

# CODEX ALIMENTARIUS COMMISSION



Food and Agriculture  
Organization of the  
United Nations



World Health  
Organization

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Tema 6 del programa

CRD07

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## JOINT FAO/WHO FOOD STANDARDS PROGRAMME FAO/WHO COORDINATING COMMITTEE FOR LATIN AMERICA AND THE CARIBBEAN

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CODEX WORK RELEVANT TO THE REGION

(Comments from Brazil)

Brazil thanks for the document prepared by the Chair and Secretariat of the CCLAC on Codex work relevant to CCLAC region. Considering the recommendations on item 4, bullet 2 (Identify Codex works of regional interest not included in the document CX/LAC 22/22/6), we would like to raise an important matter to Brazil which is to amend the General Standard for fruit juices and nectars (Codex STAN 247-2005) to provide the stratification of the single Brix reference to encompass the distinction between the *Vitis vinifera* L and *Vitis labrusca* species, to improve both precision and coverage of the standard for better adoption and transparency in the trade of grape juices.

Seeking the support of the region, Brazil requests CCLAC member countries to evaluate the proposal below and consider the possibility to establish a favorable regional position to be presented during CCEXEC83 and CAC45.

## DISCUSSION PAPER ON THE AMENDMENT OF THE GENERAL STANDARD FOR FRUIT JUICES AND NECTARS (CODEX STAN 247-2005)

### INTRODUCTION

1. According to the FAO-OIV FOCUS 2016, in recent years, there has been an expressive interest in fermented and non-fermented products elaborated from grapes. Few fruits have attracted as much attention in health research literature as grapes. The discovery that the grape and, consequently, its by-products contain components that are beneficial to human health has led to rapidly enlarging markets for grapes and their by-products.

2. An important non-alcoholic by-product derived from grapes is the grape juice, which is also marketed in the concentrated form to obtain the reconstituted grape juice.

3. Currently, the definition of reconstituted grape juice is being elaborated within the scope of the International Organization of Vine and Wine (OIV), by the draft resolution VITI-SCRAISIN 20-678B - OIV DEFINITION OF RECONSTITUTED GRAPE JUICE. The inclusion of this definition was proposed by the Brazilian delegation in 2016. In 2018, a working group was created, coordinated by Brazil, to elaborate the first draft resolution. This document advanced to step 7 during the 2022 spring meeting of the Sub-commission Table Grapes, Raisins, and Unfermented Vine Products (SCRAISIN). However, the sensitive point for its approval on the OIV General Assembly is the amendment in the minimum parameter of soluble solids, expressed in °Brix, in the Codex Alimentarius Standard 247 (2005), for reconstituted grape juices elaborated with *Vitis labrusca* specie and hybrids thereof. For this purpose, Brazil proposes the stratification of the single Brix reference to encompass the distinction between the *Vitis vinifera* L and *Vitis labrusca* species, to improve both precision and coverage of the standard for better adoption and transparency in the trade of grape juices. The detailed proposal is presented in Appendix I of this document.

### INFORMATION DATA

4. According to the OIV (2022), the global vineyard surface area was estimated to be 7.3 mha in 2021. Grape is produced at commercial scale in 91 countries of the world (FAOSTAT, 2020), and it is one of the world's largest fruit crop, making it available worldwide for direct consumption and for the elaboration of non-alcoholic and alcoholic products.

5. The grape juice is a grape-derived product of considerable commercial value. Currently, it ranks third in the world's most exported juices, after the orange juice and apple juice (WITS, 2022).

6. Data from the World Integrated Trade Solution (WITS, 2022) displays that the total quantity of grape juice exported (including grape must) in 2021 was 797,017.8 ton, representing a total of \$ 901,236 K, worldwide. The top 15 largest grape juice exporting countries are shown in the Figure 01.

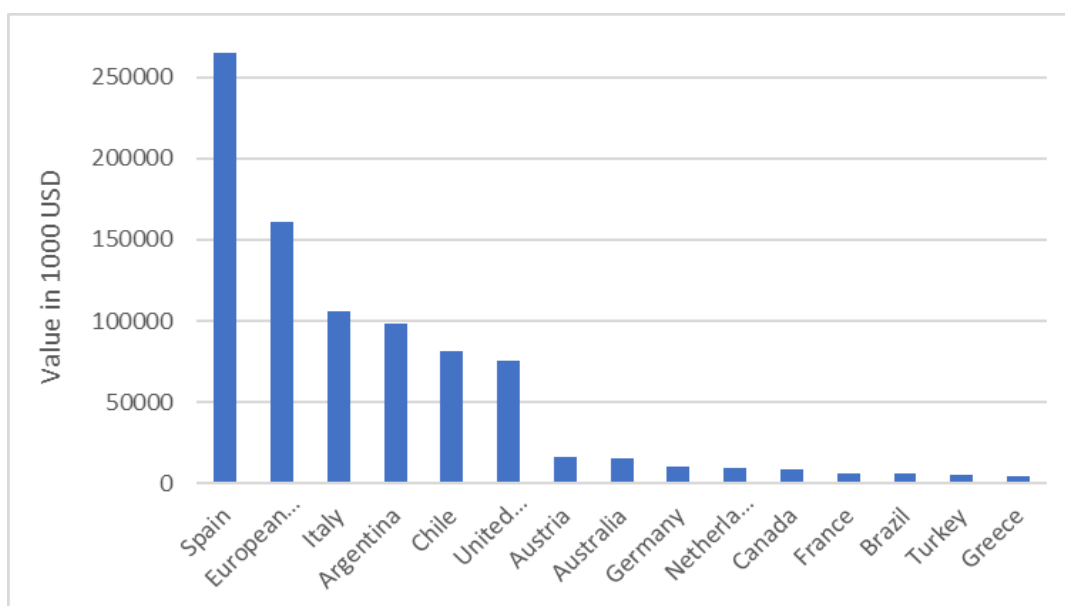


Figure 01. Top 15 largest grape juice exporting countries

7. The most used species for the elaboration of grape juices are *Vitis labrusca* and *Vitis vinifera*. In Europe, only grape juices of the *Vitis vinifera* species are allowed for the grape juice elaboration. In contrast, in Brazil and in the United States, the grape juices are elaborated from *Vitis labrusca* and hybrid grapes. In Brazil the varieties used are the Isabella, "Bordô" and Concord, for the red grape juices, and the White Niagara for the white grape juices. Those grapes have an aroma and flavor characteristics appreciated by consumers, as well as a great balance between acidity and sugar.

8. In 2021, the top five cultivars in Brazil in quantity were: Isabella (~ 278780 ton), "Bordô" (~ 218416 ton), White Niagara (~ 44928 ton), Rosé Niagara (~ 36454 ton) and Concord (~ 31896 ton). According to data from the Brazilian Ministry of Agriculture, Livestock and Supply (SIVIBE, 2022), the State of Rio Grande do Sul has the largest planted area of vines in Brazil, followed by Pernambuco and Bahia (SIVIBE, 2022). Therefore, the main viticultural estate in Brazil is the Rio Grande do Sul, where the production of *Vitis labrusca* and their hybrids represents approximately 86% of the total grape production (SISDEVIN, 2020).

9. The increase in the production, marketing and consumption of grape juice has been constant in recent years. This is directly related to consumers' search for products with proven health benefits, due to their characteristics and nutritional properties. The elaboration of this product provides an important economic alternative for the traditional wine industries, small wine producers and agroindustry.

10. In Brazil, according to Table 1 of the Annex to Normative Instruction n. 14, of February 8, 2018 (BRASIL, 2018), the minimum content of soluble solids for grape juices, expressed in °Brix at 20 °C is 14.0. This standard represents, in an inclusive way, the minimum degree of maturation reached by most of the grapes of the species *Vitis labruca* and hybrids thereof, in Brazil, as they normally have a lower soluble solids content than the *Vitis vinifera* specie.

11. For the preparation of this report, values of soluble solids, expressed in °Brix (at 20°C) were collected from experimental musts of the main *Vitis labrusca* and hybrid grapes used in the elaboration of grape juices in Brazil, from the 2012 to 2021 harvest, totaling 1500 samples (Table 01). The data belongs to a database where the grapes were collected by agricultural inspectors of the Secretary of Agriculture of the State of Rio Grande do Sul (SEAPDR) in each harvest and the musts were obtained and analyzed at the Oenological Reference Laboratory (LAREN) of SEAPDR, by densitometry, using an electronic hydrostatic balance at 20°C.

**Table 01.** Minimum, maximum and average values of soluble solids, expressed in °Brix, of experimental musts of *Vitis labrusca* and hybrid grapes, from Brazil

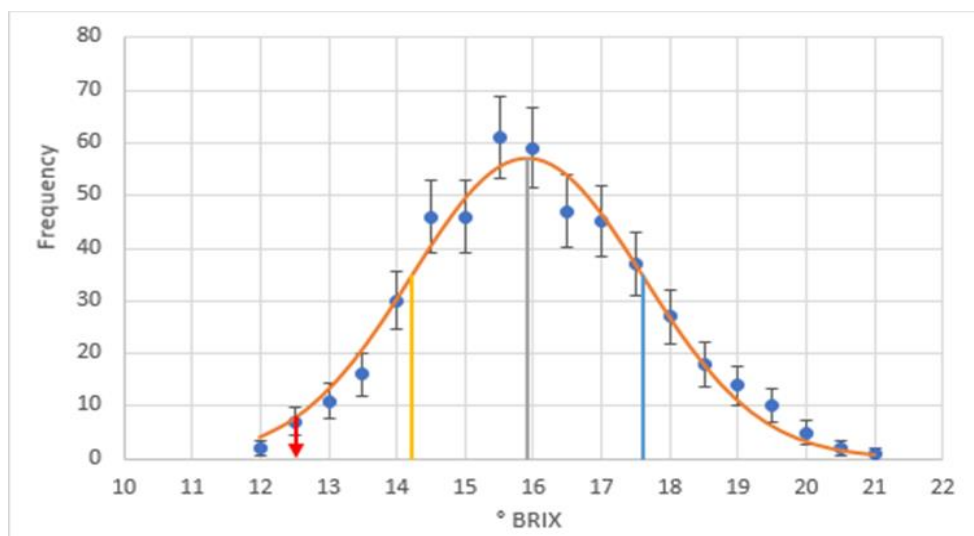
Year	Varietal	Minimum ° Brix	Maximum ° Brix	Average	Standard deviation	n	n Total
2012	"Bordô"	13,4	18,6	16,2	1,3	44	173
	"BRS Cora"	18,5	22,1	20,3	2,5	2	
	Concord	15,5	19,0	17,0	1,6	4	
	Isabella	15,8	21,4	18,1	1,3	94	
	"Isabel Precoce"	15,4	21,0	18,0	2,8	3	
	White Niagara	12,5	19,4	16,5	1,6	22	
	Rosé Niagara	15,7	17,8	16,9	1,0	4	
2013	"Bordô"	15,6	21,1	18,0	1,1	43	148
	Concord	15,5	18,4	16,7	1,1	5	
	Isabella	14,1	20,7	17,6	1,4	53	
	"Isabel Precoce"	17,6	18,9	18,3	0,5	6	
	White Niagara	12,4	19,2	16,9	1,4	27	
	Rosé Niagara	16,1	18,4	17,1	0,7	14	
2014	"Bordô"	14,6	19,6	16,2	1,0	45	130
	"BRS Cora"	17,5	18,0	17,8	0,4	2	
	Concord	14,6	17,0	15,7	0,8	10	
	Isabella	14,4	19,0	16,8	1,1	41	
	"Isabel Precoce"	17,3	19,5	18,5	1,0	4	
	White Niagara	12,9	18,2	15,7	1,3	21	
	Rosé Niagara	13,7	17,7	15,4	1,2	7	
2015	"Bordô"	12,0	16,6	14,0	1,2	38	114
	"BRS Cora"	14,3	14,5	14,4	0,1	2	
	Concord	12,5	16,0	14,2	1,5	4	
	Isabella	13,9	20,0	16,3	1,3	41	
	"Isabel Precoce"	13,4	17,2	15,9	1,5	5	
	White Niagara	12,0	16,2	14,4	1,2	20	
	Rosé Niagara	14,5	15,9	15,1	0,6	4	

Year	Varietal	Minimum ° Brix	Maximum ° Brix	Average	Standard deviation	n	n Total
2016	"Bordô"	12,2	18,3	15,4	1,4	43	145
	"BRS Cora"	13,5	14,6	14,1	0,8	2	
	Concord	12,9	16,9	14,5	1,0	16	
	Isabella	13,4	18,7	16,1	1,4	41	
	"Isabel Precoce"	15,4	17,7	16,5	1,0	5	
	White Niagara	13,6	18,6	15,6	1,2	33	
	Rosé Niagara	14,9	16,6	15,6	0,8	5	
2017	"Bordô"	12,5	17,3	14,9	1,2	58	178
	"BRS Cora"	12,9	16,3	14,5	1,4	4	
	Concord	13,1	16,1	14,5	0,8	24	
	Isabella	12,41	18,9	15,5	1,1	67	
	"Isabel Precoce"	13,9	17,4	15,2	1,6	5	
	White Niagara	12,8	15,8	14,2	0,9	16	
	Rosé Niagara	13,4	15,3	14,2	0,9	4	
2018	"Bordô"	12,1	23,8	15,3	1,8	50	158
	"BRS Cora"	16,7	18,2	17,2	0,8	3	
	Concord	13,9	18,1	15,7	1,1	13	
	Isabella	14,5	21,2	17,5	1,4	49	
	"Isabel Precoce"	16,5	20,4	17,8	1,4	7	
	White Niagara	11,3	17,6	14,9	1,3	28	
	Rosé Niagara	14,2	17,7	16,1	1,2	8	
2019	"Bordô"	12,0	17,4	14,9	1,1	57	194
	"BRS Cora"	15,1	16,7	15,9	0,8	3	
	Concord	12,4	15,9	14,0	1,3	10	
	Isabella	12,8	18,7	16,0	1,2	78	
	"Isabel Precoce"	13,3	16,4	14,8	1,2	8	
	White Niagara	10,9	17,1	14,1	1,4	33	
	Rosé Niagara	12,3	18,1	14,3	2,2	5	
2020	"Bordô"	13,9	19,6	16,8	1,3	35	126
	"BRS Cora"	16,1	19,9	17,9	1,6	4	
	Concord	13,6	18,6	16,4	1,8	7	
	Isabella	15,6	20,8	18,3	1,3	35	
	"Isabel Precoce"	17,9	20,1	18,9	0,7	8	
	White Niagara	14,9	19,6	16,9	1,1	33	
	Rosé Niagara	14,9	15,9	15,6	0,5	4	
2021	"Bordô"	13,1	23,5	16,6	1,9	39	134
	"BRS Cora"	15,8	18,9	17,6	1,3	4	
	Concord	15,4	18,0	16,6	0,8	8	
	Isabella	12,6	18,9	16,3	1,4	35	
	"Isabel Precoce"	17,0	20,0	18,4	1,3	7	
	White Niagara	13,8	18,9	16,4	1,3	38	
	Rosé Niagara	14,7	17,4	16,0	1,4	3	
2022	"Bordô"	14,5	22,0	17,5	1,8	36	127
	"BRS Cora"	17,8	20,1	19,1	1,2	3	
	Concord	14,0	17,8	16,1	1,2	9	
	Isabella	14,1	21,3	17,8	1,8	34	
	"Isabel Precoce"	15,4	20,1	18,0	2,0	6	
	White Niagara	14,5	19,5	17,4	1,3	35	
	Rosé Niagara	15,5	17,8	16,7	1,0	4	

12. It is observed that the content of soluble solids of the grape musts varies from year to year, mainly according to the variety, the degree of maturation of the grapes and environmental factors. The minimum concentration of soluble solids of the experimental musts of the white grapes studied in this period was 10.9, in the 2019 harvest, for the White Niagara. And, between red grapes, the "Bordô" cultivar, in the 2019 harvest, showed the lowest content, with an average of 12.0 °Brix.

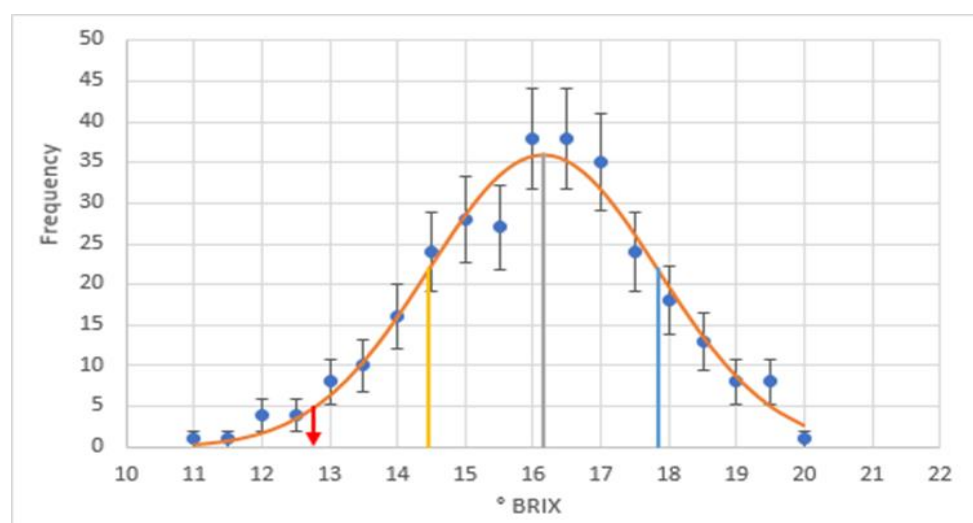
13. Considering the most produced varieties in Brazil, of the species *Vitis labrusca* and hybrids, as well as the ones that presented the lowest values of soluble solids, the "Bordô" variety was chosen as a reference for the study, as representative of the red grapes, and the White Niagara, as a representative of white ones.

14. As shown in Figure 02 below, it is observed that, for the "Bordô" variety, considering one deviation (~68% of the population) of the normalized mean, the average value of soluble solids, expressed in °Brix, is 14.2. Considering two deviations (~95% of the population), this value would change to 12.5° Brix.



**Figure 02.** Normalized curve of the soluble solid's values of the "Bordô" variety, from 2012 to 2021

15. Analyzing the White Niagara data (Figure 03), it is observed that, considering one deviation (~68% of the population) of the normalized mean, the average value of soluble solids, expressed in °Brix, is 14.5. Considering two deviations (~95% of the population), this value would change to 12.7° Brix.



**Figure 03.** Normalized curve of the soluble solid's values of the White Niagara variety, from 2012 to 2021

## RECOMMENDATION

Considering the rationale presented, Brazil proposes for consideration, in **Appendix I**, the **PROJECT DOCUMENT "PROPOSAL FOR THE AMENDMENT OF THE GENERAL STANDARD FOR FRUIT JUICES AND NECTARS (CODEX STAN 247-2005)"** for the stratification of the single Brix reference to encompass the distinction between the *Vitis vinifera L* and *Vitis labrusca* species, to improve both precision and coverage of the standard for better adoption and transparency in the trade of grape juices.

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**PROJECT DOCUMENT**  
**PROPOSAL FOR THE AMENDMENT OF THE GENERAL STANDARD FOR FRUIT JUICES AND**  
**NECTARS (CODEX STAN 247-2005)**  
**(For consideration by CCEXEC)**

**1. Purposes and the scope of the Standard:**

Grape juices produced from *Vitis vinifera* are significantly different from those produced from *Vitis labrusca*, being sugar content one of the most important parameters. Data collected in real production situations demonstrate that the sugar content of juices from *V. labrusca* are consistently below the minimum brix level of 16.0 at CXS 247/2005. In this sense, besides a positive nutritional impact due to a lower sugar content, grape juice from *V. Labrusca* provides an adequate balance between sweetness and acidity which is appreciated by the consumers.

The objective of the proposed amendment is to improve the precision of the General Standard for Fruit Juices and Nectars (CXS 247/2005), to correctly reflect the minimum Brix level for reconstituted grape juice elaborated with *V. labrusca* and hybrids thereof by adding to the Annex of the Standard a specific limit for this specie.

The proposal encompasses the stratification of the referred single Brix level for grape juice into 2 groups: One group for *V. vinifera* and hybrids thereof, keeping the minimum Brix of 16.0; and another group for *V. labrusca* and hybrids thereof, with a proposed minimum Brix of 14.0.

The proposal is in line with the current labeling provisions in CXS 247/2005, especially Sections 8.1.1.1 and 8.1.2.4, as well as with the provisions regarding the authenticity methodology listed in Section 9.

In addition, the proposed amendment is intended to encompass the diversity within the grape juice industry among member countries. It improves both precision and coverage of the Standard, envisaging better adoption and transparency in the trade of grape juices. Furthermore, the amendment aims to facilitate international trade and to promote the offer of grape juices from diverse regions, in line with the sustainable development goals - SDG 02 (food security and better nutrition) and SDG 12 (responsible consumption and production).

**2. Relevance and timeliness:**

Vine is widely cultivated due to the economic value of wine and other grape derivatives. The grape berry is characterized by the presence of a wide variety of flavonoids, which have been investigated for their health promoting properties. The scientific research in the field of non-alcoholic grape products has been further stimulated in the last years globally.

In 2019, the International Organization of Vine and Wine (OIV) started to work on the Definition of Reconstituted Grape Juice (Provisional Draft Resolution VITI-SCRAISIN 20-678B), in the Sub-commission Table Grapes, Raisins and Unfermented Vine Products (SCRAISIN), as proposed initially by the Brazilian delegation. Currently, after many discussions in the working group and with the OIV member countries, the project is pending on the harmonization of the minimum Brix level, as the Brazilian delegation warns that for *V. labrusca* grapes and their hybrids, the Brix level should be 14.0, instead of 16.0 (recommended at CODEX STAN 247 2005). As the organization and the member countries wish to be harmonized with the international standard, at the last meeting of the SCRAISIN the President of the Group suggested to move the document forward the resolution to step 7; notwithstanding, further forwarding of the document at OIV would be dependent on the request for amendment of the current standard for the minimum Brix level of reconstituted grape juice of the Codex Alimentarius.

In that sense, Brazil expressed its willingness to bring this situation to the attention of the Executive Committee of The Codex Alimentarius Commission as it would be important to evaluate whilst current standard may be reviewed to provide a better guidance to member countries and the grape juice industry, taking into consideration that the reference at the Annex need to be amended as a unique Minimum Brix Value for both grape species may not be inclusive for all grape varieties, bringing prejudice to the *V. labrusca* and hybrids thereof.

**3. The main aspects to be covered:**

During the 4<sup>th</sup> Session of the Ad hoc Codex Intergovernmental Task Force on Fruit and Vegetable Juices (Fortaleza, Brazil, 11 - 15 October 2004), the Task Force agreed to retain the minimum Brix value of 16.0 as proposed at its Session and confirmed by the Brix calculation form used to determine the international average

Brix values for grape juice.

This amendment work aims to update the Minimum Brix Level for reconstituted grape juices and reconstituted purée in the Standard 247/2005 (Fruit Juices And Nectars) – Annex, proposing the separation of the single reference into 2 groups: Group 1 - *Vitis vinifera* and hybrids thereof, keeping the minimum Brix of 16.0; and the Group 2 - *Vitis labrusca* and hybrids thereof, with a minimum Brix of 14.0.

In addition, taking into account the recommendation to move to more inclusive standards where possible, the amendment work would bring clarity to the Standard, enabling clear correlation between the Standard and the species of grapes listed in its Annex.

#### **4. An assessment against the *Criteria for the Establishment of Work Priorities*:**

According to the OIV (2022), the global vineyard surface area is estimated to be 7.3 mha in 2021. Grape is produced at commercial scale in 91 countries of the world (FAOSTAT, 2020), making it available worldwide for direct consumption and for the elaboration of non-alcoholic and alcoholic derivative products. Data from the FAOSTAT (2020) displays that the total quantity of grape juice exported in 2020 was 643,079 tonnes, representing a total of \$ 697,749K, worldwide.

Therefore, the proposal for the amendment of the Codex Standard for Grape Juice is consistent with the *Criteria for the Establishment of Work Priorities* of the Codex Alimentarius Commission Procedural Manual, in particular the criterion:

- i. Volume of production and consumption in individual countries and volume and pattern of trade between countries; and
- ii. International and regional market potential.

#### **5. Relevance to the Codex Strategic Objectives:**

The proposed amendment meets the criteria outlined in Goals 1 and 2 of the Codex Strategic Plan 2020-2025, which are:

Goal 1.2: Timely Codex response to emerging issues and the needs of members. Addressing this current issue as aforementioned stated in a timely manner enables Codex to revise and respond, effectively and expeditiously, through the promotion of a sound regulatory framework worldwide for foods entering international trade.

Goal 2.2: Promote the submission and use of globally representative data in developing and reviewing Codex standards. Increased use of Codex Standards is achieved by making the standard always updated, representing the specification of each product globally. Effective response of the Codex Alimentarius, such as the proposed update, enables internationally harmonized efforts to provide inclusive documents.

#### **6. Information on the relation between the proposal and other existing Codex documents as well as other Ongoing Work:**

This proposal is related to the existing Codex Standard for Fruit Juices and Nectars (CODEX STAN 247-2005).

#### **7. Identification of Requirement for Availability of Expert Scientific Advice:**

Given that the expected changes are punctual and related to consistency improvement, no scientific advice is intended as necessary.

#### **8. Identification of need for technical input to the Standard from external bodies:**

None.

#### **9. Proposed timeline for completion of work:**

It is expected that the decision to undertake this amendment would be accepted by the Commission taking into account the critical review conducted by the Executive Committee, in line with Section II of the Procedural Manual - *Procedures for the elaboration of Codex standards and related texts*.

It is suggested the issue of a Circular Letter to Member Countries requesting comments whether the proposed amendment outlined in Annex 1 is ready for adoption.



## ANNEX 1: Proposed Amendment

Proposed Amendment to the GENERAL STANDARD FOR FRUIT JUICES AND NECTARS (CODEX STAN 247-2005):

MINIMUM BRIX LEVEL FOR RECONSTITUTED JUICE AND RECONSTITUTED PURÉE AND MINIMUM JUICE AND/OR PURÉE CONTENT FOR FRUIT NECTARS (% V/V) AT 20 °C

<b>Botanical Name</b>	<b>FRUIT'S COMMON NAME</b>	<b>Minimum Brix Level for Reconstituted Fruit Juices and Reconstituted Purée</b>	<b>Minimum Juice and/or Purée Content (% v/v) for Fruit Nectars</b>
<i>Vitis vinifera L. or hybrids thereof</i>	Grape	16.0	50.0
<i>Vitis labrusca or hybrids thereof</i>		<b><u>14.0</u></b>	