

# CODEX ALIMENTARIUS COMMISSION



Food and Agriculture  
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Agenda Item 2.5

CX/EXEC 24/87/2 Add.4  
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## JOINT FAO/WHO FOOD STANDARDS PROGRAMME EXECUTIVE COMMITTEE OF THE CODEX ALIMENTARIUS COMMISSION

Eighty-seventh Session  
*FAO Headquarters, Rome, Italy*  
*18 – 22 November 2024*

### CRITICAL REVIEW - PART V PROPOSED AMENDMENT OF THE *GENERAL STANDARD FOR FRUIT JUICES AND NECTARS* (CXS 247-2005)

#### BACKGROUND

1. CAC46 (2023) agreed to establish an electronic working group (EWG) under CAC, chaired by Brazil, to consider a proposal to amend the *General Standard for Fruit Juices and Nectars* (CXS 247-2005) as presented in CAC/46 CRD51 regarding the Brix level for grape juice from *Vitis labrusca* and hybrids thereof, and submit a report to Codex Secretariat for consideration by CCEXEC's critical review for further recommendations to the Commission.
2. Brazil, as Chair of the EWG, submitted the EWG report (Appendix I) which included a proposed amendment to the Annex of the *General Standard for Fruit Juices and Nectars* (CXS 247-2005). It is proposed to present the Brix level provision for grape juice from *Vitis labrusca* and hybrids thereof based on the same approach that has already been used in the same standard for other fruit juices and nectars, namely those from apple, pineapple, and orange.
3. The objective of the proposed amendment is to improve the precision of CXS 247-2005 and to correctly reflect the minimum Brix level for reconstituted grape juice elaborated with *V. labrusca* and hybrids thereof.
4. The circular letter (CL) requesting comments on the proposed amendment was issued in September 2024 (CL 2024/80-CAC) with a deadline of 15 October 2024, which was extended to 21 October 2024. The comments will be available in CX/CAC 24/47/17, Add. 1.

#### NEXT STEPS

5. CCEXEC87 is invited to:
  - review the report of the EWG (Appendix I) and the comments to CL 2024/80-CAC received; and
  - make recommendations to CAC47 on how to proceed regarding the proposed amendment as presented in Table 1 of Appendix I.

**Appendix I****REPORT OF THE ELECTRONIC WORKING GROUP ON THE PROPOSED AMENDMENT OF BRIX LEVEL FOR GRAPE JUICE FROM *VITIS LABRUSCA* OR HYBRIDS THEREOF**

(Prepared by the Electronic Working Group chaired by Brazil)

**BACKGROUND**

1. The [General Standard for Fruit Juices and Nectars \(CXS 247-2005\)](#) was developed by the *ad hoc* Codex Intergovernmental Task Force on Fruit and Vegetable Juice (TFFJ) in 2005. This Task Force was dissolved by CAC26 (2005) and this text is currently under the purview of the Codex Committee on Processed Fruits and Vegetables (CCPFV), which was adjourned *sine die* by CAC43 in 2020.
2. The current minimum of soluble solids established for reconstituted grape juice (16 °Brix) excludes up to 45% of the juice produced from *Vitis labrusca* L. cultivated in the main Brazilian producer region, depending on the climate conditions of each vintage year.
3. In 2018, the Brazilian delegation proposed the definition of reconstituted grape juice within the International Organisation of Vine and Wine (OIV). After progressing in stages, at the 2022 General Assembly of the OIV, this draft resolution moved to stage 7, pending Brazil's submission of the request to the Codex Alimentarius to revise the minimum soluble solids level for reconstituted grape juice in CXS 247-2005 to avoid inconsistencies in standards from different organizations.
4. At the 22nd session of the FAO/WHO Coordinating Committee for Latin America and the Caribbean (CCLAC22) (2022), Brazil introduced a discussion paper (LAC22/CRD07) on a proposal for an amendment of the *General Standard for Fruit Juices and Nectars (CXS 247-2005)*. CCLAC22 supported the proposal which would improve both precision and coverage of the standard for better adoption and transparency in the trade of grape juices (REP23/LAC, paragraphs 96-97).
5. The proposed amendment concerns the Annex of CXS 247-2005 where it is proposed to stratify the referred single minimum Brix level for grape juice into two groups; one group for *Vitis vinifera* and hybrids thereof, keeping the current minimum Brix level of 16.0; and another group for *V. labrusca* and hybrids thereof, with a proposed minimum Brix level of 14.0. The objective of the proposed amendment is to improve the precision of CXS 247-2005 and to correctly reflect the minimum Brix level for reconstituted grape juice elaborated with *V. labrusca* and hybrids thereof by adding to the Annex a specific limit for this species.
6. A proposal for amending CXS 247-2005 was submitted to the Codex Secretariat by Brazil and presented to CCEXEC83 (CX/EXEC 22/83/2 Add.3).
7. The Codex Secretariat subsequently issued a circular letter (CL) (CL 2023/27/OCS-EXEC) requesting the views of Members and Observers on the proposed amendment to the *General Standard for Fruit Juices and Nectars (CXS 247-2005)*.
8. In CAC/46 CRD51, Brazil proposed to address the issue by adding a note to the relevant table in the Annex of CXS 247-2005 indicating possible deviations from the minimum Brix level, noting that this approach had already been used for other fruit juices and nectars, such as those from apple, pineapple, and orange. This is presented in Table 1 below.

**Table 1:** Proposed amendment of Brix level for grape juice from *Vitis labrusca* or hybrids thereof

Botanical Name	Fruit's Common Name	Minimum Brix level for Reconstituted Fruit Juices and Reconstituted Purée	Minimum Juice and/or Purée Content (% v/v) for Fruit Nectars
<i>Vitis vinifera</i> L. or hybrids thereof <i>Vitis labrusca</i> or hybrids thereof	Grape	16.0 It is recognized that in different countries, the Brix level may naturally differ from this value. In cases where the Brix level is consistently lower than this value, reconstituted juice of lower Brix from these countries introduced into international trade will be acceptable, provided it meets the authenticity methodology listed in the <i>General Standard for Fruit Juices and Nectars</i> and the level will not be below 14°Brix for grape juice from <i>Vitis labrusca</i> and hybrids thereof.	50.0

9. CAC46 (2023) agreed to establish an electronic working group (EWG) under CAC to consider the proposal to amend the *General Standard for Fruit Juices and Nectars* (CXS 247-2005) as set out in CAC/46 CRD51 regarding the Brix level for grape juice from *Vitis labrusca* and hybrids thereof.

#### TERMS OF REFERENCE

10. The Terms of Reference (TORs) of the EWG were as follows:
- a. To consider the proposal to amend the *General Standard for Fruit Juices and Nectars* (CXS 247-2005) as set out in CAC/46 CRD51 regarding the Brix levels for *Vitis labrusca* and hybrids thereof and submit a report to the Codex Secretariat for consideration by CCEXEC's critical review for further recommendations to the Commission.
  - b. To make its best endeavour to report back to the Codex Secretariat at least 3 months ahead of CAC47.

#### PARTICIPATION AND METHODOLOGY

11. The EWG was chaired by Brazil. It had 42 registered participants representing 18 Members; Australia, Austria, Bolivia (Plurinational State of), Brazil, Canada, European Union (EU), Guatemala, Hungary, Peru, Poland, Portugal, Republic of Korea, Saudi Arabia, Spain, Türkiye, United States of America, Uruguay and Venezuela (Bolivarian Republic of), and 4 Observer organizations; ACEAA, FIVS, IFU and OIV.

12. The timetable for the work was as follows:
- EWG Subscription: 15 February 2024
  - Upload 1st draft: 1 March 2024
  - Deadline for comments: 15 April 2024
  - Upload 2nd draft: 15 May 2024
  - Deadline for comments: 30 June 2024
  - EWG report sent to the Codex Secretariat: 31 July 2024

13. The EWG was managed in an open and inclusive manner, where all the participants had the time and opportunity to present their concerns and propositions.

#### ANALYSIS OF DISCUSSIONS

14. Regarding the first draft of the document, two Members expressed support for the Brazilian proposal while three Members and one Observer participant expressed concerns.

15. The second draft of the document addressed the requests sent by the Members of the EWG, however two Members and two Observers continued to have concerns.

16. To discuss technical issues and facilitate consensus-building, the main issues addressed were as follows:

- a. Representativeness of data: To elucidate the inquiry from some Members on the representativeness of the data, the EWG Chair complemented the data presented before with statistical data from the 2023 and 2024 vintages, showing the wide variation of the soluble solids content for *Vitis labrusca* juices between 2023 and 2024 vintages as presented in Annex 1.
- b. Adulteration/Food fraud: There were concerns that the implementation of the change suggested by the EWG Chair could increase the risk of adulteration of reconstituted grape juice by dilution. The EWG Chair pointed out that the possibility of adulteration should not invalidate the technical and scientific justifications on this matter, as there were analytical resources as a form of control, such as isotopic analysis, for the case of water addition. Besides that, the EWG Chair mentioned that it was important to highlight that there were other discussions related to food fraud within the Codex Alimentarius Commission including the development of guidance on the prevention and control of food fraud currently under discussion in the Codex Committee on Food Import and Export Inspection and Certification Systems (CCFICS), that could assist in addressing any concerns related to adulteration. The EWG Chair also pointed out that the aim of the proposal was to make the current international standard (CXS 247-2005) more inclusive for all Members.

- c. Restoring/sensorial characteristics: Another point of the discussion was regarding the restoring of the juice concentrate from *Vitis labrusca* and hybrids thereof with water. It was clarified that, for this species, restoring the juice concentrate up to a value higher than 14 °Brix would affect the balance between sugar content and acidity and consequently alter the sensorial quality and characteristics of the product. Thus, the expected sensorial characteristics would not be achieved.
- d. Labelling/certification: It was discussed and clarified that labelling and certification should not be a problem since the said proposal does not create distinctions for labelling and does not mislead consumers or cause difficulties in market transactions. In line with the current reality for other fruit juices and nectars, such as those from apple, pineapple and orange, this proposal does not intend to generate the need for certification of subspecies or varieties in the grape juice trade.
- e. Size of Grape production: In response to the questioning of the size of a single Member grape production and its importance on the international market, the EWG Chair highlighted that adopting this proposal will allow the *General Standard for Fruit Juices and Nectars* (CXS 247-2005) to better reflect the characteristics of Members' grape production, which is in accordance with the core values of Codex, especially inclusiveness.

## CONCLUSIONS

17. At the end of the commenting period on the second draft, it was not possible to reach consensus in the EWG since two Members still expressed concerns with the proposal. Despite all the scientific data demonstrated that supported the Brazilian claim, no presentation of scientific basis was identified that would provide counterpoints to the Brazilian proposal and no alternative approach or language was suggested to improve the proposed amendment.

18. Since Codex Alimentarius standards should cover the conditions of different Member countries, regardless of the size of their production and/or exports and based on the discussion paper provided in Annex III of CX/EXEC 22/83/2 Add.3, the EWG Chair considers that the proposed amendment is in accordance with the core values of Codex.

19. Moreover, it is worth mentioning the alignment of this proposal with the Codex Strategic Plan 2020-2025, which states that the establishment and revision of international food standards should address current and emerging issues considering the needs of Members.

## RECOMMENDATIONS

20. In view of the above, the EWG Chair recommends CAC47 to adopt the proposed amendment as presented in Table 1, considering the technical consent expressed by most EWG participants.

## ANNEX 1

## RELEVANT DATA ON GRAPE AND GRAPE JUICE PRODUCTION IN BRAZIL

The Brazilian study published at the *Journal of Food Composition and Analysis* shared data available from harvests from 2012 to 2022. In response to the request from some Members to present more statistical data and to provide the latest information available, we present updated data concerning grape production in Rio Grande do Sul, the main producer state in Brazil, and the soluble solids profile of the harvests 2023 and 2024.

Table 1 details the grape production in the years 2018 to 2023 and shows how important the production of *Vitis labrusca* and hybrids thereof is in weight compared to *Vitis vinifera* production in Brazil.

**Table 1.** Comparison of the production of grapes destined for industrialization in the State of Rio Grande do Sul – years from 2018 to 2023.

Grape / production (1000 tonnes) per vintage	2018	2019	2020	2021	2022	2023
<i>Vitis vinifera</i>	65.7	70.6	69.3	96.1	96.5	99.7
<i>Vitis labrusca</i> and hybrids	598.5	543.7	433.2	638.3	587.2	565.2
Total of grapes	664.2	614.3	502.5	734.4	683.7	664.9

Source: SISDEVIN/SDA – Sistema de Cadastro Vinícola - Secretaria Estadual da Agricultura, Pecuária, Produção Sustentável e Irrigação.

Concerning grape production in Rio Grande do Sul, Table 2 details the volume of grape juice and concentrated grape juice produced from 2019 to 2023.

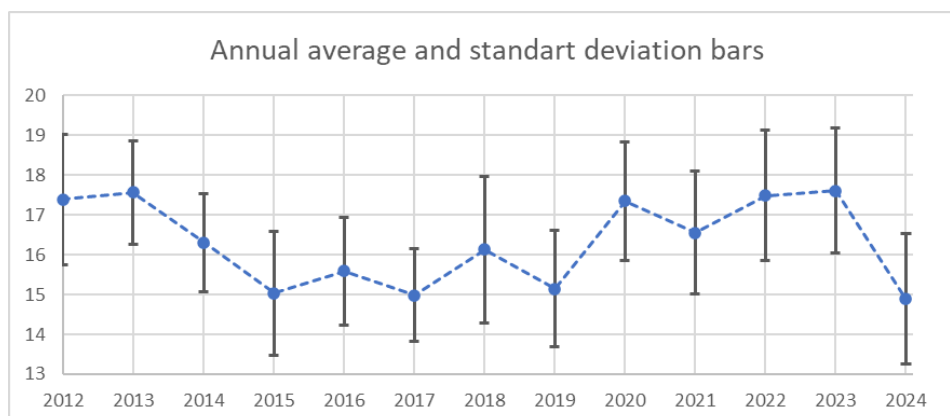
**Table 2.** Production of juice in vintages from 2019 to 2023 in Rio Grande do Sul.

Product/ Quantity (million liters) per vintage	2019	2020	2021	2022	2023
Sweetened grape juice	0.12	0.11	0.05	0.08	0.09
NFC* white grape juice	1.66	2.22	68.0	2.09	1.69
NFC*rosé grape juice	0.07	0.06		0.05	0.03
NFC*red grape juice	48.5	38.4		33.1	36.4
<b>Total of grape juice</b>	<b>50.9</b>	<b>40.8</b>	<b>68.1</b>	<b>35.2</b>	<b>38.2</b>
<b>Total of concentrated grape juice</b>	<b>26.8</b>	<b>28.0</b>	<b>32.1</b>	<b>29.9</b>	<b>28.2</b>

\* NFC: Not from concentrate

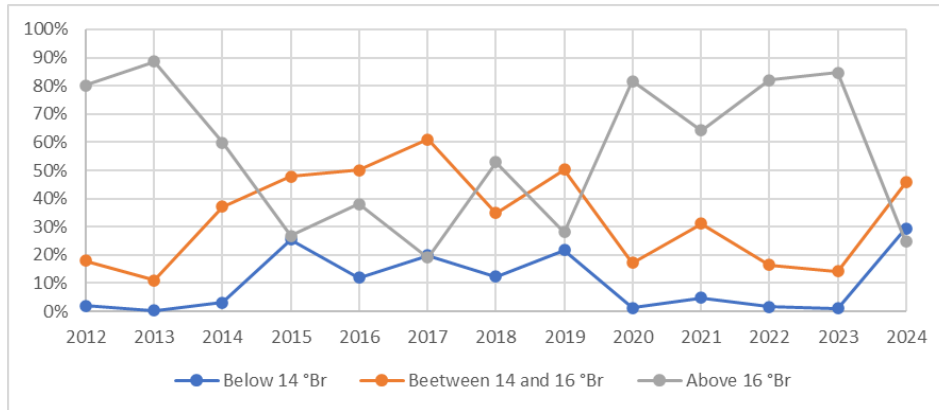
Source: SISDEVIN/SDA – Sistema de Cadastro Vinícola - Secretaria Estadual da Agricultura, Pecuária, Produção Sustentável e Irrigação.

As exposed before, in response to the request of some Members of EWG, we updated the data until 2024, and the results are shown in Figures 1 and 2. It is important to highlight that the number of samples seeks to represent approximately the fractions that each variety has in the total production.



**Figure 1.** Annual average and standard deviation of soluble solids content expressed in °Brix from 2012 to 2024 vintage in the State of Rio Grande do Sul - Brazil.

It is evident that edaphoclimatic factors have been varying each year, altering the content of soluble solids very significantly. A parameter that we consider to be extremely relevant is the analysis of the percentages of production in the three ranges of interest: below 14 °Brix, between 14 and 16 °Brix and above 16 °Brix. The graph below (Figure 2) shows these three lines and makes it evident that the evaluation of average Brix values must be done with caution, in a way that it is necessary to consider the variability of all available samples as a representation of total production.

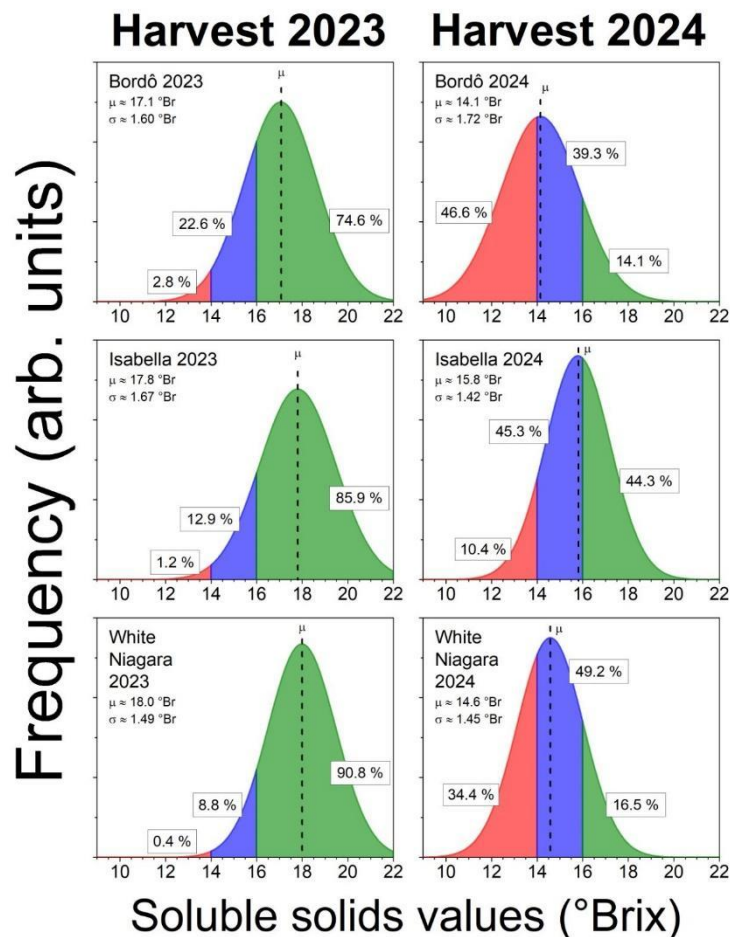


**Figure 2.** Percentage of samples with soluble solids content below 14 °Brix, between 14 and 16 °Brix and above 16 °Brix, from 2012 to 2024 vintage, State of Rio Grande do Sul - Brazil.

The data shows that, in the 2012, 2013, 2020, 2022 and 2023 harvests, around 80% of the production had a concentration of soluble solids above 16 °Brix. However, in the 2015, 2016, 2017, 2019 and 2024 harvests, around 50% of production had a concentration of soluble solids between 14 and 16 °Brix.

The analysis can be refined based on the fractions of participation of each varietal in the total production. The three varieties with the highest production are historically “Bordô” (23% in 2023 and 31% in 2024), Isabella (25.5% in 2023 and 24.6% in 2024) and White Niagara (4.3% in 2023 and 5.3% in 2024). We consider that the average and variability calculated only with the values available for each variety better characterizes the production generated with these varieties.

In this way, Figure 3 shows a comparison between the 2023 and 2024 harvests for the most produced grapes: Bordô, Isabella and White Niagara. The graphics show clearly that the last vintage, 2024, had a totally different behavior when compared to the more successful harvest 2023.



**Figure 3.** Comparison of the percentage of samples with soluble solids content below 14 °Brix, between 14 and 16 °Brix and above 16 °Brix, for Bordô, Isabella and White Niagara grapes.

There are some important points to highlight regarding these statistical data:

- Deviations from normality of all data sets with more than four samples were tested. Using the Shapiro-Wilk test, at the 5% level of significance, no set has any indication that it does not follow a normal distribution. This indicates that modeling using a normal distribution with sample mean and standard deviation is suitable for all data sets.
- Only the BRS Cora variety had a sample size lower than four units in some years. However, the participation of this variety in total production is relatively small, without prejudice to the discussion on the limit of soluble solids.
- From normal modeling, an average with a certain value means that 50% of the production has soluble solids above this average value and 50% below. For example, if the average is 16 °Brix, it is estimated that half of the production is below this value. Therefore, depending on the variability of values, it is necessary to verify the amount of production that is in the range between 14 and 16 °Brix.