Experts noted that the Commission had endorsed amendments to the labelling provisions in the draft general standards for fruit juices and nectars and considered that consequential amendments should be made to individual Codex standards for fruit juices and nectars.

#### Acceptance of Codex Standards by Regional Economic Groupings (paras. 187-189)

13. The Group of Experts noted that the Commission had adopted the recommended text included in the revised 7th Edition of the Codex Alimentarius Procedural Manual as concerns the follow-up procedures in relation to acceptance in those sections dealing with the elaboration of Codex standards. The Group of Experts took note that the regional economic groupings would have the possibility to accept Codex standards in those cases where competence to accept them had been transferred to them by their Member States.

14. The representative of the European Economic Community reported that it was presently studying the legal aspects of formally accepting an initial group of some 30 Codex Standards, including standards for fruit juices. It expressed the hope that it would be able to announce at the 19th Session of the Codex Alimentarius Commission that this step would be taken.

15. The representative of the European Committee for Standardization (CEN) reported on its role in drawing up European standards concerning methods of analysis in the field of fruit juices. Membership in CEN included EC member states and EFTA countries. The representative of CEN further reported that in January 1990 the Council and EC Commission had confirmed that as far as fruit juices are concerned and, within the framework of the voluntary European approach, the CEN appeared in their view to be the most appropriate body for drawing up standards which define the physical, chemical and microbiological characteristics of fruit juices supplementing EC legislation. The representative of CEN considered that in light of the views expressed by the representative of the EEC concerning the acceptance of Codex standards, note should be taken of the CEN activities in this area.

#### Coordination of Food Standards Work Undertaken by Other International Organizations (para. 218)

16. The Group of Experts noted that the Commission had adopted recommendations of the Codex Committee on General Principles as concerns coordination of regional standardizing bodies working in the field of foods with the Codex Alimentarius.

#### Amendments to the Codex Guidelines on Labelling Provisions in Codex Standards (paras. 267-268)

17. The Group of Experts noted that the Commission had adopted the amended Procedural Manual Section, "Relations Between Commodity Committees and General

Committees" (ALINORM 89/22, Appendix IV) which would replace the Procedural Manual Section, "Guidelines on Labelling Provisions in Codex Standards."

United Nations Economic Commission for Europe (para. 60)

18. The Group of Experts noted the activities of this international organization in harmonizing commercial quality standards for perishable produce and its relationship with the Codex Committee on Tropical Fresh Fruits and Vegetables.

**B. Matters Arising from the Executive Committee. 37th Session. 3-6 July 1990 (ALINORM 91/3)**

Codex Publications (paras. 28-33)

19. The Group of Experts noted that the Commission had endorsed proposals for the publication of the Revised Codex Alimentarius and the first volume was being published with three further volumes expected in the future. It was further noted that there was the possibility to have the revised Codex Alimentarius available on CD-ROM or possibly as an online database for computer users.

Guidelines and Other Codex Advisory Texts (paras. 39-43)

20. The Group of Experts noted that the Executive Committee had recommended the revision of advisory texts to take into account the increasing role of Codex texts in international trade, particularly in the Agreement on Sanitary and Phytosanitary Measures of the present multilateral trade negotiations in GATT. The issue of the status of advisory texts would be addressed by the FAO/WHO Conference on Food Standards, Chemicals in Food and Food Trade to be held in March 1991. It was noted that this matter would also be discussed at the 19th Session of the Commission in July 1991.

Ad Hoc Working Groups operating between Sessions of the Committee (para. 56)

21. The Group of Experts noted the recommendations of the Executive Committee that *ad hoc* working groups should be established only when necessary and with specific terms of reference and tasks to be carried out within a clearly defined time frame. It was further noted that working groups meeting between sessions should be kept to an absolute minimum and sufficient notice of their meetings should be made.

**C. Other Codex Committees**

Codex Committee on Pesticide Residues. 21st Session. 1989. (ALINORM 89/24A. para. 10)

22. The Group of Experts noted that the Committee had been informed about the question of residues of arsenic in fruit juices, arising possibly from the use of arsenical pesticides. It noted further the opinion of the Committee that the amount of arsenic occurring in fruit juices as a result of the use of arsenical pesticides would be negligible.

Codex Committee on Food Hygiene. 24th Session (ALINORM 91/13. paras. 41-44 and Appendix II)

23. The Group of Experts noted that the Committee had agreed to advance the Draft General Provisions Relating to Hygiene to Step 5 of the Procedure. It noted that the Draft General Guidelines included three basic texts for shelf-stable products where microbiological spoilage before or after processing is unlikely to be of significance, shelf-stable products, heat-processed in hermetically sealed containers and for all other products. It was further noted that the Committee had recommended that these provisions should be applied retroactively to all Codex standards when they are revised

or republished in the Revised Codex Alimentarius and that only items deviating from these general provisions would need to be subject to future endorsement.

Codex Committee on Tropical Fresh Fruits and Vegetables.2nd Session. March 1990 (ALINORM 91/35. paras. 34, 43, 52, 61)

24. The Group of Experts noted that the Committee had agreed to advance the proposed Draft Worldwide Codex Standards for Pineapple, Papaya and Mango to Step 8 of the Procedure and had agreed to the elaboration of proposed Draft. Worldwide Codex Standards for Nopal (Prickly Pear), Carambola and Litchi.

#### **CONSIDERATION OF CONTAMINANTS IN FRUIT AND VEGETABLE JUICES AND NECTARS (Agenda Item 4)**

25. For consideration of this item the Group of Experts had before it document CX/FJ 90/3 (AGRI/WP.1/GE.4/R.104). The document briefly reviewed the discussions on contaminants at previous meetings of the Group, presented a summary of the latest toxicological evaluations of lead and tin, and provided data on actual levels of tin and lead in fruit and vegetable juices and in fresh fruits and vegetables found in various countries. Additional information on the same matter was made available in Conference Document 1.

26. The Group noted that these documents had been prepared with the purpose of enabling the Experts to discuss contaminants in more general terms and to facilitate the review of contaminant provisions in the General Standard and the two Guidelines.

#### Tin

27. The Group of Experts noted the present situation with regard to the upper limit. There were two classes of products, a) with 200 mg/kg and b) with 150 mg/kg. The Delegation of Switzerland proposed a compromise of 150 mg/kg for all standards, pointing out that technical developments made this possible. The lower limit was also desirable for export products from countries with a tropical climate which had to comply with the legislation of importing countries. Most delegations could agree to the level of 150 mg/kg. The Delegation of the USA pointed out that the limit of 200 mg/kg was already a compromise. For fruit juice and nectars produced and/or stored in hot climates a lower level was impossible. The Delegation of Nigeria supported the lower level of 150 mg/kg just because of the hot climate in their country due to which tin content would increase during storage. If this process started at 200 mg/kg it might exceed safety limits. The US point of view was supported by the Netherlands and Spain. Australia, Canada, Egypt and Thailand expressed the view that the limit of 250 mg/kg should be reestablished for the reasons given by the USA Delegation.

28. The Delegations of Australia and Thailand pointed out that JECFA had made no numerical recommendation on tin content in fruit juices and that the CCFAC, on the basis of the JECFA evaluation recommended that efforts be made "to keep tin levels in canned foods as low as practicable". These levels should be limited to those consistent with the application of GMP. The Thai Delegation stated that this recommendation covered both climatic and technological conditions worldwide and unless these factors are taken into consideration we could have a case of non-tariff barriers.

29. The UK Delegation felt that any discussion of levels was futile in the absence of a sampling plan. The Delegation of Austria informed the Committee that the CCMAS had not yet decided on a sampling plan. It was noted that for the time being the use of the sampling plan for pesticide residues was recommended to the Group by the CCFAC.

30. The Chairman noted that a compromise to a common view of the Group was not possible. The Group agreed that technical progress would eventually allow lower limits for tin content to be established for all types of juices and nectars.

#### Cadmium, Mercury and other Contaminants

31. The Delegation of Switzerland stated that cadmium and mercury should be considered for inclusion by the Group of Experts, and pointed out that in Switzerland the limits for these contaminants in fruit juices have been set at 0.03 mg/kg for cadmium and 0.01 mg/kg for mercury. The amounts of Cd and Hg that are present in fruits juices are negligible and the limits reflect the levels that result due to environmental contamination. The Delegation of Poland supported the proposal of Switzerland in respect to Cadmium, but indicated that the limits should be set based on analytical data. The observer from the IFFJP confirmed that his organization had adopted the same limits for the two contaminants.

32. The Chairman pointed out that when considering the setting of international limits for cadmium in fruit juices, caution should be exercised regarding their possible implication on world trade and suggested that more information on the worldwide situation in this respect should be obtained. The Secretariat informed the Group of Experts that the Codex Committee on Food Additives and Contaminants (CCFAC) had issued a CL 1990/17-FAC requesting information from governments on actual levels of lead and cadmium in foodstuffs, maximum limits and criteria, regulations, sampling plans and control programmes. The relevant information will be reviewed by the CCFAC.

33. The representative of the EEC informed the Group of Experts that the Community was adopting a global and horizontal approach towards all contaminants. No specific limits have been currently set and rather the efforts were concentrated on a permanent control.

34. The Group of Experts took note of the position of Switzerland and Poland and agreed that the decision of whether to include provisions for cadmium and mercury in fruit and vegetable juice standards should be made at a later stage when the results from the discussions on the contaminants by CCFAC and on sampling plans by CCMAS become available.

35. The Delegation of Israel informed the Group of Experts that his country had experienced difficulties in meeting requests for certification of pesticide residues in exported fruit juices. The Delegation pointed out that guidance was needed in this respect since Codex Maximum Residue Limits had been established for fresh fruits and vegetables, but not for juices made from them. The Delegation of Switzerland supported this statement and the Group of Experts agreed to refer the matter to the Codex Committee on Pesticide Residues.

36. The Delegation of Poland was of the opinion that the level of 5 mg/kg for copper in fruit juices was too high and suggested that a level of 3.5 mg/kg would be more acceptable. The Delegation of Finland suggested that the Group consider setting limits for nitrate in vegetable juices (see para. 44).

37. The Group of Experts noted the various views expressed by the Delegations and agreed that in principle the limits for contaminants adopted by the Group so far and included in the fruit juice standards were acceptable and that at present no other contaminant provisions were warranted.

## **DRAFT GENERAL STANDARD FOR VEGETABLE JUICES AT STEP 7 (Agenda Item 5)**

38. For this Agenda Item Delegations had before them the text of the Draft General Standard (ALINORM 89/14, Appendix VII) and working paper CX/FJ 90/4; AGRI/WP.1/GE.4/R99 which contained the written comments of Argentina, Spain, Sweden and the International Federation of Fruit Juice Producers (IFFJP). The Group of Experts then proceeded to discuss the draft standard as published in App. VII of ALINORM 89/14. The written comments were also taken into consideration.

### **Section 2 - Description**

39. The Observer from IFFJP supported by the Delegates of France and Switzerland suggested that the word "by mechanized means" should be inserted after "obtained".

### **Section 3 - Essential Composition and Quality Factors**

40. The Delegation of Spain proposed that in point 3.4(c) the adjective "dry" should refer only to sugar. The Group agreed to that proposal. The Group agreed with the proposal of the IFFJP to add "except in vegetable juices treated by lactic acid fermentation" to 3.4(b)

### **Section 4. Food Additives**

41. The Group agreed to remove the square brackets from 4.3 "Lactic Acid". The Group also agreed to delete 4.4 Tartaric Acid because its strong acid taste, low acceptable daily intake and high price, make it unsuitable as an additive for vegetable juices.

42. The Delegates also agreed to specify "Limited by Good Manufacturing Practice" as a regulatory provision for 4.6 Glutamic Acid, 4.7 Natural Flavours, and 4.8 Carbon Dioxide.

43. The Group discussed in detail the technological justification for the use of thickeners (4.9 - 4.18) in vegetable juices. The Delegation of Switzerland was in favour of maintaining the present list of thickeners which have in fact a function of stabilizers in order to cope with the sedimentation problems which are more serious in the vegetable juices than in fruit juices. The Delegation of Finland supported by Spain and Israel suggested that the list should be shortened to a few thickeners such as pectin, alginate and guar gum. Most Delegations (Argentina, Austria, Belgium, Canada, Mexico, the Netherlands, UK, USA) and the Representative of IFFJP expressed reservation about, or did not find justification for, the addition of thickeners, to a product described as a vegetable juice. The Group agreed to delete the provisions for thickeners (4.9 - 4.18).

### **Section 5 - Contaminants**

44. The Group of Experts noted the written comment of Germany concerning the establishment of provisions for nitrate in vegetable juices. In the comments the following limits for nitrate were suggested: Beet juice - 3000 mg/kg; Spinach juice - 2000 mg/kg; other vegetable juices - 500 mg/kg. The Delegation of Finland informed the Group that this problem had been raised in that country too, but no limits had been set. The Group of Experts did not consider it appropriate to set limits for nitrate at this time. The Thai Delegation reiterated its position of having a limit of 250 mg/kg for tin and 0.5 mg/kg for lead.

45. The Group of Experts agreed to remove the square brackets from the limit of 100 mg/kg for the mineral impurities insoluble in 10% hydrochloric acid in recognition of the fact that mineral impurities are generally more difficult to wash from vegetables.

#### Section 7 - Labelling

46. The Spanish Delegation drew attention to the use of the term "Edulcorado" in the Spanish version. In Spanish this term only denotes the addition of synthetic sweeteners and should be replaced in all standards by "Azucarado". Also the word "carbonatado" should be substituted in all standards by "con gas" or "gasificado".

#### Status of the Standard

47. The Group of Experts agreed to move the Standard to Step 8 for adoption by the Commission. The revised version is attached as Appendix II.

### **CONSIDERATION OF DRAFT GUIDELINES ON MIXED FRUIT JUICES (Agenda Item 6)**

48. The Group of Experts noted that the Commission at its 18th Session had adopted the Guidelines at Step 5. It considered the Guidelines at Step 7 in the light of government comments from Argentina, Finland, Italy, Spain and Sweden contained in CX/FJ 90/4, (AGRI/WP.1/GE.4/R.99) and CRD 2.

#### Section 1 - Scope

49. The Group of Experts noted that the present wording of the Scope Section did not prohibit treatment of the raw material with ionizing radiation. It agreed to include in the Scope Section the following statement "For the purpose of this standard and at this time, preservation by physical means does not include ionizing radiation" which is contained in the Scope Section of all Codex Standards on fruit juices.

#### Section 2 - Description

50. The representative of EEC informed the Group of Experts about the EEC definition of fruit juice which included a mixture of fruit juice and/or fruit puree or a mixture of concentrated fruit juice or mixtures of these different categories. The representative proposed that since the EEC definition was more exact, the present description be amended accordingly. The Group of Experts however, noting that the definition of juices as adopted by the Commission should be followed in elaborating Codex texts, did not agree to the EEC proposal.

#### Section 3.2 - Sugars

51. The Delegation of Thailand proposed that as contained in standards for single strength juice, the maximum amount of added sugars should be increased from 100 g/kg to 200 g/kg. The Group of Experts recalled discussions at earlier sessions on the subject (ALINORM 87/14, para. 134) and agreed to leave the text unchanged.

#### Section 3.3 - Ethanol Content

52. The Delegation of Switzerland drew the Group of Expert's attention to the Customs Cooperation Council designations (Brussels Nomenclature), supported by 88 countries, which defined products having an ethanol content of more than 0.5% by volume (0.3 % by weight) as "alcoholic products". The Group of Experts noting that fruit juices containing more than 3 g/kg ethanol would be considered as alcoholic products for customs purposes, agreed to reduce the existing level from 5 g/kg to 3 g/kg. The Group of Experts also agreed that the level of ethanol in the Codex General Standard for Fruit

Juices, Apple Juice and Grape Juice should be lowered to 3 g/kg. The Group noted that this would be a consequential amendment and should be brought to the attention of the Commission.

#### Section 5 - Contaminants

53. The Group of Experts noted that the maximum levels of contaminants were the same as those agreed to by it earlier (see paras. 27-30) and agreed to leave the levels unchanged.

#### Section 8 – Labelling

##### Sections 8.1.3 and 8.1.4

54. The Delegation of Belgium informed the Group that in its view, the present text in Section 8.1.4 was not satisfactory, that even use of high quantities of concentrated juice would only need to be labelled as "prepared partially from concentrated juices", that the text of 8.1.4 was superfluous, since it was covered by 8.1.3 and proposed 8.1.4 be deleted. The meaning of 8.1.4 that would be lost as a consequence could be accommodated by a slight modification of the text in 8.1.3. The views of the Delegation of Belgium were shared by the Delegations of Finland, France, and Switzerland.

55. The Delegation of the Netherlands proposed that the Section in quotes in 8.1.4 be reworded as "prepared from concentrated juices" and specify the name of the concentrated juice and expressed the view that the amended text may meet the approval of the Delegations that proposed deletion of Section 8.1.4 in its entirety.

56. The Delegation of the U.S.A. informed the Group that the present text of 8.1.3 and 8.1.4 prepared after consideration of the guidelines at two earlier sessions could in its view be applied without a problem to meet all situations and expressed a reservation to any change in the present text of 8.1.3 and 8.1.4.

57. The Group noted that it had three options before it to choose from:

- Option 1: Leave the text unchanged and note that the list of ingredients provides adequate information to the consumer on the type of concentrates used.
- Option 2: Delete 8.1.4 and note that the list of ingredients provide adequate information on the type of concentrated fruit juices used.
- Option 3: Compromise text, which is in line with EEC regulations (Proposal of the Delegation of the Netherlands (para. 55)).

58. A drafting group consisting of the Delegations of Belgium, France and the Netherlands proposed deletion of Section 8.1.4 and 8.2.2 and to change the text of 8.1.3 to read as "In the case of mixed fruit juices made wholly or partially from concentrated juice, the fact of reconstitution should be declared as follows: 'Mixed x juice made from concentrate or from concentrated juices' where x represents the names of all fruits which have been concentrated. This information should be given in close proximity to the name of the food or in another prominent position on the label"..<sup>1</sup>

59. The Group of Experts endorsed the proposal of the drafting group, noting however that labelling problems that may still arise due to the slight ambiguity of the revised Section 8.1.3 can be solved by the national regulatory authorities. The Delegation of the U.K. expressed a reservation to the Group of Experts' decision, indicating that the requirements of Sections 8.1.1 and 8.1.3 taken together would lead to confusing and illogical labelling.

60. The Group of Experts thanked the drafting group for its work.

#### Section 8.2 - List of Ingredients

61. The Group of Experts agreed to a proposal of the Chairman to include in 8.2 the following statement contained in the Codex General Standard for Fruit Nectars (Codex Stan. 161-1989):

"For this purpose concentrated fruit ingredients shall be calculated to single strength".

#### Status of the Guidelines

62 The Guidelines (Appendix III) were advanced to Step 8.

### **CONSIDERATION OF DRAFT GUIDELINES ON MIXED FRUIT NECTARS (Agenda Item 7)**

63. The Group of Experts had for its consideration Appendix V of the Report of its 18th Session (ALINORM 89/14) and comments received from governments in response to CL 1989/33 (FJ) as reported in document CX/FJ 90/4 (AGRI/WP.1/GE.4/R.99) and CRD 2 (Argentina, Finland, Italy, Spain and Sweden). It noted that the Commission at its 18th Session had adopted the Guidelines at Step 5 which would be discussed at Step 7 of the Procedure.

#### Section 1 - Scope

64. The Group of Experts agreed that, as in the Guidelines for Mixed Fruit Juices (para. 49) it would be necessary to include a statement which appears in the scope of all Codex standards that "preservation by physical means" does not at the present time include ionizing radiation.

#### Section 2 - Description

65. The Delegate of France felt that the requirement in the Guidelines that sugars or honey should be added to mixed fruit nectars should be reconsidered in light of EEC regulations which preclude addition of sugars or honey for certain fruits having a high sugar content. It was explained that this possibility had been provided in the form of an EEC waiver only for fruits having a high sugar content. The Group of Experts did not feel that the description should be changed to include reference to fruit puree. It was agreed to discuss the addition of sugars under Section 3 which referred specifically to this point.

1 At the time of adoption of the Report, the Delegate of Belgium suggested the following wording which the Group agreed expressed more clearly the situation of a mixed fruit product made from single strength and concentrated fruit juices:

"Mixed 'x' and 'y' juice of which juice 'x' is made from concentrates where 'x' represents the names of all the juices made from concentrates."

### **Section 3 - Essential Composition and Quality Factors**

#### Section 3.2 Sugars

66. The Chairman drew the attention of the Group of Experts to discussions of the Draft General Standard for Nectars which had taken place during its 17th and 18th Sessions concerning whether or not the addition of sugars or honey should be required. The 17th Session (ALINORM 87/14, para. 71) had decided that the addition of sugars or honey would be optional in the draft standard. The Codex Alimentarius Commission at its 17th Session returned the Draft General Standard for Nectars to the Group of Experts for further discussion of this point. The 18th Session of the Group of Experts (ALINORM 89/14, para. 22) reconsidered its earlier decision and agreed to replace "may" with

"shall" to make the addition of sugars or honey mandatory. References to sugars and honey had also been reintroduced in the Description Section. The 18th Session of the Group of Experts had noted that this point would possibly require further discussion in future in light of discussions taking place in the EEC and other developments concerning this point.

67. In discussing whether to amend the Draft Guidelines to make the addition of sugar optional for mixed fruit nectars, the Group considered carefully the consequential amendments which would then be required in the General Standard for Fruit Nectars.

68. The Representative of CIAA reported that the required addition of sugars to fruit nectars had been discussed among its members who considered that, from an industrial point of view, and in light of the consumers' view concerning sugar, a requirement for the use of sugar could have a negative impact on the trade in mixed fruit nectars.

69. The Delegation of Switzerland noted that while there were strong arguments to reduce sugar consumption, it felt that consumers had become accustomed to nectars with sugar and were not familiar with the sugarless nectars. In this country products with water added, but not sugars or honey, were labelled as "diluted fruit juice". In addition the Delegation noted that changing the requirements concerning sugars in the standards for specific nectars and the General Standard would require further legislative action in this country to revise national standards based on Codex Standards.

70. The Group of Experts discussed at length whether the addition of sugars or honey should be mandatory or optional for mixed fruit nectars. Some countries were of the opinion that the addition of sugars should be optional in the Guidelines for Mixed Fruit Nectars (Egypt, Finland, Iran, Israel, Mexico, Poland and Sweden). The Representative of the EEC reported that in Community legislation, the addition of sugars was mandatory with the exception of nectars with a naturally high sugar content.

71. Several countries noted that fruit nectars were characterized by the addition of sugars or honey and they were of the opinion that without this addition the product could only be called a diluted fruit juice and not a fruit nectar. The Chairman drew attention to the fact that the Codex Standards and the Guidelines presently specified that the soluble solids content of the nectars or mixed nectars should not be more than 20% m/m. He noted that addition of a minimum amount of sugars added was not specified.

72. The Group of Experts noted the differing views held by delegations as concerned the compulsory addition of sugars to mixed fruit nectars and agreed that the Guidelines should include the addition of sugars or honey in the description of the product, however, it agreed to delete this requirement in Section 3.2.1 as it would in effect call for additional sugars to be added to mixed nectars, which by their very nature, would already have had sugar added. It was noted that Section 3.2.1 would remain in the text as follows:

Section 3.2.1 If sugars are added they must be those defined by the Codex Alimentarius Commission.

This approach was felt by the Group of Experts to address the requirement that nectars should have sugars added but would not add additional requirements on this point for mixes.

73. Using Section 3.1 Minimum Contents of Fruit Ingredients as a precedent of an exception for mixed fruit nectars, the Chairman proposed the following additions to the Draft Guidelines for Mixed Fruit Nectars:

## Section 2 - Description

Add the following sentence at the end of the paragraph: "In case of fruit with a high sugar content the addition of sugar may be omitted"

## Section 8.8 Additional Requirements

8.8.7 Where no sugar has been added to the fruit nectars no claim shall be made in this respect.

A consensus of opinion was reached by the Group of Experts which reconciled earlier differences on the addition of sugars. The Group of Experts noted that changes in the text of the Guidelines would require consequential changes in the General Standard for Fruit Nectars. The Group agreed to bring this to the attention of the Commission.

## Section 4 - Food Additives

74. The Delegations of Belgium and the Netherlands reported that nectars sweetened with intensive synthetic sweeteners, in place of sugars, had been marketed in their countries for the past year labelled as nectars "synthetically sweetened". Interest was expressed as to how countries dealt with synthetic sweeteners and delegates were requested by the Chairman to report briefly on whether their national legislation allowed the addition of synthetic sweeteners in place of sugars or honey in fruit nectars. Practically all countries reported that the use of synthetic or artificial sweeteners was not presently allowed for fruit nectars, however many countries noted that provisions did exist for fruit based drinks to use artificial sweeteners in place of sugars. The Delegations of Italy and Israel reported that nectars in those countries could contain synthetic sweeteners as dietetic products labelled as such. The Group of Experts considered that in future the use of synthetic sweeteners would need to be discussed further with attention to labelling aspects.

## Section 5 - Contaminants

75. The Group of Experts noted that the general statement found in paras. 25-37 would also apply to the maximum level of tin in mixed nectars.

## Section 8 - Labelling

### Section 8.2.1 - List of Ingredients

76. The Group of Experts noted that as in the Guidelines for Mixed Fruit Juices, the following sentence should be added as in the Codex General Standard for Fruit Nectars (CODEX STAN 161-1989): "For this purpose concentrated fruit ingredients shall be calculated to single strength".

## Status of the Guidelines

77. The Group of Experts recognized the consensus which had been reached concerning the addition of sugars or honey and agreed that the Guidelines (Appendix IV) should be advanced to Step 8 of the Procedure.

## **CONSIDERATION OF THE DEFINITION OF FRUIT JUICES IN THE LIGHT OF NEW TECHNOLOGICAL PROCESSES USED IN THE PREPARATION OF JUICES (Agenda Item 8)**

78. The Group of Experts noted that document CX/FJ 90/7 which drew attention to a definition of fruit juice as presented in an earlier session (Appendix I, ALINORM 85/14) had proposed to delete reference to "mechanical process" in the definition section for

fruit juices and to provide for additional methods for the manufacturing of fruit juices having properties comparable to the mechanical process.

79. The Chairman drew attention to the approach taken in the paper which was an attempt not to define fruit juices from a technological viewpoint. He noted that certain Codex Standards make no mention of the technical process (i.e. Codex Standard for Tomato Concentrate, Codex Stan. 44-1981). He was of the opinion that reference should be to "juice obtained from sound and mature fruit" without reference to a technological process. Attention was drawn to the present use of methods other than mechanical processing in the manufacture of juice from deciduous fruit and tropical fruit. He noted the enzyme treatment used to increase juice yields, especially in the case of storage apples. In his view the standards should reflect current manufacturing practices rather than including a single process.

80. The Delegation of Poland stated that in its country mechanical process was exclusively used for the manufacture of fruit juices but considered that standards should not restrict the processes which might be used. He noted the usefulness of enzyme treatment in processing storage apples after prolonged storage. He considered that fruit juices should have the properties of juice obtained by a mechanical process. The Delegation of Switzerland felt that the organoleptic and analytical properties should be the same as that of juice from the mechanical process and noted that various papers on this topic stated differences in the analytical composition of juices made by different processing methods.

81. The Delegation of Spain noted that the juice manufacturing industry in this country considered that to open the door to all methods could include processing methods which would produce lower quality juice and could negatively affect trade. He suggested leaving the definition unchanged at this time and to study the application of new technical methods of juice manufacture in the future for specific juices.

82. The representative of the IFFJP recalled its opposition to removing reference to the mechanical process.

83. The Delegation of Thailand noted that for tropical fruit juice production, it was necessary to use processes other than the mechanical process, including the extraction process. Support was expressed by the Delegations of Australia and Israel to change the definition to allow other processes.

84. The Delegation of the United States considered that further study was needed before a change could be accepted which would introduce alternate technologies, particularly in light of the worldwide problem of product adulteration which would arise. The Delegation stressed that the present widespread fruit juice adulteration would become uncontrollable if for example advanced identification methodologies based on mineral composition were rendered inapplicable by the use of water extraction technologies.

85. The Delegation of the Netherlands pointed out that future work could include the development of criteria and methods which would allow to maintain under control various types of technologies for the production of fruit and vegetable juices.

86. The Chairman drew attention to the RSK, the German Industry Standards for Fruit Juices, and noted that it contained elaborate analytical descriptions and criteria for identity. He considered that these criteria provided a useful methodology for controlling quality and adulteration of any type of fruit juice. The Delegation of France expressed firm opposition against introducing other than mechanical processes for production of

fruit juices. It also pointed out that references to national standards produced by the industry, such as RSK, were inappropriate to the work of the Codex Group of Experts because in other countries, other national standards are applied, e.g. AFNOR in France.

87. The Chairman drew attention to the fact that methods other than the mechanical process are currently used for preparation of apple juice and certain juices from tropical fruits. He proposed that the following wording be added to the description section of the General Standard for Fruit Juices to take into account new processes with results comparable to the mechanical process:

"In the case of apples and certain tropical fruit other appropriate processes may be used provided they maintain the essential composition and quality factors of the juice obtained by a mechanical process."

88. While some Delegations expressed support for this proposal (Australia, Egypt, Israel, Nigeria and Thailand), other Delegations considered that it went too far and they could not accept to open the standard to methods other than mechanical processing (Belgium, France, Italy, Mexico, the Netherlands, Switzerland and the U.S.A., EEC and CIAA) . The representative of the EEC indicated that as a rule the mechanical process is used in the Community but there are some member countries where the diffusion method is permitted for the manufacture of fruit juices under certain conditions. The Delegation of Israel supported the Chairman's proposal, noting that the methods of production were not of importance as long as the product met the analytical and standards specifications. This view found the support of Egypt, Nigeria and Thailand.

89. The Chairman noted that even though the proposal (para. 87) was not found acceptable, he considered that progress had been made in the discussion of this point. He traced the history of expressions used in the Codex draft standards, such as pressing, which had been changed to read as mechanical process over the years as Codex standards, were updated to take into account current manufacturing practices. He was of the view that the Group of Experts should be proud of its past work and many accomplishments, in particular that its definitions of products had stood the test of time.

90. The observer of the Comité Européen de Normalisation (CEN) informed the Group of Experts that this organization had been aware of the need for advanced methods for establishing the identity of fruit juices and had engaged in a programme of research and development in chemometry.

#### **REVISION OF METHODS OF ANALYSIS (Agenda Item 9)**

91. The Group of Experts had before it the report of the Working Group on Analysis (Appendix V), which contained its recommendations concerning revision of methods of analysis for carbon dioxide, ethanol, and essential oils in fruit juices. The report of the Working Group was introduced by Dr. H. Woidich (Austria).

92. The Group of Experts adopted the report of the Working Group and agreed that the recommended methods of analysis be submitted to the Commission for adoption and inclusion in the relevant Codex standards following endorsement by the Codex Committee on Methods of Analysis and Sampling. The Group of Experts thanked Dr. Woidich and the Working Group for their contribution.

#### **FUTURE WORK (Agenda Item 10)**

93. The Chairman (Prof. Pilnik) summarized the work of the Group of Experts and pointed out that standards had been developed for the major products of interest in

international trade. Adequate analytical methods had also been proposed and endorsed by the Codex Committee on Methods of Analysis and Sampling.

94. The Group of Experts noted that there were no outstanding issues to warrant sessions of the Group in the near future and agreed to adjourn *sine die* and to ask the Commission's approval of that recommendation. The Group of Experts indicated that a number of areas would need attention in the future.

- Analytical methodology, chemiometry, identity control are being continuously improved and should be followed up on a permanent basis as they are essential to the work of the Group of Experts.
- Technological advances in the manufacturing of fruit juices and their implication for the definition of fruit juices would also be a topic for future discussion.
- Revisions and updating of standards and guidelines might become necessary to reflect changes in technology, regulatory practices, nutrition advice, consumer preference and marketing trends.

95. The Secretariat informed the Group that issues relating to a Committee adjourned *sine die* could be handled in accordance with Codex Procedural rules by the Codex and UN/ECE Secretariats if the Commission endorses the adjournment of the Group. The Secretariat also informed the Group that the possibility to establish the Group as a full Codex Committee under host government arrangements upon its reconvening would be explored, with the assistance of the UN/ECE Secretariat.

96. Upon its adjournment *sine die*, the Group of Experts expressed its highest appreciation to Professor Dr. W. Pilnik (the Netherlands) who had served as its Chairman since 1966. The Group praised the Chairman's dedication to the work of standardizing international fruit juices and the many contributions he had personally made to the progress of the Group in elaborating some 25 worldwide Codex standards for specific and general standards for fruit juices and nectars and vegetable juices, and the guidelines which had been elaborated on mixed fruit juices and mixed fruit nectars.

97. The Delegations of the Group of Experts noted with pride their close and long association with Prof. Dr. Walter Pilnik and wished him continued success in his international activities in the field of fruit juice manufacture.

### **SUMMARY STATUS OF WORK**

<b>Subject matter</b>	<b>Step</b>	<b>Action by:</b>	<b>Document Reference</b>
Draft General Standard for Vegetable Juice	8	Governments CAC 19th	ALINORM 91/14 Appendix II
Draft Guidelines for Mixed Fruit Juices	8	Governments CAC 19th	ALINORM 91/14 Appendix III
Draft Guidelines for Mixed Fruit Nectars	8	Governments CAC 19th	ALINORM 91/14 Appendix IV
Addition of Sugars to Fruit Nectars and Possible Consequential Changes in the General Standard for Fruit Nectars	-	Governments CAC 19th	ALINORM 91/14 Paragraphs 66-73
Methods for Carbon Dioxide, Essential Oils and Ethanol in Fruit Juices	-	CCMAS Governments CAC 19th	ALINORM 91/14 Paragraphs 91-92 Appendix V

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**DRAFT GENERAL STANDARD FOR VEGETABLE JUICES**<sup>1</sup>  
**(Advanced to Step 8)**

**1. SCOPE**

This Standard applies to all vegetable juices as defined below. It does not apply to vegetable juices for which specific Codex commodity standards exist.

**2. DESCRIPTION**

2.1 "Vegetable juice" is the liquid unfermented but fermentable product or lactic acid fermented product intended for direct consumption obtained from the edible part of one or more sound vegetables and preserved exclusively by physical means. The juice shall be free from skins, seeds and other coarse parts of the vegetables. It may be clear, turbid or pulpy. It may have been concentrated and reconstituted with water suitable for the purpose of maintaining the essential composition and quality factors of the juice.

2.2 Vegetables for the purpose of the standard are: the parts of edible plants including roots, corms and tubers (e.g. carrots, garlic and potatoes), stems and shoots (e.g. asparagus), leaves and flowers (e.g. spinach, cauliflower) and legumes (e.g. peas). Pumpkins and rhubarb are also considered as being vegetables for the purpose of this standard.

**3. ESSENTIAL COMPOSITION AND QUALITY FACTORS**

**3.1 Organoleptic Properties**

The product shall have the characteristic colour, aroma and flavour of the vegetables from which it has been prepared taking into consideration the addition of ingredients and possible lactic acid fermentation. Natural volatile constituents may be restored to the juice or nectars. They shall be derived from the same types of vegetables used in the manufacture of the product.

**3.2 Use of concentrate**

The addition of concentrated vegetable juice is permitted.

**3.3 Blanching and Washing**

The vegetables shall retain no more water from these operations than technologically unavoidable.

**3.4 Ingredients**

The following ingredients may be used:

- (a) Food grade salt as defined in the Codex Alimentarius,
- (b) Vinegar, except in vegetable juices treated by lactic acid fermentation,
- (c) Sugars in dry form and honey,
- (d) Seasoning, spices and herbs,
- (e) Fruit or fruit based products from which the essential elements of the fruit have not been extracted,
- (f) Whey or lactoserum having undergone lactic fermentation, not more than 100 g/kg.

<sup>1</sup> For the purpose of this standard, and at this time, "preservation by physical means" does not include ionizing radiation.

#### **4. FOOD ADDITIVES**

	<u>Maximum Level</u>
4.1 L-ascorbic acid	400 mg/kg in the final product
4.2 Citric acid	GMP
4.3 Lactic acid (not in products having undergone lactic acid fermentation)	GMP
4.4 Malic acid	GMP
4.5 Glutamic acid and its sodium or potassium salt	GMP
4.6 Natural flavour obtained from seasonings, spices, herbs and fruit juices	GMP
4.7 Carbon dioxide	GMP

#### **5. CONTAMINANTS**

	<u>Maximum Level</u>
5.1 Arsenic (As)	0.2 mg/kg
5.2 Lead (Pb)	0.3 mg/kg <sup>1</sup>
5.3 Copper (Cu)	5.0 mg/kg
5.4 Zinc (Zn)	5.0 mg/kg
5.5 Iron (Fe)	15.0 mg/kg
5.6 Tin (Sn)	200.0 mg/kg <sup>1</sup>
5.7 Sum of copper, zinc and iron	20.0 mg/kg
5.8 Sulphur dioxide	10.0 mg/kg
5.9 Mineral impurities insoluble in 10 per cent hydrochloric acid shall not exceed 100 mg/kg.	

<sup>1</sup> These limits remain under review, taking into account a sampling plan.

#### **6. HYGIENE**

6.1 It is recommended that the products covered by the provisions of this standard be prepared in accordance with the Recommended International Code of Hygienic Practice for Canned Fruit and Vegetable Products (Ref. No. CAC/RCP 2-1969) and the General Principles of Food Hygiene (Ref. No. CAC/RCP 1-1969, Rev. I) recommended by the Codex Alimentarius Commission.

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

(a) shall be free from microorganisms capable of development under normal conditions of storage, except that in products having undergone lactic acid fermentation, the microorganisms technologically necessary for this fermentation may be present.

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

## **7. LABELLING**

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

### **7.1 The Name of the Food**

The name of the food shall be "x juice" or "juice from x" in which x is the name(s) of the vegetable(s) used. In the case of juices made from two or more types of vegetables the product may be called "vegetable juice cocktail". If ingredients are used in quantities which characterize the product a declaration in the name of the food shall be made, e.g. [sweetened x juice] or "spiced x juice". If a juice has been obtained by lactic acid fermentation this fact shall be declared by naming the juice/nectar "lactic acid fermented" or by putting the words "obtained by lactic acid fermentation" in close proximity to the name of the food.

### **7.2 List of Ingredients**

7.2.1 A complete list of ingredients shall be declared on the label in accordance with Section 4.2 of the General Standard, except that water added for reconstitution of concentrates need not be declared.

7.2.2 If juices have been made from concentrates, this shall be declared in the list of ingredients as follows: "x juice made from concentrate" or "reconstituted x juice" or "x juice made from concentrated x juice".

### **7.3 Additional Requirements**

7.3.1 No vegetables or vegetable products may be represented pictorially on the label except those present in the product.

7.3.2 Where the product contains more than 2 g/kg of carbon dioxide the term "carbonated" shall appear on the label.

7.3.3 No claims shall be made in respect of "Vitamin C" nor shall the term "Vitamin C" appear on the label unless the product contains such quantity of "Vitamin C" as would be accepted by national authorities in the country in which the product is sold as warranting such claim or the use of such term.

7.3.4 Where the vegetable juice has been prepared from raw material treated with ionizing radiation, it shall be labelled in accordance with Section 5.2.2 of the General Standard.

### **7.4 Labelling of Non-Retail Containers**

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

## **8. METHODS OF ANALYSIS AND SAMPLING**

See CAC/Vol. X-Ed.1, Suppl. 4 (1989), pp. 15-18.

**DRAFT GUIDELINES FOR MIXED FRUIT JUICES**  
**(Advanced to Step 8)**

**1. SCOPE**

These guidelines apply to mixed fruit juices as defined in Section 2 below, for direct human consumption, preserved exclusively by physical means. For the purpose of this Standard and at this time, preservation by physical means does not include ionizing radiation.

**2. DESCRIPTION**

A mixed fruit juice is the unfermented but fermentable juice, pulpy, turbid or clear, intended for direct consumption, as obtained by a mechanical process, from two or more species of sound ripe fruits or the flesh thereof, preserved exclusively by physical means. The juices may have been concentrated and later reconstituted with water suitable for the purpose of maintaining their essential composition and quality factors.

**3. ESSENTIAL COMPOSITION AND QUALITY FACTORS**

**3.1 Soluble Solids**

The soluble fruit solids content of each fruit juice (exclusive of added sugars) should not be less than a value which corresponds to the soluble solids content of the ripe fruit as determined by refractometer at 20°C, uncorrected for acidity and read as °Brix on the International Sucrose Scale. However, in the case of fruit juices for which a Codex Standard has been elaborated, the minimum soluble fruit solids content stated therein should apply.

**3.2 Sugars**

One or more of the solid sugars, as defined by the Codex Alimentarius Commission, may be added. In the case of a fruit juice being reconstituted from concentrate, one or more of the sugars, as defined by the Codex Alimentarius Commission, may be added. The quantity of sugars added, calculated as dry sugar, should not exceed 100 g/kg. The addition of sugars should not be permitted when the juice has been acidified in accordance with Sections 4.1 and 4.2.

**3.3 Ethanol Content**

The ethanol content should not exceed 3 g/kg.

**3.4 Organoleptic Properties**

Natural volatile juice components may be restored to any juice obtained from the same type of fruits from which natural volatile juice components have been removed.

**3.5 Use of concentrates**

Only concentrates obtained from the same type of fruit as contained in the mixture may be used.

**4. FOODADDITIVES**

	<u>Maximum Level</u>
4.1 Citric acid	Limited by GMP

- 4.2 Malic acid
- 4.3 The addition of the acids mentioned in Sections 4.1 and 4.2 is not permitted when the juice contains sugars added in accordance with Section 3.2
- 4.4 Carbon dioxide Limited by GMP

## 5. **CONTAMINANTS**

	<u>Maximum Level</u>
5.1 Arsenic (As)	0.2 mg/kg
5.2 Lead (Pb)	0.3 mg/kg <sup>1</sup>
5.3 Copper (Cu)	5.0 mg/kg
5.4 Zinc (Zn)	5.0 mg/kg
5.5 Iron (Fe)	15.0 mg/kg
5.6 Tin (Sn)	200.0 mg/kg <sup>1</sup>
5.7 Sum or copper, zinc and iron	20.0 mg/kg
5.8 Sulphur dioxide	10.0 mg/kg

<sup>1</sup> These limits remain under review, taking into account a sampling plan.

## 6. **HYGIENE**

6.1 It is recommended that the products covered by the provisions of this standard be prepared in accordance with the Recommended International Code of Hygienic Practice for Canned Fruit and Vegetable Products (Ref. No. CAC/RCP 2-1969) and the General Principles of Food Hygiene (Ref. No. CAC/RCP 1-1969, Rev.1) recommended by the Codex Alimentarius Commission.

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

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

## 7. **WEIGHTS AND MEASURES**

### 7.1 Fill of Container

#### 7.1.1 Minimum Fill

The juice should occupy not less than 90% v/v of the water capacity of the container. The water capacity of the container is the volume of distilled water at 20°C which the sealed container will hold when completely filled.

## 8. **LABELLING**

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

### 8.1 The Name of the Food

8.1.1 The name of the food to be declared on the label should be "fruit juice" or "mixed fruit juice", or "blended fruit juice" where either the word "fruit" is replaced by the names

of the types of fruits used in descending order of their quantitative predominance in the product, or this name is followed by the types of fruits in the same order. If more than two juices are used, their names may be given separately on the label in proximity to the name of the food. In this case the name of the product should be denominated "mixed fruit juice" or "blended fruit juice".

8.1.2 If the quantity of added sugar or sugars, calculated as dry sugar, exceeds 15 g/kg of the product, the words "x added" should plainly and conspicuously accompany the name of the product where "x" represents the name or names of the sugar or sugars added, or the word "sugar(s)". Instead of the term "x added" the term "sweetened" may be used.

8.1.3 In the case of mixed fruit juice made wholly or partially from concentrated juice, the fact of reconstitution should be declared as follows: "Mixed x juice made from concentrate or from concentrated juices" where "x" represents the names of all fruits which have been concentrated. This information should be given in close proximity to the name of the food or in another prominent position on the label.

## 8.2 List of Ingredients

8.2.1 A complete list of ingredients shall be declared on the label in descending order of proportion and in accordance with the relevant requirements applicable to the individual juices. For this purpose, concentrated fruit ingredients shall be calculated as single strength. Water and volatiles added for reconstitution of the juice need not be declared. Where, however, information has been included in the name of the food (Section 4.1.1) it need not be repeated in the list of ingredients. In this case, it is sufficient to refer to fruit juices with an indication, as necessary, of whether these have been prepared from concentrates. If lemon or lime juice have been added for the purpose of acidification, they should be so declared.

## 8.3 Additional Requirements

The following additional specific provisions shall apply:

8.3.1 No fruit or fruit juice should be represented pictorially on the label except the species of fruit present in the product.

8.3.2 No claim shall be made in respect of "Vitamin C" nor shall the term "Vitamin C" appear on the label unless the food contains such quantity of "Vitamin C" as would be accepted by national authorities in the country in which the food is sold, as warranting such claim or the use of such term.

8.3.3 Where the food contains more than 2 g/kg of carbon dioxide the term "carbonated" shall appear in close proximity to the name of the food and carbon dioxide shall also be declared in the list of ingredients.

8.3.4 Where the fruit juice requires to be kept under conditions of refrigeration, there shall be information for keeping and, if necessary thawing of the food.

8.3.5 Where the fruit juice has been prepared from raw materials treated with ionizing radiation, it shall be labelled in accordance with Section 5.2.2 of the General Standard.

## 8.4 Labelling of Non-Retail Containers

Information for non-retail containers shall either be given on the container or in accompanying documents, except that the name of the product, lot identification and name and address of the manufacturer or packer shall appear on the container. However, lot identification and the name and address of the manufacturer or packer may

be replaced by an identification mark, provided that such mark is clearly identifiable with the accompanying documents.

**9. METHODS OF ANALYSIS AND SAMPLING**

See CAC/Vol. X-Ed.1, Suppl. 4 (1989), pp. 15-18.

**DRAFT GUIDELINES ON MIXED FRUIT NECTARS**  
**(Advanced to Step 8)**

**1. SCOPE**

These guidelines apply to mixed fruit nectars as defined in Section 2 below, for direct human consumption, preserved exclusively by physical means. For the purpose of this Standard and at this time, preservation by physical means does not include ionizing radiation.

**2. DESCRIPTION**

A mixed fruit nectar is the unfermented but fermentable pulpy or non-pulpy product, intended for direct consumption, obtained by blending the fruit juice and/or total edible part ground and/or sieved of two or more species of sound ripe fruits, concentrated or unconcentrated, with water and sugars or honey, and preserved exclusively by physical means. In case of fruit with a high sugar content the addition of sugar may be omitted.

**3. ESSENTIAL COMPOSITION AND QUALITY FACTORS**

**3.1 Minimum Content of Fruit Ingredients**

The product should contain not less than 50% m/m of single strength fruit ingredient or the equivalent derived from any concentrated fruit ingredient, except in cases where high acidity, strong flavour or high pulp content make lower content necessary. In no case should the content of fruit ingredient be less than 25% m/m.

**3.2 Sugars**

3.2.1 If sugars are added they must be as defined by the Codex Alimentarius Commission.

3.2.2 Honey, as defined by the Codex Alimentarius Commission, may be used if it is the sole added sweetening ingredient.

**3.3 Soluble Solids**

The soluble solid content of the product should be not more than 20% m/m as determined by refractometer at 20°C, uncorrected for acidity and read as °Brix on the International Sucrose Scale.

**3.5 Ethanol Content**

The ethanol content should not exceed 3 g/kg.

**4. FOOD ADDITIVES**

	<u>Maximum Level</u>
4.1 Citric acid	Limited by GMP
4.2 Malic acid	
4.3 L-Ascorbic acid	400 mg/kg in the final product
4.4 Carbon dioxide	Limited by GMP

## **5. CONTAMENANTS**

	<u>Maximum Level</u>
5.1 Arsenic (As)	0.2 mg/Kg
5.2 Lead (Pb)	0.3 mg/Kg <sup>1</sup>
5.3 Copper (Cu)	5.0 mg/Kg
5.4 Zinc (Zn)	5.0 mg/Kg
5.5 Iron (Fe)	15.0 mg/Kg
5.6 Tin (Sn)	200.0 mg/Kg <sup>1</sup>
5.7 Sum of copper, zinc and iron	20.0 mg/Kg
5.8 Sulphur dioxide	10.0 mg/Kg

## **6. HYGIENE**

6.1 It is recommended that the products covered by the provisions of this standard be prepared in accordance with the Recommended International Code of Hygienic Practice for Canned Fruit and Vegetable Products (Ref. No. CAC/RCP 2-1969) and the General Principles of Food Hygiene (Ref. No. CAC/RCP 1-1969, Rev.1) recommended by the Codex Alimentarius Commission.

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

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

## **7. WEIGHTS AND MEASURES**

### **7.1 Fill of container**

#### **7.1.1 Minimum Fill**

The nectar should occupy not less than 90% v/v of the water capacity of the container. The water capacity of the container is the volume of distilled water at 20°C which the sealed container will hold when completely filled.

## **8. LABELLING**

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

### **8.1 The Name of the Food**

8.1.1 The name of the food to be declared on the label should be either "fruit nectar" or "mixed fruit nectar" where either the word fruit is replaced by the names of the types of fruits used in descending order of their quantitative predominance or the name is followed by the types of fruits in this order. If more than two types of fruit are used these names may be given separately in the proximity to the name of the product. In this case the name of the product should be "mixed fruit nectar".

8.1.2 The words "Minimum fruit content x%" should appear in close proximity to the name of the product where "x" is the actual minimum percentage of fruit ingredient calculated to single strength in the final product.

<sup>1</sup> These limits remain under review, taking into account a sampling plan.

## 8.2 List of Ingredients

8.2.1 A complete list of ingredients, including added water, should be declared on the label in descending order of proportion in accordance with the relevant requirements applicable to the individual nectars. For this purpose concentrated fruit ingredients shall be calculated to single strength. Where, however, information has been included in the name of the food (Section 8.1.1), it need not be repeated in the list of ingredients.

8.2.2 In the case of mixed fruit nectar, containing concentrated fruit ingredients, the fact of reconstitution should be declared in the list of ingredients as follows: "x made from concentrate" or "x made from concentrated x" where "x" is the name of the single strength fruit ingredient.

## 8.3 Additional Requirements

8.3.1 No fruit or nectar may be represented pictorially on the label except the species of fruits used in the product or the nectar therefrom.

8.3.2 When the food contains honey the declaration "contains honey" should appear in close proximity to the name of the food.

8.3.3 No claim should be made in respect of "Vitamin C" nor should the term "Vitamin C" appear on the label unless the food contains such quantity of "Vitamin C" as would be accepted by national authorities in the country in which the food is sold, as warranting such claim or the use of such term.

8.3.4 Where the food contains more than 2 g/kg of carbon dioxide the term "carbonated" should appear in close proximity to the name of the food and carbon dioxide should also be declared in the list of ingredients.

8.3.5 Where fruit nectars require to be kept under conditions of refrigeration, there should be information for keeping and, if necessary, thawing of the food.

8.3.6 Where the fruit nectar has been prepared from raw materials treated with ionizing radiation, it should be labelled in accordance with Section 5.2.2 of the General Standard.

8.3.7 Where no sugar has been added to the fruit nectars, no claim shall be made in this respect.

## 8.4 Labelling of Non-Retail Containers

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

## 9. METHODS OF ANALYSIS AND SAMPLING

See CAC/Vol. X-Ed.1, Suppl. 4 (1989), pp. 15-18.

**REPORT OF THE *AD HOC* WORKING GROUP ON METHODS OF ANALYSIS**

The Working Group on Methods of Analysis met under the Chairmanship of Dr. H. Woidich (Austria). Participants included members of the delegations of Austria, Finland, France, Israel, Switzerland, UK, USA, CEN and the Joint Secretariat.

**Revision of Methods of Analysis for Fruit Juices**

The Working Group noted that all the methods of analysis for fruit juices proposed by the Group, and agreed to by the Committee, except those for carbon dioxide, ethanol and essential oils had been endorsed by the Codex Committee on Methods of Analysis (ALINORM 89/23). The following recommendations were made.

1. **Determination of Carbon dioxide**

The Working Group expressed the view that the IFJU method No. 42 (1976) is suitable for determination of CO<sub>2</sub> in fruit juices. The method is a little complicated but gives good results for fruit juices which contain up to a maximum of 3 g CO<sub>2</sub>/litre. In cases where the CO<sub>2</sub> content is more than 3 g CO<sub>2</sub>/litre, the pressure method should be used for determination of CO<sub>2</sub> but this method is not specific.

2. **Determination of Ethanol**

The Working Group noted that fruit juices contain only small amounts of ethanol, which can be determined fairly accurately by the enzymatic method. The Group recommended the IFJU method No. 52 (1983) as Codex Type II Method for determination of ethanol. The method is expensive but very exact and could pose a problem for adoption by developing countries.

The Group noted the availability of a Gas Chromatographic method for determination of ethanol and agreed to propose it as an alternate method (Type III) after it is ring tested.

3. **Determination of essential oils**

The Working Group noted that two methods i) steam distillation method and ii) Direct titration with bromate (Scott) are available for determination of essential oils in fruit juices. Since the provision for essential oils in fruit juices is expressed as ml/kg, the Group expressed the view that the steam distillation method would be more suitable. Both the methods give similar values only in the case of orange juice but some variable values with other juices.

The Group recommended both i) IFJU method No. 45A (1972) (steam distillation method according to Clevenger) and ii) Direct titration method with bromate (Scott) for determination of essential oils in fruit juices (IFJU method No. 45B (1972)).

4. **Use of Simpler Methods of Analysis**

The Working Group noted except for a few, most of the methods of analysis are straightforward and do not pose a problem for adoption by countries without sophisticated equipment.

5. **Level for Cadmium in Fruit Juices**

In the absence of adequate data on the subject the Working Group was not in a position to propose limits for cadmium in fruit juices.

6. Reference for AOAC methods for determination of Lead

The Working group was informed that the correct reference in ALINORM 89/23 p. 32 for determination of lead in fruit juices should read as AOAC 25.061-25.067.