

# codex alimentarius commission



FOOD AND AGRICULTURE  
ORGANIZATION  
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**ALINORM 03/39**

**JOINT FAO/WHO FOOD STANDARDS PROGRAMME  
CODEX ALIMENTARIUS COMMISSION**

Twenty-fifth Session

Rome, 30 June - 5 July 2003

**REPORT OF THE SECOND SESSION OF THE  
AD HOC CODEX INTERGOVERNMENTAL TASK FORCE ON  
FRUIT AND VEGETABLE JUICES**

Rio de Janeiro, Brazil, 23-26 April 2002

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**CX 5/100**

**CL 2002/14-FJ**  
**May 2002**

**TO** : - Codex Contact Points  
- Interested International Organizations

**FROM** : Secretary, Codex Alimentarius Commission, Joint FAO/WHO Food Standards Programme,  
FAO, 00100 Rome, Italy

**SUBJECT** : **Distribution of the Report of the 2<sup>nd</sup> Session of the *Ad Hoc* Codex Intergovernmental  
Task Force on Fruit and Vegetable Juices**

## **REQUEST FOR COMMENTS AND INFORMATION**

### **Proposed Draft Standards at Step 3 of the Procedure**

1. ***Proposed Draft Codex General Standard for Fruit Juices and Nectars*** (para. 43 and Appendix II)

Governments wishing to submit comments on the above should do so in writing to the Secretary, Codex Alimentarius Commission, Joint FAO/WHO Food Standards Programme, FAO, Viale delle Terme di Caracalla, 00100 Rome, Italy (Fax: +39 (06) 5705 4593; E-mail: [codex@fao.org](mailto:codex@fao.org)), **before 30 SEPTEMBER 2002.**

2. ***Proposed Draft Revised Codex General Standard for Vegetable Juices*** (para. 47 and Appendix III)

Governments wishing to submit comments on the above should do so in writing to the Secretary, Codex Alimentarius Commission, Joint FAO/WHO Food Standards Programme, FAO, Viale delle Terme di Caracalla, 00100 Rome, Italy (Fax: +39 (06) 5705 4593; E-mail: [codex@fao.org](mailto:codex@fao.org)), **before 31 DECEMBER 2002.**

## SUMMARY AND CONCLUSIONS

The 2<sup>nd</sup> Session of the *Ad Hoc* Codex Intergovernmental Task Force on Fruit and Vegetable Juices reached the following conclusions:

### MATTERS OF INTEREST TO THE COMMISSION

The Task Force:

- Agreed to return the *Proposed Draft Codex General Standard for Fruit Juices and Nectars* and the *Proposed Draft Revised Codex General Standard for Vegetable Juices* to Step 3 for circulation and further comments (paras. 43 and 47).
- Decided to reconvene the Drafting Group on the Revision of the Standard with a view to revising the *Proposed Draft Codex Standard for Fruit Juices and Nectars*, particularly those controversial issues and undecided provisions of the Proposed Draft Standard, based on the written comments submitted at the 2<sup>nd</sup> session and in response to CL 2002/14-FJ (paras. 28-29, 31 and 43-46).
- Forwarded methods of analysis for fruit and vegetable juices and nectars to the Codex Committee on Methods of Analysis and Sampling for endorsement (para. 51).

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**REPORT OF THE 2<sup>ND</sup> SESSION OF THE  
AD HOC CODEX INTERGOVERNMENTAL TASK FORCE ON FRUIT AND VEGETABLE JUICES**

**INTRODUCTION**

1. The 2<sup>nd</sup> Session of the *Ad Hoc* Codex Intergovernmental Task Force on Fruit and Vegetable Juices was held in Rio de Janeiro, from 23 – 26 April 2002 at the kind invitation of the Government of Brazil. The Session was chaired by Dr. Luiz Carlos de Oliveira, Secretary of Animal and Plant Health Protection and Inspection, Ministry of Agriculture, Livestock and Food Supply. For certain Agenda items, the Session was chaired by Dr. Rudi Braatz, Division Chief, Sanitary Affairs, Ministry of Agriculture and Supply. It was attended by delegates from 23 Member countries and observers from 8 international organizations. The list of participants is attached to this report as Appendix I.

**OPENING OF THE SESSION**

2. Mr. Pedro Cabral, Federal Delegate at Rio de Janeiro, Ministry of Agriculture, Livestock and Food Supply, opened the Session on behalf of the Government of Brazil. He noted the importance of the work of the Task Force, especially for those juice producing countries, and wished all participants the utmost success in their deliberations and an enjoyable stay in Rio de Janeiro.

**ADOPTION OF THE AGENDA (Agenda Item 1)<sup>1</sup>**

3. The Task Force adopted the Provisional Agenda as proposed.

**MATTERS OF INTEREST TO THE TASK FORCE ARISING FROM THE 24<sup>TH</sup> SESSION OF THE CODEX ALIMENTARIUS COMMISSION AND OTHER CODEX COMMITTEES (Agenda Item 2)<sup>2</sup>**

4. The Task Force noted that the document was presented for information only and therefore, it did not need to take any action on the matters contained therein.

**PROPOSED DRAFT CODEX GENERAL STANDARD FOR FRUIT JUICES AND NECTARS (Agenda Item 3a)<sup>3</sup>**

**GENERAL CONSIDERATIONS**

5. The Task Force had an exchange of views concerning the convenience of merging the Proposed Draft General Standard for Fruit Juices and Nectars with the Proposed Draft Revised General Standard for Vegetable Juices. Several delegations were of the opinion that the two documents should be considered separately while keeping the same format.

6. The Task Force noted that the inclusion of vegetable juices in the Proposed Draft General Standard for Fruit Juices and Nectars might envisage some substantial changes in the Proposed Draft, especially as regards the additives, contaminants and analytical methods that might need separate sections. It was further noted that different manufacturing practices applied to vegetable juices which allowed, for instance, the addition of greater percentages of water as well as substances like spices, salts, etc. as opposed to fruit juices that should be kept as natural as possible. In addition, it was pointed out that there were not only technical but also economic reasons to maintain both texts separated since international trade in fruit juices was much more significant than vegetable juices.

7. In view of the above discussion, the Task Force agreed that the Proposed Draft General Standard for Fruit Juices and Nectars and the Proposed Draft Revised General Standard for Vegetable Juices would be considered separately, on the understanding that they might be combined at a later stage.

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<sup>1</sup> CX/FJ 02/1

<sup>2</sup> CX/FJ 02/2

<sup>3</sup> CL 2001/33-FJ, App. III and comments submitted by Brazil, Canada, Cuba, France, Israel, Italy, New Zealand, Poland, Russia, Switzerland, The Netherlands, The United States of America, Turkey, Uruguay, Association of the Industry of Juices and Nectars from Fruits and Vegetables of the European Union, European Community, International Council of Grocery Manufacturers Associations, International Federation of Fruit Producers, International Soft Drink Council, and World Processing Tomato Council (CX/FJ 02/4-Part I); Canada, Cuba, France, New Zealand, Russia, Switzerland, The Netherlands, The United States of America, International Council of Grocery Manufactures Association; International Federation of Fruit Juice Producers (CX/FJ 02/4-Part II); The United States of America (CRD 1); Thailand (CRD 2); Japan (CRD 3); Australia (CRD 4); Proposal of Brazil on a Proposed Draft Codex Standard for Fruit Juices, Nectars and Vegetable Juices (CRD 5); India (CRD 6); Proposals of the Working Group on Food Additives and Processing Aids Provisions (CRD 7); European Community (CRD 9); Proposed Approach to the Development of Brix Data with respect to Fruit and Vegetable Juices (CRD 10); Mexico and Dominican Republic (CRD 11); Proposals of the Working Group on Brix Levels (CRDs 12 and 14); European Community (CRD 13).

8. There was also a proposal from the delegation of Mexico supported by Dominican Republic to develop a single standard for fruit juices and nectars containing three separate sections.

### **SPECIFIC CONSIDERATIONS**

9. The Task Force revised the Proposed Draft Codex General Standard for Fruit Juices and Nectars section by section and made the following amendments:

#### **Section 1 – Scope**

10. The Task Force had an exchange of views on the necessity of the footnote. Some delegations were of the opinion that it was necessary to make it clear that provisions laid down in this Standard also applied to fruit juices for further processing. Other delegations felt that the Standard should not apply to the fruit juice intended for further processing as it might need different processes from those applied to fruit juices when sold as such.

11. The Task Force agreed to amend the Scope to make it clear that the Standard applied to all products defined in Section 2.1. Consequently, the footnote was deleted as the amended text adequately covered the above concern.

#### **Section 2.1.1 Fruit Juice**

##### First Paragraph

12. Although it was questioned whether the point had been included in the record of the previous session, the Task Force recalled that it was agreed that directly expressed fruit juices (Section 2.1.1.1) shall be obtained only by mechanical extraction processes while juices obtained by reconstituting concentrated fruit juices and concentrated fruit juices (Sections 2.1.1.2 and 2.1.2) allowed for extraction methods other than mechanical and that both type of juices should be included under Section 2.1.

13. The Task Force agreed to replace the first paragraph as proposed by the International Federation of Fruit Juice Producers in CX/FJ 02/4-Part I. It was noted that the term “sound condition” better applied to fruits in storage, which could be maintained in such condition by suitable means while not keeping them necessarily fresh and that post harvest surface treatments which prevented the produce from deterioration were not necessarily physical processes. Consequently, the bracketed word “physical” was removed from this paragraph. It was further noted that “sound condition” also covered frozen fruits.

##### Second Paragraph

14. The Task Force had an exchange of views on the need to include a specific provision for citrus fruits juice by establishing that the juice must come from the endocarp. It was noted that extraction processes available up to date could not entirely avoid the presence of some parts or components of peel in this type of juice. In addition, it was discussed whether this issue was adequately covered by the first paragraph of this Section in which it was stated that the juice should be obtained from the edible part of the fruit as well as by the present paragraph in which the presence of such elements should be limited to Good Manufacturing Practices.

15. In view of the above discussion, the Task Force agreed to amend the first sentence of the paragraph in order to allow the presence of some parts or components of pips, seeds and peel which could not be removed by Good Manufacturing Practices, as current manufacturing practices could not entirely remove those elements in the final product. It was further agreed that the second sentence of the paragraph be deleted as it was already covered by the amendment introduced in the first sentence.

##### Third and Fourth Paragraphs

16. A number of delegations expressed concern on the use of certain processes (i.e. ion exchange, chemical solvent extractions, etc.) in the preparation of fruit juices, which could modify the organoleptical and nutritive properties of the juice. Other delegations noted the need for use of these processes. The delegation of Belgium, supported by Morocco, expressed its reservation regarding the use of chemical solvents in the preparation of fruit juices.

17. In view of the above discussion, the Task Force agreed to amend the first sentence of the third paragraph to make it clear that irrespective of the nature of the juice extraction processes, the essential physical, chemical, organoleptical and nutritive characteristics of the juice should be maintained and that it was not necessary to include a list of examples of methods of manufacture. Therefore, the second sentence citing those permitted or excluded extraction processes was deleted as they were already covered by the amended text.

18. The delegation of Spain, speaking on behalf of the European Community, expressed a general reserve on this provision, reaffirming that in the EC Member States only physical means of extraction were permitted.

19. The Task Force further agreed to combine the third paragraph with the fourth paragraph. It agreed to remove the brackets around the word “physical” as the addition or restoration of aromatic substances, volatile flavour components, pulp and cells must only be obtained by suitable physical means.

20. However, the Task Force could not come to an agreement on the removal of the word “added” which was placed in square brackets. In this regard, a number of delegations expressed the view that the term “added” might lead to excessive additions of aromatic and volatile flavour components, pulp and cells, etc. and therefore, the addition of these substances should be limited to the term “restored”. Other delegations indicated that aromatic substances and volatile components might need to be added as in practice, it was difficult to restore the exact amount of volatile and/or aromatic substances to the juice.

21. The Task Force noted that in the case of pulps and cells, they did not meet the term “restoration” as they did not come only from the juice being prepared but from different lots of juices of the same fruit and therefore, the term “added” better reflected current industry practices in this respect.

22. The Task Force also agreed to make a separate entry for single juice and mixed juice for the purpose of clarity.

#### **Section 2.1.2 Concentrated Fruit Juice**

23. On the basis of its earlier decision (see para. 17), the Task Force deleted the third sentence referring to suitable processes listed Section in 2.1.1.

#### **Section 2.1.3 Water Extracted Fruit Juice**

24. The Task Force removed the brackets of this Section and amended the text to specify that this process applied to pulpy whole fruit, which could not be extracted by any physical means, and dehydrated whole fruit.

25. The Task Force did not agree on the inclusion of “pulp and cells” under this definition as it felt that they were already envisaged in Section 2.1.1.2 Fruit Juice from Concentrate. In addition, some delegations were of the view that the inclusion of “pulp and cells” might allow “pulp wash”, the secondary extraction of the pulp after the primary extraction of the whole fruit, to be sold as fruit juice.

#### **Section 2.1.4 Fruit Purée**

26. The Task Force agreed to remove the bracketed word “physical” as some treatments applied to remove the peel of fruits might not be limited to mechanical means. It also agreed to place the term “added” in square brackets for consistency (see para. 20).

#### **Sections 3.1.1 (d) Minimum Brix Level for Directly Expressed Juice and 3.1.1 (e) Minimum Brix Level for Reconstituted Juice and/or Purée Content for Fruit Nectars**

27. The Task Force agreed to replace the Tables in Sections 3.1.1(d) and 3.1.1(e) of Appendix III of CL 2001/33-FJ with those contained in CRD 14 listing Brix values on which the Task Force reached consensus and others on which further discussion would be necessary. It also agreed to transfer these Sections to a separate Annex to the Standard.

28. The Task Force agreed with the following approach with regard to the development of Brix data in respect of fruit and vegetable juices for which consensus was not reached:

- Brix values provided may be those obtained by governments, industry trade associations, individual firms and academic/research organizations. As a response to a CL, Brix values will be submitted through governments or through recognized international intergovernmental organizations or international non-governmental organizations.
- Brix values provided should differentiate between domestically produced and imported products.
- Brix values provided for domestically produced product should be accompanied by information on the amount of product grown/harvested.
- When available, Brix values should be differentiated by season.
- Preferably, Brix values should be submitted with accompanying information that specifies the temperature at which the determination is made and whether or not the Brix value is acid corrected.
- Raw data should be provided along with summaries of the data. When summaries only are provided, the summaries should provide information on the number of observations on which the summary is based and the amount of product grown/harvested.

- The working group should base its recommendation for a Brix value on the mean Brix of directly expressed fruit juice over one or more growing seasons. In determining this value they should consider the volume of product covered by the data presented and base their determination on a fair but proportional evaluation of all data presented to the Task Force.

29. The Task Force decided to assign the responsibility for the revision and updating of the Brix values for both fruit and vegetable juices and minimum fruit juice and/or purée content for nectars to the Drafting Group on the Revision of the Standard with the understanding that a consolidated list would be presented for consideration by the Task Force at its next meeting (see para.44). It was agreed that the Drafting Group would clarify the concept of "fair but proportional evaluation" to be used for its determinations, based on proposals submitted by Member States and recognized international organizations.

### **Section 3.1.2 Other Permitted Ingredients**

30. The Task Force agreed to remove the square brackets around the sentence in the title.

#### **Section 3.1.2(a) Sugars**

31. The Task Force discussed the need to establish a limit for the addition of sugars to fruit juices (Sections 2.1.1.2, 2.1.2 and 2.1.3), nectars (Section 2.1.6) and purées (Sections 2.1.4 and 2.1.5) and decided to assign the task of evaluating this issue to the Drafting Group on the Revision of the Standard (see para. 44).

#### **Section 3.1.2(b) Syrups**

32. A number of delegations expressed concern on the addition of syrups, including sugars from fruit and honey, to the concentrated fruit juice as this might lead to fraudulent practices. The Task Force noted that the addition of these products to the concentrated fruit juice referred to the juice destined for final consumers and not to those used as industrial inputs. It was also noted that the General Standard for the Labelling of Prepackaged Foods applied to the labelling of all prepackaged foods to be offered as such to the consumer or for catering purposes.

33. The Task Force agreed to include concentrated fruit purée (Section 2.1.5) as a product to which sugars and syrups could be added. The Task Force also agreed that honey and/or sugars derived from fruits might be added only to fruit nectars as defined in Section 2.1.6.

34. In view of the above, the Task Force agreed to insert a footnote at the end of Sections 3.1.2(a) and 3.1.2(b) to make it clear that the addition of sugars, syrups and honey applied only to products intended for sale to the consumer or for catering purposes.

#### **Section 3.1.2(c) Lemon/Lime Juice**

35. The Task Force had an exchange of views on the use of lemon and/or lime juice and their concentrates as acidifying agents to unsweetened juices, nectars and purées as defined in Section 2.1. A number of delegations were in favour of this proposal indicating that they should not be considered as blended juices but as single juices without declaration of lemon juice as part of the name of the product provided that the added substance be included in the list of ingredients on the label. However, other delegations disagreed with this view and pointed out that this practice might have a negative impact on low acid fruit juices and that the use of juice as acidulants might modify the natural characteristics of the juice. In consequence, the Task Force decided to keep the Section in square brackets for further consideration.

#### **Section 3.1.2(e) *Citrus reticulata***

36. Some delegations noted that the addition of juice of *Citrus reticulata* in orange juices did not need to be subject to labelling requirements to reflect international marketing practices in this commodity. It was pointed out that the Codex Standard for Orange Juice (CODEX STAN 45-1981) required labelling declaration for juices of varieties of *Citrus reticulata* when added to orange juice.

37. The Task Force could not reach an agreement on this issue and therefore, it decided to maintain the sentence "not subject to ingredient labelling requirements" in square brackets.

#### **Section 3.1.2(f) Tomato Juice**

38. The Task Force agreed to remove the brackets around the word "spices" while introducing a new Section 7.1.2.13 by which "where tomato contains spices in accordance with 3.1.2(f), the term "spiced" shall appear on the label near the name of the food". It also agreed to add "aromatic herbs (and their natural extracts)" to Section 3.1.2(f).



#### Section 4 – Food Additives

39. The Task Force agreed to replace the current list of food additives in Section 4 of Appendix III of CL 2001/33-FJ with those contained in CRD 7. The Task Force had time only to consider a few of the food additives and recognized that it would have to address the remainder of the list at its next session. With respect to those additives which were considered, the Task Force made the following amendments:

40. With regard to the antioxidants, the Task Force agreed to the inclusion of the salts of ascorbic acid (INS 300-303) for use in fruit juices at level of Good Manufacturing Practice (GMP).

41. The Task Force also agreed to the inclusion of sulphur dioxide (INS 220) at 50 mg/l. The delegations of Switzerland and Belgium expressed their concern on the use of this additive due to its potential allergenicity. In this regard, the Task Force noted that sulphite in concentrations of 10 mg/kg or more were subject to mandatory labelling requirements in the Codex General Standard for the Labelling of Prepackaged Foods.<sup>4</sup> The Delegation of Germany pointed out that this compound was considered as a contaminant rather than a food additive in the current standards with a maximum level of 10 mg/l. It was of the view that a maximum level of 50 mg/l was not justified for all products to be covered by the Standard.

42. With regard to the acidity regulators the Task Force could not agree on the use of citric acid for uses in fruit juices and agreed to leave this issue in square brackets. The Task Force agreed that the salts of citric acid (INS 331i, 331ii; 332i, 332ii and 333) for use in fruit nectars at 5 g/l should be removed as these salts were not currently listed in the Codex General Standard for Food Additives (GSFA) for use in fruit nectars. It was also pointed out that the salts were not acidifying agents. The delegation of Cuba was of the view that citric acid should be used in fruit juices and nectars in accordance with GMP.

#### STATUS OF THE PROPOSED DRAFT CODEX GENERAL STANDARD FOR FRUIT JUICES AND NECTARS

43. The Task Force agreed to return the Proposed Draft Codex General Standard for Fruit Juices and Nectars to Step 3 (see Appendix II) for circulation and comments.

44. The Task Force decided to reconvene the Drafting Group on the Revision of the Standard under the chairmanship of Brazil, with the assistance of Australia, Cuba, France, Germany, Mexico, Spain, Thailand, the Netherlands, the United States of America and IFU. It was noted that the Drafting Group was opened to all member countries and interested international organizations in observer status with Codex. The Delegation of the United States noted that it would be important for the countries holding various views at the issues at hand to attend the meeting of the Drafting Group.

45. The Task Force agreed that the Drafting Group would primarily focus its efforts on those controversial issues and undecided provisions of the Standard (see also paras. 29 and 31). The Drafting Group would consider written comments submitted at the current meeting as well as additional comments submitted at Step 3.

46. The Task Force further agreed that the revised Proposed Draft Standard to be considered at its next Session would include a clear explanation and justification in regard to recommendations made by the Drafting Group.

#### PROPOSED DRAFT REVISED CODEX GENERAL STANDARD FOR VEGETABLE JUICES (Agenda Item 3b)<sup>5</sup>

47. The Task Force was unable to consider the Proposed Draft Revised Standard and therefore, it agreed to return it to Step 3 for circulation, further comments and consideration at its next session (see Appendix III).

48. The Task Force noted that those recommendations made by the Drafting Group on the Revision of the Standard for Fruit Juices and Nectars (see para. 44), which could be applicable to vegetable juices and nectars might facilitate the revision of the Proposed Draft Revised General Standard on Vegetable Juices at the next session of the Task Force.

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<sup>4</sup> CODEX STAN 1-1985 Rev. 1-1991, Section 4.2.1.4.

<sup>5</sup> CL 2001/33-FJ App. IV and comments submitted by Canada, Cuba, New Zealand, Poland, Russia, Switzerland, The Netherlands, the United States of America, Turkey, International Federation of Fruit Juice Producers (CX/FJ 02/5); The United States of America (CRD 1); Thailand (CRD 2); Proposal of Brazil on a Proposed Draft Codex Standard for Fruit Juices, Nectars and Vegetable Juices (CRD 5); India (CRD 6) ; Proposals of the Working Group on Food Additives and Processing Aids Provisions (CRD 7); Proposed Approach to the Development of Brix Data with respect to Fruit and Vegetable Juices (CRD 10).

**METHODS OF ANALYSIS AND SAMPLING FOR FRUIT AND VEGETABLE JUICES (Agenda Item 3 c)<sup>6</sup>**

49. The Task Force recalled that at its previous session decided to set up a Drafting Group on Methods of Analysis and Sampling led by Canada with the participation of Brazil, Spain, the United States of America and IFU aimed at revising and updating the methods of analysis and sampling for fruit and vegetable juices and nectars with a view to presenting a consolidated list at the next session of the Task Force.<sup>7</sup>

50. The Chairperson of the Drafting Group summarized the discussion of the Drafting Group. She informed that the Drafting Group agreed that old methods specifically related to fruit juices be taken out from the Codex Alimentarius Volume 13 and be substituted by new proposed methods. She also informed that the Drafting Group decided not to propose any specific methods for determination of food additives and contaminants with the understanding that this would be elaborated by the Codex Committee on Food Additives and Contaminants. In addition, she pointed out that following the decision of the Task Force to develop two separate standards for fruit juices and nectars and vegetable juices and nectars respectively (see para. 7), the methods of analysis were revised to separate those corresponding to fruit juices and nectars from vegetable juices and nectars.

51. The Task Force endorsed the decisions of the Drafting Group as contained in CRD 15 and agreed that the proposed methods would be inserted into the relevant sections of the Proposed Draft Codex General Standard for Fruit Juices and Nectars and the Proposed Draft Revised General Standard for Vegetable Juices. It also agreed to forward the proposed methods with the additional information as contained in Appendix II of CRD 15 to the Codex Committee on Methods of Analysis and Sampling for endorsement.

**OTHER BUSINESS AND FUTURE WORK (Agenda Item 4)**

52. The Task Force noted that there was no other business and future work to discuss.

**DATE AND PLACE OF THE NEXT SESSION (Agenda Item 5)**

53. The Task Force was informed that the next session of the Task Force was tentatively scheduled to be held in Brazil from 6-9 May 2003, subject to confirmation between the Host Government and the Codex Secretariat.

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<sup>6</sup> CL 2001/44-FJ; and comments submitted by Canada, Cuba, France, Spain, South Africa, Switzerland and the United States of America (CX/FJ 02/6); Thailand (CRD 2); Report of the Drafting Group on Methods of Analysis and Sampling (CRDs 8 and 15).

<sup>7</sup> ALINORM 01/39 para. 29

**SUMMARY STATUS OF WORK**

<b>Subject</b>	<b>Step</b>	<b>For Action by</b>	<b>Document Reference (ALINORM 03/39)</b>
Proposed Draft Codex General Standard for Fruit Juices and Nectars	3	Governments Drafting Group on the Revision of the Standard 3 <sup>rd</sup> TFFVJ	paras. 43-46 and Appendix II.
Proposed Draft Revised Codex General Standard for Vegetable Juices	3	Governments 3 <sup>rd</sup> TFFVJ	para. 47 and Appendix III.
Methods of Analysis for Fruit and Vegetable Juices and Nectars	—	24 <sup>th</sup> CCMAS	para. 51 and Appendices II and III

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LISTE DES PARTICIPANTS  
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**PROPOSED DRAFT CODEX GENERAL STANDARD FOR FRUIT JUICES AND NECTARS**  
**(At Step 3 of the Codex Procedure)**

**1. SCOPE**

This Standard applies to all products as defined in Section 2.1 below.

**2. DESCRIPTION****2.1 PRODUCT DEFINITION****2.1.1 Fruit Juice**

Fruit juice is the unfermented but fermentable liquid obtained from the edible part of sound, appropriately mature and fresh fruit or of fruit maintained in sound condition by suitable means including post harvest surface treatments applied in accordance with the applicable provisions of the Codex Alimentarius Commission.

Some juices may be processed with pips/seeds and peel which are not usually incorporated in the juice, but some parts or components of pips, seeds and peel, which cannot be removed by Good Manufacturing Practices (GMP) will be acceptable.

The juice is prepared by suitable processes which maintain the essential physical, chemical, organoleptical and nutritional characteristics of the fruit from which it comes. The juice may be cloudy or clear and may have [added] or restored aromatic substances, volatile flavour components, pulp and cells, all of which must be obtained by suitable physical means, and all of which must be recovered from the same kind of fruit.

A single juice is obtained from one kind of fruit. A mixed juice is obtained by blending two or more juices or juices and purées, from different kinds of fruits.

Fruit juice is obtained as follows:

**2.1.1.1 Fruit juice** directly expressed by mechanical extraction processes.

**2.1.1.2 Fruit juice from concentrate** by reconstituting concentrated fruit juice defined in Section 2.1.2 with potable water that meets the criteria described in Section 3.1.1(c).

**2.1.2 Concentrated Fruit Juice**

Concentrated fruit juice is the product that complies with the definition given in Section 2.1.1 above, except water has been physically removed in an amount sufficient to increase the Brix level to a value at least 50% greater than the Brix value established for reconstituted juice from the same fruit, as indicated in Section A.2 (Annex). In the production of juice that is to be concentrated, suitable processes are used and may be combined with simultaneous diffusion of the pulp cells or fruit pulp by water, provided that the water extracted juice is added in-line to the primary juice, before the concentration procedure. Fruit juice concentrates may have [added] or restored components such as aromatic substances, volatile flavour components, pulp and cells, all of which must be recovered from the same kinds of fruits and be obtained by physical means.

**2.1.3 Water Extracted Fruit Juice**

Water Extracted Fruit Juice is the product obtained by diffusion with water of:

- pulpy whole fruit whose juice cannot be extracted by any physical means, or
- dehydrated whole fruit.

Such products may be concentrated and reconstituted.

The solids content of the finished product shall meet the minimum Brix for reconstituted juice specified in Section A.2 (Annex).

**2.1.4 Fruit Purée**

Fruit purée is the unfermented but fermentable product obtained by suitable processes e.g. by sieving, grinding, milling the edible part of the whole or peeled fruit without removing the juice. Fruit purée may have [added] or restored components such as aromatic substances and volatile flavour components, all of which must be recovered from the same kinds of fruits and be obtained by physical means. The fruit must be sound, appropriately mature, and fresh or preserved by physical means or by treatment(s) applied in accordance with the applicable provisions of the Codex Alimentarius Commission.

### 2.1.5 Concentrated Fruit Purée

Concentrated fruit purée is obtained by the physical removal of water from the fruit purée in an amount sufficient to increase the Brix level to a value at least 50% greater than the Brix value established for reconstituted juice from the same fruit, as indicated in Section A.2 (Annex).

### 2.1.6 Fruit Nectar

Fruit Nectar is the unfermented but fermentable product obtained by adding water with or without the addition of sugars as defined in the Codex Standard for Sugars (CX-STAN 212-1999), other carbohydrate sweeteners, honey and/or other sweeteners as described in Section 3.1.2, to products defined in Sections 2.1.1, 2.1.2, 2.1.3, 2.1.4 and 2.1.5 or to a mixture of those products. That product moreover must meet the requirements defined for fruit nectars in Section A.2 (Annex). A mixed fruit nectar is obtained by blending two or more fruit nectars, concentrated or unconcentrated, from different kinds of fruits.

## 2.2 SPECIES

The species indicated as the botanical name in Section A.2 (Annex) shall be used in the preparation of fruit juices and fruit nectars bearing the product name for the applicable fruit. For fruits not included in Section A.2 (Annex), the correct botanical or common name shall apply.

## 3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

### 3.1 COMPOSITION

#### 3.1.1 Basic Ingredients

(a) For directly expressed fruit juices, the soluble solids content of the single strength juice must be in accordance with the minimum Brix level established in Section A.1 (Annex) and shall not be modified, except by blendings of the same kind of juice. For juices which do not appear in Section A.1 (Annex), the minimum Brix shall be the Brix as expressed from the fruit.

(b) The preparation of fruit juice that requires reconstitution of concentrated juices must be in accordance with the minimum Brix level established in Section A.2 (Annex), exclusive of the solids of any added optional ingredients and additives. If there is no Brix level specified in the Table, minimum Brix shall be calculated on the basis of the soluble solids content of the single strength juice used to produce such concentrated juice.

(c) For reconstituted juice and nectar, the potable water used in reconstitution shall, at a minimum, meet the latest edition of the *Guidelines for Drinking Water Quality of the World Health Organization* (Volumes 1 and 2).

#### 3.1.2 Other Permitted ingredients

Except as otherwise provided, the following shall be subject to ingredient labelling requirements:

(a) Sugars with less than 2% moisture (as defined in the Codex Standard for Sugars (CX-STAN 212- 1999): sucrose, dextrose monohydrate, dextrose anhydrous, glucose, fructose may be added to all juice products defined in Sections 2.1.1 and 2.1.6.<sup>1</sup>

(b) Syrups (as defined by Codex Standard for Sugars CX-STAN 212-1999): glucose syrup, liquid sucrose, invert sugar solution, invert sugar syrup, fructose syrup, liquid cane sugar, isoglucose, high fructose syrup, may be added only to fruit nectars as defined in Section 2.1.6, concentrated fruit juices, as defined in Section 2.1.2, and fruit juice from concentrate, as defined in Section 2.1.1.2 and concentrated fruit purée as defined in Section 2.1.5. Honey and/or sugars derived from fruits may be added only to fruit nectars as defined in Section 2.1.6.<sup>1</sup>

[(c) Lemon juice or lime juice, or both, may be added to fruit juice: up to 3 g/l anhydrous citric acid equivalent for acidification purposes to unsweetened juices as defined in Sections 2.1.1, 2.1.2, 2.1.3, 2.1.4 and 2.1.5. Lemon juice or lime juice, or both, may be added: up to 5 g/l anhydrous citric acid equivalent to fruit nectars as defined in Section 2.1.6.]

(d) The addition of both sugars and acidifying agents (defined in subparagraph (b) and Section 4 respectively) to the same fruit juice is prohibited.

(e) The juice from *Citrus Reticulata* and/or hybrids with *Reticulata* may be added to orange juice in an amount not to exceed 10% of soluble solids of the *Reticulata* to the total of soluble solids of orange juice. [(not subject to ingredient labelling requirements)]

<sup>1</sup> The addition of ingredients listed in Section 3.1.2(a) and 3.1.2(b) applies only to products intended for sale to the consumer or for catering purposes.

**APPENDIX II**

- (f) Salt and spices and aromatic herbs (and their natural extracts) may be added to tomato juice.
- (g) The addition of essential nutrients (e.g. vitamins, minerals) shall comply with the texts of the Codex Alimentarius Commission established for this purpose.

**3.2 QUALITY CRITERIA**

The fruit juices and fruit nectars shall have the characteristic color, aroma and flavour of juice from the same kind of fruit from which it is made. Natural fruit juice components such as flavours, pulps and cells may be added or restored to juice or nectar of the same kind of fruit.

The fruit shall retain no more water from washing, steaming or other preparatory operations than technologically unavoidable.

**4. FOOD ADDITIVES****4.1 Acidity Regulators**

INS No.	Food Additive	Maximum Level	
[330]	[Citric acid]	[3 g/l] [GMP]	
330	Citric acid	5 g/l (for nectars)	
296	Malic acid	GMP	(only for pineapple and passion fruit juices and fruit nectars [all fruit juices])
334; 335i,ii; 336i,ii; 337	Tartrates	GMP [4000 mg/l]	(only for nectars and grape juice)

**[4.2 Antifoaming Agents]**

INS No.	Food Additive	Maximum Level
[900a]	[Polydimethylsiloxane]	[10 mg/l]

**4.3 Antioxidants**

INS No.	Food Additive	Maximum Level
300-303	Ascorbic acid and its salts	GMP
220	Sulphur dioxide	50 mg/l

**4.4 Carbonating Agents**

INS No.	Food Additive	Maximum Level
290	Carbon dioxide	GMP

**[4.5 Preservatives]**

INS No.	Food Additive	Maximum Level
[210-213]	[Benzoates]	[1000 mg/l]
[200-203]	[Sorbates]	[1000 mg/l]

**4.6 Stabilizers**

INS No.	Food Additive	Maximum Level
440	Pectins	3 g/l (only for cloudy juices and fruit nectars)



#### 4.7 Sweeteners

INS No.	Additive	Maximum Level
950	Acesulfame potassium	350 mg/l (only for fruit nectars)
951	Aspartame	600 mg/l (only for fruit nectars)
952	Cyclamic acid and its salts	400 mg/l (only for fruit nectars)
954	Saccharin and its salts	80 mg/l (only for fruit nectars)
955	Sucralose	300 mg/l (only for fruit nectars)
[959]	[Neohesperidine dihydrochalcone] <sup>2</sup>	[30 mg/l (only for fruit nectars)]

#### 4.8 Processing Aids

Function	Substance	Maximum Level
[Antifoaming Agent]	[Polydimethylsiloxane]	[10 mg/L]
Clarifying Agents/Filtration Aids/Flocculating Agents	Precipitated calcium carbonate	GMP (only in grape juice)
	Potassium tartrate	GMP (only in grape juice)
	Calcium hydroxide	GMP (only in grape juice)
	Vegetable carbon	GMP (only in grape juice)
	Metatartaric acid	60 mg/l (only in grape juice)
	Sulphur dioxide	10 mg/l (only in grape juice)
	Absorbent clays (bleaching, natural or activated earths)	
	Absorbent resins	
	Active carbon	
	Albumin	
	Bentonite	
	Chitin/chitosan	
	Diatomaceous earth	
	Ion exchange resins (cation and anion)	
	Kaolin	
	Perlite	
	Tannin	
Rice hulls		
Cellulose		
Enzyme preparations	Enzyme preparations may be used as processing aids provided these preparations do not result in a total liquefaction and do not substantially affect the cellulose content of the processed vegetable.	
Packing gas <sup>3</sup>	Nitrogen	GMP
	Carbon dioxide	GMP

### 5. CONTAMINANTS

The products covered by the provisions of this Standard shall comply with those maximum levels established by the Codex Alimentarius Commission.

#### 5.1 HEAVY METALS

The products covered by the provisions of this Standard shall comply with those maximum levels for heavy metals established by the Codex Alimentarius Commission for these products.

<sup>2</sup> Neohesperidine dihydrochalcone has not been assigned an Acceptable Daily Intake (ADI) by the Joint FAO/WHO Expert Committee on Food Additives (JECFA). In order to include this additive in the Codex General Standard for Food Additives (GSFA), an ADI will need to be assigned by JECFA. To achieve this, a Codex Member State should propose to the Codex Committee on Food Additives and Contaminants (CCFAC) that neohesperidine dihydrochalcone be proposed for inclusion in the JECFA priority list.

<sup>3</sup> May also be used e.g., for preservation.

## 5.2 PESTICIDE RESIDUES

The products covered by the provisions of this Standard shall comply with those maximum residue limits established by the Codex Alimentarius Commission for these products.

## 6. HYGIENE

**6.1** It is recommended that the products covered by the provisions of this Standard be prepared and handled in accordance with the appropriate sections of the Recommended International Code of Practice – General Principles of Food Hygiene (CAC/RCP 1-1969, Rev. 3-1997), and other relevant Codex texts such as Codes of Hygienic Practice and Codes of Practice.

**6.2** The products should comply with any microbiological criteria established in accordance with the Principles for the Establishment and Application of Microbiological Criteria for Foods (CAC/GL 21-1997).

## [7. LABELLING

In addition to the Codex General Standard for the Labelling of Prepackaged Foods (CODEX STAN 1-1985, Rev. 1-1991), the following specific provisions apply:

### 7.1 CONTAINERS DESTINED FOR THE FINAL CONSUMER

#### 7.1.1 The Name of the Product

The name of the product shall be the name of the fruit used as defined in Section 2.2. The fruit name shall be filled in the blank of the product name mentioned under this Section. These names may only be used if the product conforms to the definition in Section 2.1 or which otherwise conform to this Standard.

##### **7.1.1.1 Fruit Juice defined under Section 2.1.1 and [Section 2.1.3 - fruit juice from dried fruit and other juices which need to be extracted with water]**

The name of the product shall be “\_\_\_\_\_ juice” or “juice of \_\_\_\_\_”.

##### **7.1.1.2 Concentrated Fruit Juice defined under Section 2.1.2**

The name of the product shall be “concentrated \_\_\_\_\_ juice” or “\_\_\_\_\_ juice concentrate”.

##### **7.1.1.3 Fruit Nectars defined under Section 2.1.6**

The name of the product shall be “\_\_\_\_\_ nectar” or “nectar of \_\_\_\_\_”.

#### 7.1.2 Additional Requirements

The following additional specific provisions shall apply:

**7.1.2.1** For fruit juices, fruit nectars and mixed fruit juice/nectar, if the product contains or is prepared from concentrated juice and water or the product is prepared from juice from concentrate and directly expressed juice or nectar, the words “from concentrate” must be entered close to the product name, standing out well from any background, in clearly visible characters, not less than 1/2 the height of the letters in the name of the juice.

**7.1.2.2** For fruit juices, fruit nectars and mixed fruit juices/nectars, if the product is prepared by physically removing water from the fruit juice in an amount sufficient to increase the Brix level to a value at least 50% greater than the Brix value established for reconstituted juice from the same fruit, as indicated in table of Section A.2 (Annex), it shall be labeled "concentrated".

**7.1.2.3** For products defined in Section 2.1, where one or more of the optional sugars as defined by the Codex Standard for Sugars (CX-STAN 212-1999) or permitted sweeteners are added, the juice name shall include the statement called "sugar(s) added" or "sweetened" after the fruit juice, fruit nectar or mixed fruit juice/nectar's name. When [artificial] sweeteners are employed as substitutes for sugars in fruit nectars and mixed fruit nectars, the statement, “with [artificial] sweetener(s),” shall be included in conjunction with the product name.

**7.1.2.4** Where concentrated fruit juice, or concentrated fruit nectar or mixed concentrated fruit juice/nectar is to be reconstituted before consumption as fruit juice, fruit nectar or mixed fruit juice/nectar, the label must bear appropriate directions for reconstitution on a volume/volume basis with water to the applicable Brix value in Section A.2 (Annex) for reconstituted juice.

**7.1.2.5** Distinct varietal denominations may be used in conjunction with the common fruit names on the label where such use is not misleading.

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**7.1.2.6** Fruit juice, fruit nectar, and mixed fruit juice/nectar's that have been preserved using physical processes should include a description of such processes as part of the fruit juice, fruit nectar or mixed fruit juice/nectar's name (i.e. "pasteurized," "frozen," etc.).

**7.1.2.7** Fruit nectars and mixed fruit nectars must be conspicuously labelled with a declaration of "juice content \_\_\_%" with the blank being filled with the percentage of purée and/or fruit juice computed on a volume/volume basis. The words "juice content \_\_\_%" shall appear in close proximity to the name of the product in clearly visible characters, not less than 1/2 the height of the letters in the name of the juice.

**7.1.2.8** An ingredient declaration of "ascorbic acid" when used as an antioxidant does not, by itself, constitute a "Vitamin C" claim.

**7.1.2.9** Any added essential nutrients declaration should be labelled in accordance with the *Codex Guidelines on Nutrition Labelling* (CAC/GL 2- 1985 (Rev. 1-1993) and the *Codex Guidelines for the Use of Nutrition Claims* (CAC/GL 23-1997).

**7.1.2.10** Where the fruit juice has been prepared from raw material treated with ionizing radiation, it shall be labelled in accordance with Section 5.2.2 of the Codex General Standard for the Labelling of Prepackaged Foods (CODEX STAN 1-1985, Rev. 1-1991).

**7.1.2.11** No fruit may be represented pictorially on the label, except those present in the fruit product.

**7.1.2.12** Where the product contains added carbon dioxide the term "carbonated" shall appear on the label near the name of the food.]

**7.1.2.13** Where tomato contains spices in accordance with 3.1.2(f), the term "spiced" shall appear on the label near the name of the food

**[7.2 NON-RETAIL CONTAINERS**

Information for non-retail containers not destined to final consumers shall be given either on the container or in accompanying documents, except that the name of the product, lot identification, net contents and the name and address of the manufacturer, packer or distributor and/or importer, as well as storage instructions, shall appear on the container, except that for tankers the information may appear exclusively in the accompanying documents. However, lot identification, and the name and address of the manufacturer, packer, distributor and/or importer may be replaced by an identification mark, provided that such a mark is clearly identifiable with the accompanying documents.]

**8. METHODS OF ANALYSIS AND SAMPLING**

Commodity	Provision	Method	Principle	Notes	Codex Type
Juices	acetic acid	EN 12632; IFU Method No66 (1996)	enzymatic determination	Quality method	II
Juices	alcohol (ethanol)	IFU Method No52,1983/1996	enzymatic determination	Quality method	II
Juices	anthocyanins	IFU Method No71 (1998)	high performance liquid chromatography	Authenticity method	I
Juices	ascorbic acid-L	IFU Method No17a (1995)	high performance liquid chromatography	Quality method	II
Juices	ascorbic-L	AOAC 967.21; IFU Method No 17	titration	Quality method	III
Juices	ash in fruit products	AOAC 940.26 - JAOAC 23,314(1940); EN1135(1994); IFU Method No9 (1989)	gravimetry	Authenticity method	I
Juices	beet sugar in fruit juices	AOAC 995.17 - JAOAC 79, 917(1996)	deuterium NMR	Authenticity method	I
Orange juice	benzoic acid as a marker in orange juice	AOAC 994.11 - JAOAC 78, 80(1995)	high performance liquid chromatography	Authenticity method	II
Juices	C <sup>13</sup> /C <sup>12</sup> ratio of ethanol derived from fruit juices	collaborative study submitted to AOAC	stable isotope mass spectrometry	Authenticity method	III
Apple juice	carbon stable isotope ratio of apple juice	AOAC 981.09 - JAOAC 64, 85(1981)	stable isotope mass spectrometry	Authenticity method	II
Orange juice	carbon stable isotope ratio of orange juice	AOAC 982.21 - JAOAC 65, 608(1982) J.Agric.Food Chem, 29, 803-804, 1981	stable isotope mass spectrometry	Authenticity method	II
Juices	carotenoid, total/ individual groups	EN 12136 (1997); IFU Method No59,1991	precipitation/ fractionation	Authenticity method	I
Juices	centrifugable pulp	EN12134; IFU Method No60,1991/1998	centrifugation/% value	Quality method	I
Juices	chloride (expressed as sodium chloride)	EN12133; IFU Method No 37, 1968	potentiometry	Quality method	II
Juices	chloride	AOAC 971.27 (Codex general method)	potentiometry	Quality method	III
Juices	citric acid	AOAC 986.13 - JAOAC 69, 594 (1986) - JAOAC 77, 411 (1994)	high performance liquid chromatography	Authenticity method	III
Juices	citric acid	EN 1137; IFU Method No22,1985	enzymatic determination	Authenticity method	II
Juices	essential oils	AOAC 968.20; IFU 45b	(Scott) distillation, titration	Quality method	I
Juices	fermentability	IFU Method No 18, 1974	microbiology	Quality method	I
Juices	formol number	EN 1133 (1994); IFU Method No30(1984)	potentiometry	Authenticity method	I
Juices	free amino acids	EN 12742; IFU Method No57,1989	column chromatography/ spectrophotometry	Authenticity method	II
Juices	fumaric acid	IFU Method No72 (1998)	high performance liquid chromatography	Quality method	II
Juices	glucose, fructose, sorbitol	EN 12630; IFU Method No67 (1996)	high performance liquid chromatography	Authenticity method	III
Juices	glucose-D fructose-D	EN 1140; IFU Method No55,1985	enzymatic determination	Authenticity method	II
Juices	gluconic acid	IFU Method No 76 (2001)	enzymatic determination	Quality method	II
Juices	glycerol	IFU Method No77 (2001)	enzymatic determination	Quality method	II
Juices	hesperidin and naringin	EN12148(1996); IFU Method No 58 (1991)	high performance liquid chromatography	Authenticity method	II
Apple juice	high fructose corn syrup and hydrolyzed inulin syrup in apple juice	AOAC COLLABORATIVE STUDY IN PROGRESS	capillary gas chromatography	Authenticity method	I
Juices	hydroxymethylfurfural	IFU Method No69 (1996)	high performance liquid chromatography	Authenticity method	II
Juices	isocitric acid-D	EN 1139; IFU Method No54,1984	enzymatic determination	Authenticity method	II
Juices	lactic acid-D and L	EN 12631 (1999); IFU Method No53 (1983/1996)	enzymatic determination	Quality method	II

Commodity	Provision	Method	Principle	Notes	Codex Type
Juices	limonin in citrus juices and concentrates	AOAC collab in progress	high performance liquid chromatography	Authenticity method	III
Apple juice	malic acid (L-malic/total malic acid ratio in apple juice)	AOAC 993.05 - JAOAC 69, 594 (1986) - JAOAC 77, 411 (1994)	enzymatic determination and high performance liquid chromatography	Authenticity method	I
Juices	malic acid-D	EN12138; IFU Method No 64 (1995)	enzymatic determination	Authenticity method	II
Apple juice	malic acid-D in apple juice	AOAC 995.06	high performance liquid chromatography	Authenticity method	III
Juices	malic acid-L	EN1138 (1994); IFU Method No21(1985)	enzymatic determination	Authenticity method	II
Orange juice	naringin and neohesperidin in orange juice	AOAC 999.05 - JAOAC, Vol. 83, No.5 2000, pp1155-1165	high performance liquid chromatography	Authenticity method	I
Juices	pectin	IFU Method No26,1964/1996	precipitation/ photometry	Authenticity method	I
Juices	pH-value	EN 1132(1994); IFU Method No11 (1968/1989)	potentiometry	Quality method	I
Juices	phosphorus/phosphate	EN1136 (1994); IFU Method No50(1983)	photometry	Authenticity method	II
Juices	polyphenolics	collaborative study in progress	high performance liquid chromatography	Authenticity method	IV
Juices	preservatives in fruit juices	IFU Method No 63 (1995)	high performance liquid chromatography	Authenticity method	II
Juices	proline	EN1141 (1994); IFU Method No49 (1983)	photometry	Authenticity method	II
Apple and cranberry juice	quinic, malic & citric in cranberry juice cocktail and apple juice	AOAC 986.13 - JAOAC 69, 594(1986)	high performance liquid chromatography	Authenticity method	III
Juices	recoverable oil	AOAC 968.20; IFU Method No 45b	distillation and titration Scott method	Quality method	I
Juices	relative density	EN1131(1993); IFU Method No 1 (1989) & IFU Method No General sheet,1971	pycnometry	Quality method	I
Juices	relative density	IFU Method No 1A	densitometry	Quality method	I
Juices	sodium, potassium,calcium, magnesium	EN 1134 (1994); IFU Method No33 (1984)	atomic absorption spectroscopy	Authenticity method	II
Juices	soluble solids	AOAC 983.17; EN12143 (1996); IFU Method No 8 (1991)	indirect by refractometry	Quality method	I
Juices	sorbitol-D	IFU Method No62,1995	enzymatic determination	Authenticity method	II
Juices	stable carbon isotope ratio in the pulp of fruit juices	ENV13070 (1998); Analytica Chimica Acta 340 (1997)	stable isotope mass spectrometry	Authenticity method	II
Juices	stable carbon isotope ratio of sugars from fruit juices	ENV12140 Analytica Chimica Acta.271 (1993)	stable isotope mass spectrometry	Authenticity method	II
Juices	stable hydrogen isotope ratio of water from fruit juices	ENV12142(1997)	stable isotope mass spectrometry	Authenticity method	II
Juices	stable oxygen isotope ratio in fruit juice water	ENV12141(1997)	stable isotope mass spectrometry	Authenticity method	II
Juices	starch	AOAC 925.38; IFU Method No73	enzymatic determination	Quality method	I
Juices	sucrose	EN 12146(1996); IFU Method No56 1985/1998	enzymatic determination	Authenticity method	III
Juices	sucrose	EN 12630; IFU Method No67(1996)	high performance liquid chromatography	Authenticity method	II
Orange juice	sugar -beet derived syrups in frozen concentrated orange juice d <sup>18</sup> O measurements in water	AOAC 992.09	oxygen isotope ratio analysis	Authenticity method	I
Juices	sulfates	EN1142 (1994); IFU Method No36(1987)	precipitation / gravimetry	Quality method	II

Commodity	Provision	Method	Principle	Notes	Codex Type
Grape juice	tartaric acid in grape juice	EN 12137(1997); IFU Method No65 (1995)	high performance liquid chromatography	Authenticity method	I
Juices	titratable acids, total	EN 12147 (1995); IFU Method No 3, 1968, AOAC 942.15 B	titrimetry	Quality method	I
Juices	titratable acids, total	AOAC 942.15 A	titration		I
Juices	total dry matter	EN12145(1996); IFU Method No61,1991	gravimetry	Quality method	I
Juices	total nitrogen	EN 12135 (1997); IFU Method No28, 1991	digestion/ titration	Quality method	I
Juices	total solids	AOAC 985.26	gravimetry	Quality method	I
Juices	vitamin C	AOAC 967.22	microfluorometry	Quality method	III
Juices	vitamin C	CEN [insert correct reference]	high performance liquid chromatography	Quality method	II

## ANNEX

## A.1 Minimum Brix level for directly expressed juice

Fruit's Common Name	Botanical Name	Minimum Brix Level For Directly Expressed Fruit Juices <sup>1</sup>
Acerola (West Indian Cherry)	<i>Malpighia spp</i> (Moc. & Sesse) ex	5.5 <sup>2</sup>
Apple	<i>Malus Domestica Borkh</i>	10.5 <sup>2</sup>
Cashewapple	<i>Anacardium occidentale L.</i>	10.0 <sup>2</sup>
Grape	<i>Vitis Vinifera L.</i> or hybrids thereof <i>Vitis Labrusca</i> or hybrids thereof	14.0 <sup>2</sup>
Grapefruit	<i>Citrus grandis Citrus x paradisi Macfad</i>	9.0 <sup>2</sup>
Guava	<i>Psidium guajava L.</i>	7.5 <sup>2</sup>
Lemon	<i>Citrus limon (L) Burm. f. Citrus limonum Rissa</i>	8.0 <sup>2</sup>
Mango	<i>Mangifera indica L.</i>	13.0 <sup>2</sup>
Orange	<i>Citrus sinensis (L.) Osbeck</i>	10.5 <sup>2</sup>
Passionfruit	<i>Passiflora edulis Sims.f. edulus Passiflora edulis Sims. f. flavicarpa O. Def.</i>	12.0 <sup>2</sup>
Pineapple	<i>Ananas comosus (L.) Merrill</i> <i>Ananas sativis L. Schult. f.</i>	11.5 <sup>2</sup>
Soursop	<i>Annona muricata L.</i>	12.0 <sup>2</sup>

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<sup>1</sup> At 20°C, acid corrected

<sup>2</sup> Not discussed by the Drafting Group.

**A.2 Minimum Brix level for reconstituted juice and minimum juice and/or purée content for fruit nectar (% v/v).**

<b>Fruit's Common Name</b>	<b>Botanical Name</b>	<b>Minimum Brix Level Reconstituted Fruit Juices<sup>1</sup></b>	<b>Minimum juice and/or purée content (% v/v) for Fruit Nectars</b>
Acerola (West Indian Cherry)	<i>Malpighia spp</i> (Moc. & Sesse) ex	6.5	25.0
Apple	<i>Malus Domestica</i> Borkh	11.0 <sup>3</sup>	50.0
Apricot	<i>Prunus armeniaca</i> L.	11.5	35.0
Aronia/Chokeberry	<i>Pyrus arbustifolia</i> (L.) Pers.	(*) <sup>4</sup>	(*) <sup>4</sup>
Banana	<i>Musa species</i> (plantains excluded)	21.0 <sup>3</sup>	25.0
Bilberry/Blueberry	<i>Vaccinium myrtillus</i> L. <i>Vaccinium corymbosum</i> L. <i>Vaccinium angustifolium</i>	10.0 <sup>2</sup>	40.0
Blackberry	<i>Rubus Fruitcosus</i> L. (group name)	9.0	30.0
Blackcurrant	<i>Ribes nigrum</i> L.	11.0 <sup>3</sup>	30.0
Boysenberry	<i>Rubus ursinus</i> cham. & Schltld.	10.0	(*) <sup>4</sup>
Buckthornberry= Sallowthornberry	<i>Hippophae rhamnoides</i> L.	6.0	(*) <sup>4</sup>
Cocoa pulp	<i>Theobroma cacao</i> L.	14.0 <sup>2</sup>	50.0
Cajá	<i>Spondia lutea</i> L.	10.0	25.0
Canneberge		(*) <sup>4</sup>	30.0
Casaba Melon	<i>Cucumis melo</i> L subsp. <i>melo</i> var. <i>inodorus</i> H. Jacq.	7.5 <sup>2</sup>	(*) <sup>4</sup>
Cashewapple	<i>Anacardium occidentale</i> L.	11.5	25.0
Cloudberry	<i>Rubus chamaemorus</i> L.	9.0 <sup>2</sup>	30.0
Coconut	<i>Cocos nucifera</i> L.	5.0 <sup>2</sup>	(*) <sup>4</sup>
Crabapple	<i>Malus prunifolia</i> (Willd.) Borkh <i>Malus sylvestris</i> Mill	15.4	(*) <sup>4</sup>
Cranberry	<i>Vaccinium macrocarpon</i> Aiton <i>Vaccinium oxycoccos</i> L.	7.5 <sup>2</sup>	30.0
Crowberry	<i>Empetrum nigrum</i> L.	6.0 <sup>2</sup>	(*) <sup>4</sup>

<sup>3</sup> Discussed by the Drafting Group, but not agreed.

<sup>4</sup> No data currently available. If a juice is manufactured from a fruit not mentioned in the above list, it must, nevertheless, comply with all the provisions of the Standard, except that the minimum Brix level of the reconstituted juice shall be the Brix level as expressed from the fruit used to make the concentrate.



Fruit's Common Name	Botanical Name	Minimum Brix Level Reconstituted Fruit Juices <sup>1</sup>	Minimum juice and/or purée content (% v/v) for Fruit Nectars
Cupuaçu	<i>Theobroma grandiflorum</i> L.	9.0 <sup>2</sup>	35.0
Curdles		(*) <sup>4</sup>	50.0
Cynorrhodon		(*) <sup>4</sup>	40.0
Date	<i>Phoenix dactylifera</i> L.	18.5 <sup>2</sup>	(*) <sup>4</sup>
Dewberry	<i>Rubus hispidus</i> (of North America) <i>R. caesius</i> (of Europe)	10.0 <sup>2</sup>	(*) <sup>4</sup>
Elderberry	<i>Sambucus nigra</i> L. <i>Sambucus canadensis</i>	10.5	50.0
Fig	<i>Ficus carica</i> L.	18.0	(*) <sup>4</sup>
Genipap	<i>Genipa americana</i>	17.0 <sup>2</sup>	(*) <sup>4</sup>
Goosberry	<i>Ribes uva-crispa</i> L.	7.5	30.0
Granadilla	<i>Passiflora quadrangularis</i>	(*) <sup>4</sup>	(*) <sup>4</sup>
Grape	<i>Vitis Vinifera</i> L. or hybrids thereof <i>Vitis Labrusca</i> or hybrids thereof	14.0 <sup>3</sup>	(*) <sup>4</sup>
Grapefruit	<i>Citrus grandis</i> <i>Citrus x paradisi</i> Macfad	10.0	50.0
Guava	<i>Psidium guajava</i> L.	9.5 <sup>3</sup>	35.0
Guavaberry/Birchberry	<i>Eugenia syringa</i>	(*) <sup>4</sup>	(*) <sup>4</sup>
Honeydew Melon	<i>Cucumis melo</i> L. subso. <i>melo</i> var <i>inodorus</i> H. Jacq	10.0 <sup>2</sup>	(*) <sup>4</sup>
Kiwi	<i>Actinidia deliciosa</i> (A. Chev.) C. F. Liang & A. R. Ferguson	11.5 <sup>3</sup>	(*) <sup>4</sup>
Kumquat	<i>Fortunella Swingle</i> spp	(*) <sup>4</sup>	(*) <sup>4</sup>
Lemon	<i>Citrus limon</i> (L.) Burm. f. <i>Citrus limonum</i> Rissa	8.0 <sup>3</sup>	(*) <sup>4</sup>
Lime	<i>Citrus aurantifolia</i> (Christm.)	8.0 <sup>3</sup>	(*) <sup>4</sup>
Lingonberry	<i>Vaccinium vitis-idaea</i> L.	10.0	(*) <sup>4</sup>
Litchi	<i>Litchi chinensis</i> Sonn	11.2	20.0
Loganberry	<i>Rubus . loganobaccus</i> L. H. Bailey	10.5	(*) <sup>4</sup>
Lulo	<i>Solanum quitoense</i> Lam.	(*) <sup>4</sup>	(*) <sup>4</sup>

Fruit's Common Name	Botanical Name	Minimum Brix Level Reconstituted Fruit Juices <sup>1</sup>	Minimum juice and/or purée content (% v/v) for Fruit Nectars
Mammee Apple	<i>Mammea americana</i>	(*) <sup>4</sup>	(*) <sup>4</sup>
Mandarine/ Tangerine	<i>Citrus reticulata</i> Blanca	11.5 <sup>3</sup>	50.0
Mango	<i>Mangifera indica</i> L.	14.0 <sup>3</sup>	40.0
Melon	<i>Cucumis melo</i> L.	8.0 <sup>3</sup>	(*) <sup>4</sup>
Mulberry	<i>Morus spp.</i>	(*) <sup>4</sup>	30.0
Mulberry of Ronces		(*) <sup>4</sup>	40.0
Nectarine	<i>Prunus pérsica</i> (L.) Batsch var. <i>nucipersica</i> (Suckow) c. K. Schneid.	10.5	(*) <sup>4</sup>
Nispero/Loquat	<i>Eriobotrya japonica</i>	(*) <sup>4</sup>	(*) <sup>4</sup>
Orange	<i>Citrus sinensis</i> (L.)	11.5 <sup>3</sup>	50.0
Papaya	<i>Carica papaya</i> L.	9.0 <sup>3</sup>	35.0
Passionfruit	<i>Pasiflora edulis</i> Sims. f. <i>edulis</i> <i>Passiflora edulis</i> Sims. f. <i>Flavicarpa</i> O. Def.	12.0 <sup>3</sup>	12.0
Peach	<i>Prunus persica</i> (L.) Batsch var. <i>Persica</i>	10.5	40.0
Pear	<i>Pyrus communis</i> L.	12.0	40.0
Persimmon	<i>Diospyros khaki</i> Thunb.	(*) <sup>4</sup>	40.0
Pineapple	<i>Ananas comosus</i> (L.) Merrill <i>Ananas sativis</i> L. Schult. f.	11.5 <sup>3</sup>	40.0
Plum	<i>Prunus domestica</i> L. subsp. <i>Domestica</i>	12.0	50.0
Pome Apple	<i>Syzygium jambosa</i>	(*) <sup>4</sup>	(*) <sup>4</sup>
Pomegranate	<i>Punica granatum</i> L.	12.0	(*) <sup>4</sup>
Prune	<i>Prunus domestica</i> L. subsp. <i>domestica</i>	18.5 <sup>2</sup>	(*) <sup>4</sup>
Purple Granadilla	<i>Passiflora edulis</i>	(*) <sup>4</sup>	(*) <sup>4</sup>
Quetsche	<i>Prunus domestica</i> L. subsp. <i>Domestica</i>	12.0	(*) <sup>4</sup>
Quince	<i>Cydonia oblonga</i> Mill.	11.2	(*) <sup>4</sup>

<b>Fruit's Common Name</b>	<b>Botanical Name</b>	<b>Minimum Brix Level Reconstituted Fruit Juices<sup>1</sup></b>	<b>Minimum juice and/or purée content (% v/v) for Fruit Nectars</b>
Raspberry (Black)	<i>Rubus occidentalis L.</i>	11.1	(*) <sup>4</sup>
Raspberry (Red)	<i>Rubus idaeus L.</i> <i>Rubus strigosus Michx.</i>	7.0 <sup>3</sup>	40.0
Red Currant	<i>Ribes rubrum L.</i>	10.0	30.0
Red Goosberry		(*) <sup>4</sup>	30.0
Rosehip	<i>Rosa spp.</i>	9.0 <sup>2</sup>	40.0
Rowanberry	<i>Sorbus aucuparia L.</i>	11.0	30.0
Sallowthornberry/ Buckthornberry	<i>Hippophae rhamnoides L.</i>	6.0	(*) <sup>4</sup>
Sapote	<i>Pouteria sapota</i>	(*) <sup>4</sup>	(*) <sup>4</sup>
Sea Buckthorn	<i>Hippophae elaeagnaceae</i>	(*) <sup>4</sup>	25.0
Sloe	<i>Prunus spinosa L.</i>	6.0	(*) <sup>4</sup>
Sorb		(*) <sup>4</sup>	30.0
Cherry, Sour	<i>Prunus cerasus L.</i>	13.5 <sup>3</sup>	(*) <sup>4</sup>
Sour Orange (Sauf citron)		(*) <sup>4</sup>	50.0
Soursop / Guanabana	<i>Annona muricata L.</i>	14.5	(*) <sup>4</sup>
Star Apple	<i>Chrysophyllum cainito</i>	(*) <sup>4</sup>	(*) <sup>4</sup>
Starfruit	<i>Averrhoa carambola L.</i>	7.5 <sup>2</sup>	(*) <sup>4</sup>
Stonesbaer	<i>Prunus cerasus L. cv. Stevnsbaer</i>	17.0	(*) <sup>4</sup>
Strawberry	<i>Fragaria X. Ananassa Duchense</i> ( <i>Fragaria Chiloensis Duchesne x</i> <i>Fragaria virginiana Duchesne</i> )	7.5	40.0
Sugar Apple	<i>Annona squamosa L.</i>	14.5	(*) <sup>4</sup>
Cherry, Suriname	<i>Eugenia uniflora Rich.</i>	6.0 <sup>2</sup>	25.0
Cherry, Sweet	<i>Prunus avium (L.) L.</i>	20.0 <sup>2</sup>	(*) <sup>4</sup>
Sweet grapefruit (Oroblanco)	<i>Citrus paradisi + Citrus grandis</i>	10.0 <sup>2</sup>	(*) <sup>4</sup>
Tamarind (Indian date)	<i>Tamarindus indica</i>	(*) <sup>4</sup>	30.0
Tomato	<i>Lycopersicum esculentum L.</i>	5.0 <sup>3</sup>	(*) <sup>4</sup>

Fruit's Common Name	Botanical Name	Minimum Brix Level Reconstituted Fruit Juices <sup>1</sup>	Minimum juice and/or purée content (% v/v) for Fruit Nectars
Umbu	<i>Spondias tuberosa</i> Arruda ex Kost.	9.0 <sup>2</sup>	(*) <sup>4</sup>
Water Melon	<i>Citrullus lanatus</i> (Thunb.) Matsum. & Nakai var. <i>lanatus</i>	8.0	(*) <sup>4</sup>
White Currant	<i>Ribes rubrum</i> L.	10.0 <sup>2</sup>	30.0
White Goosberry		(*) <sup>4</sup>	30.0
Whortleberry		(*) <sup>4</sup>	30.0
Youngberry		10.0	(*) <sup>4</sup>
Other: High acidity			Adequate content to reach a minimum acidity of 0.5
Other: high pulp content, or strong flavour			25.0
Other: low acidity, low pulp content, or low / medium flavour			50.0

**PROPOSED DRAFT REVISED CODEX GENERAL STANDARD FOR VEGETABLE JUICES  
(CX-STAN 179-1991)  
(At Step 3 of the Codex Procedure)**

## 1. SCOPE

This Standard applies to all vegetable juices as defined in Section 2.1 below.

## 2. DESCRIPTION

**2.1** “Vegetable juice” is the liquid unfermented but fermentable product [or lactic acid fermented product] intended for direct consumption obtained by mechanical expression, crushing, grinding and/or sieving of one or more sound fresh vegetables or vegetables preserved exclusively by physical means. The juice shall be free from skins, seeds, and other coarse parts of the vegetables. Some juices may be processed with pips/seeds and peel which are not usually incorporated in the juice. Such parts of vegetable that cannot be removed by GMP will be allowed.

The juice may be clear, turbid, or pulpy. It may have been concentrated and reconstituted with potable water in an amount sufficient to restore the original essential composition and quality factors of the juice or to the Brix specified in table 3.1.1.(b) if a minimum Brix is specified in that table.

**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. rhubarb and asparagus), leaves and flowers (e.g. spinach and cauliflower) and legumes (e.g., peas). Pumpkins and other squash are considered to be vegetables for the purpose of this Standard. Sugar beet, [sugar cane] and, unless otherwise specified above, fruits generally, are not considered to be vegetables for the purpose of this Standard.

*Or the alternative text for the previous sentence:* [Sugar cane juice is considered a vegetable juice only in the directly expressed form. When used as a blend with other juices, it will be considered as a sweetener.]

## 3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

### 3.1 COMPOSITION

#### 3.1.1 Basic Ingredients

(a) Minimum Brix levels for reconstituted vegetable juice from concentrate are given in 3.1.1(c). If there is no Brix level specified in the table, the minimum Brix shall be calculated on the basis of the soluble solids (v/v) content of the single strength unconcentrated juice.

(b) Use of Concentrate. For directly expressed vegetable juices, the soluble solids content of the single strength juice shall be the soluble solids content of the juice as extracted from the vegetable and may be increased by the addition of juice concentrate obtained from the same vegetable(s). However, if any water is added to this 100% juice mixture, then the product shall be considered to be ‘from concentrate’ or ‘reconstituted’ as required under Section 7.1.2.2”

(c) Minimum Brix for reconstituted vegetable juice.

Vegetable's Common Name	Botanical Name	Brix Level Reconstituted juice
Carrot	<i>Daucus carota</i>	8.0
Celery	<i>Apium graveolens</i>	3.0
Rhubarb	Rheum, R. rhubarbarum Rosa spp.	6.0

**Note:** If a juice is manufactured from a vegetable not mentioned in the above list, it must, nevertheless, comply with all the provisions of the Standard, except that the minimum Brix level of the reconstituted juice shall be the Brix level as expressed from the vegetable used to make the concentrate.

#### 3.1.2 Other Permitted Ingredients

The following ingredients may be used:

(a) Food grade salt, as defined in the Codex Standard for Food Grade Salt (CX-STAN 150-1985, Rev.1-1997);

- (b) Vinegar;
- (c) Sugars in dry form as defined in the Codex Standard for Sugars (CX-STAN 212-1999), syrups, and honey as defined in the Codex Standard for Honey (CX-STAN 12-1981, Rev.2–2001);
- (d) Seasoning [spices] and herbs;
- (e) For reconstituted juice from concentrate, potable water used in reconstitution shall, at a minimum, meet the latest edition of the *Guidelines for Drinking Water Quality of the World Health Organization* (Volumes 1 and 2).
- (f) The addition of essential nutrients (e.g. vitamins, minerals) shall comply with the texts of the Codex Alimentarius Commission established for this purpose.

## 3.2 QUALITY CRITERIA

### 3.2.1 Organoleptic Properties

The product shall have the characteristic color, 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. They shall be derived from the same kinds of vegetables used in the manufacture of the product.

### 3.2.2 Blanching, Steaming, and Washing

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

## 4. FOOD ADDITIVES

### 4.1 ANTIOXIDANTS

INS No	Food Additive	Maximum Level
220	Sulphur dioxide	50 mg/l
300	Ascorbic acid	Limited by GMP

### 4.2 ACIDITY REGULATORS

INS No	Food Additive	Maximum Level
296	Malic acid	3 g/l
330	Citric acid	3 g/l
330	Citric acid [(for mixtures with fruit juices)]	5 g/l
334	Tartaric acid	Limited by GMP

### 4.3 CARBONATING AGENTS

INS No	Food Additive	Maximum Level
290	Carbon dioxide	Limited by GMP

### 4.4 STABILIZERS

INS No	Food Additive	Maximum Level
440	Pectins [(only for mixtures with fruit juices)]	3 g/l

## [PROCESSING AIDS]

## 5. CONTAMINANTS

The products covered by the provisions of this Standard shall comply with those maximum levels established by the Codex Alimentarius Commission.

### 5.1 HEAVY METALS

The products covered by the provisions of this Standard shall comply with those maximum levels for heavy metals established by the Codex Alimentarius Commission for these products.

## 5.2 PESTICIDE RESIDUES

The products covered by the provisions of this Standard shall comply with those maximum residue limits established by the Codex Alimentarius Commission for these products.

## 6. HYGIENE

**6.1** It is recommended that the products covered by the provisions of this Standard be prepared and handled in accordance with the appropriate sections of the Recommended International Code of Practice – General Principles of Food Hygiene (CAC/RCP 1-1969, Rev. 3-1997), and other relevant Codex texts such as Codes of Hygienic Practice and Codes of Practice.

**6.2** The products should comply with any microbiological criteria established in accordance with the Principles for the Establishment and Application of Microbiological Criteria for Foods (CAC/GL 21-1997).

## 7. LABELLING

In addition to the Codex General Standard for the Labelling of Prepackaged Foods (CODEX STAN 1-1985, Rev. 1-1991), the following specific provisions apply:

### 7.1 CONTAINERS DESTINED FOR THE FINAL CONSUMER

#### 7.1.1 The Name of the Product

The name of the product shall be the name of the vegetable used as defined in Section 2.2. The vegetable name shall be filled in the blank of the product name mentioned under this Section. These names may only be used if the product conforms to the definition in Section 2.1 or which otherwise conforms to this Standard.

##### 7.1.1.1 Vegetable Juice defined under Section 2.1

The name of the product shall be “\_juice” or “juice of “\_\_\_\_\_”.

##### 7.1.1.2 Concentrated Vegetable Juice defined under Section 2.1

The name of the product shall be “concentrated “\_\_\_\_\_”\_juice” or “\_\_\_\_\_ juice concentrate”.

##### 7.1.1.3 Mixed Vegetable Juices

Where products defined under Section 2.1 are mixed or blended with the defined products made from different kinds of vegetables, the product name shall include “mixed” or “blended” or other similar descriptive words or name indicating the product is not made from a single vegetable (e.g., “carrot celery juice blend”).

##### 7.1.1.4 Sweetened Vegetable Juice

If the vegetable juice or mixed vegetable juice is sweetened with any of the sugars authorized in Section 3.1.2(c), the name of the vegetable juice shall be “sweetened “\_\_\_\_\_ juice” or “\_\_\_\_\_ juice sweetened with “\_\_\_\_\_”, the first blank being filled in with the common name(s) of the vegetables and the second blank being filled in with the name of the sweetener.

### 7.1.2 List of Ingredients

**7.1.2.1** A complete list of ingredients shall be declared on the label as provided for in Section 4.2.1.6 of the Codex General Standard for the Labelling of Prepackaged Foods (CODEX STAN 1-1985, Rev. 1-1991).

**7.1.2.2** If juices have been made in whole or in part from concentrates, the words “from concentrate” or “reconstituted” must be entered close to the product name, standing out well from any background, in clearly visible characters, not less than ½ the height of the letters in the name of the juice.

### 7.1.3 Additional Requirements

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

**7.1.3.2** Where the product contains added carbon dioxide the term “carbonated” shall appear on the label near the name of the food.

**7.1.3.3** An ingredient declaration of “ascorbic acid” when used as an antioxidant does not, by itself, constitute a “Vitamin C” claim. Any nutrient declaration shall be in accordance with the *Codex Guidelines on Nutrition Labelling* (CAC/GL 2- 1985 (Rev. 1-1993) and the *Codex Guidelines for the Use of Nutrition Claims* (CAC/GL 23-1997).

**7.1.3.4** 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 Codex General Standard for the Labelling of Prepackaged Foods (CODEX STAN 1-1985, Rev. 1-1991).

## **7.2 NON-RETAIL CONTAINERS**

Information for non-retail containers not destined to final consumers shall be given either on the container or in accompanying documents, except that the name of the product, lot identification, the net contents, the name and address of the manufacturer, packer, distributor and/or importer, as well as storage instructions, shall appear on the container, except that for tankers, the information may appear exclusively in the accompanying documents. However, lot identification, and the name and address of the manufacturer, packer, distributor and/or importer, may be replaced by an identification mark, provided such a mark is clearly identifiable with the accompanying documents.

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



Commodity	Provision	Method	Principle	Notes	Codex Type
Juices	acetic acid	EN 12632; IFU Method No66 (1996)	enzymatic determination	Quality method	II
Juices	alcohol (ethanol)	IFU Method No52,1983/1996	enzymatic determination	Quality method	II
Juices	anthocyanins	IFU Method No71 (1998)	high performance liquid chromatography	Authenticity method	I
Juices	ascorbic acid-L	IFU Method No17a (1995)	high performance liquid chromatography	Quality method	II
Juices	ascorbic-L	AOAC 967.21; IFU Method No 17	titration	Quality method	III
Juices	ash in fruit products	AOAC 940.26 - JAOAC 23,314(1940); EN1135(1994); IFU Method No9 (1989)	gravimetry	Authenticity method	I
Juices	carotenoid, total/ individual groups	EN 12136 (1997); IFU Method No59,1991	precipitation/ fractionation	Authenticity method	I
Juices	centrifugable pulp	EN12134; IFU Method No60,1991/1998	centrifugation/% value	Quality method	I
Juices	chloride (expressed as sodium chloride)	EN12133; IFU Method No 37, 1968	potentiometry	Quality method	II
Juices	chloride	AOAC 971.27 (Codex general method)	potentiometry	Quality method	III
Juices	citric acid	AOAC 986.13 - JAOAC 69, 594 (1986) - JAOAC 77, 411 (1994)	high performance liquid chromatography	Authenticity method	III
Juices	citric acid	EN 1137; IFU Method No22,1985	enzymatic determination	Authenticity method	II
Juices	essential oils	AOAC 968.20; IFU 45b	(Scott) distillation, titration	Quality method	I
Juices	fermentability	IFU Method No 18, 1974	microbiology	Quality method	I
Juices	formol number	EN 1133 (1994); IFU Method No30(1984)	potentiometry	Authenticity method	I
Juices	free amino acids	EN 12742; IFU Method No57,1989	column chromatography/ spectrophotometry	Authenticity method	II
Juices	fumaric acid	IFU Method No72 (1998)	high performance liquid chromatography	Quality method	II
Juices	glucose, fructose, sorbitol	EN 12630; IFU Method No67 (1996)	high performance liquid chromatography	Authenticity method	III
Juices	glucose-D fructose-D	EN 1140; IFU Method No55,1985	enzymatic determination	Authenticity method	II
Juices	gluconic acid	IFU Method No 76 (2001)	enzymatic determination	Quality method	II
Juices	glycerol	IFU Method No77 (2001)	enzymatic determination	Quality method	II
Juices	hesperidin and naringin	EN12148(1996); IFU Method No 58 (1991)	high performance liquid chromatography	Authenticity method	II
Juices	hydroxymethylfurfural	IFU Method No69 (1996)	high performance liquid chromatography	Authenticity method	II
Juices	isocitric acid-D	EN 1139; IFU Method No54,1984	enzymatic determination	Authenticity method	II
Juices	lactic acid-D and L	EN 12631 (1999); IFU Method No53 (1983/1996)	enzymatic determination	Quality method	II
Juices	malic acid-D	EN12138; IFU Method No 64 (1995)	enzymatic determination	Authenticity method	II
Juices	malic acid-L	EN1138 (1994); IFU Method No21(1985)	enzymatic determination	Authenticity method	II
Juices	pectin	IFU Method No26,1964/1996	precipitation/ photometry	Authenticity method	I
Juices	pH-value	EN 1132(1994); IFU Method No11 (1968/1989)	potentiometry	Quality method	I
Juices	phosphorus/phosphate	EN1136 (1994); IFU Method No50(1983)	photometry	Authenticity method	II
Juices	polyphenolics	collaborative study in progress	high performance liquid chromatography	Authenticity method	IV
Juices	preservatives in fruit juices	IFU Method No 63 (1995)	high performance liquid chromatography	Authenticity method	II
Juices	proline	EN1141 (1994); IFU Method No49 (1983)	photometry	Authenticity method	II

Commodity	Provision	Method	Principle	Notes	Codex Type
Juices	recoverable oil	AOAC 968.20; IFU Method No 45b	distillation and titration Scott method	Quality method	I
Juices	relative density	EN1131(1993); IFU Method No 1 (1989) & IFU Method No General sheet,1971	pycnometry	Quality method	I
Juices	relative density	IFU Method No 1A	densitometry	Quality method	I
Juices	sodium, potassium,calcium, magnesium	EN 1134 (1994); IFU Method No33 (1984)	atomic absorption spectroscopy	Authenticity method	II
Juices	soluble solids	AOAC 983.17; EN12143 (1996); IFU Method No 8 (1991)	indirect by refractometry	Quality method	I
Juices	sorbitol-D	IFU Method No62,1995	enzymatic determination	Authenticity method	II
Juices	starch	AOAC 925.38; IFU Method No73	enzymatic determination	Quality method	I
Juices	sucrose	EN 12146(1996); IFU Method No56 1985/1998	enzymatic determination	Authenticity method	III
Juices	sucrose	EN 12630; IFU Method No67(1996)	high performance liquid chromatography	Authenticity method	II
Juices	sulfates	EN1142 (1994); IFU Method No36(1987)	precipitation / gravimetry	Quality method	II
Juices	titratable acids, total	EN 12147 (1995); IFU Method No Method No 3, 1968, AOAC 942.15 B	titrimetry	Quality method	I
Juices	titratable acids, total	AOAC 942.15 A	titration		I
Juices	total dry matter	EN12145(1996); IFU Method No61,1991	gravimetry	Quality method	I
Juices	total nitrogen	EN 12135 (1997); IFU Method No28, 1991	digestion/ titration	Quality method	I
Juices	total solids	AOAC 985.26	gravimetry	Quality method	I
Juices	vitamin C	AOAC 967.22	microfluorometry	Quality method	III
Juices	vitamin C	CEN [insert correct reference]	high performance liquid chromatography	Quality method	II