Peng, Yan

From: Balentine, Douglas
Sent: Tuesday, November 21, 2023 12:02 PM
To: Peng, Yan
Cc: Reese, Daniel
Subject: RE: Codex standard for orange juice

Hi:

The Codex standard does fix a minimum brix of 10 excluding sugars. [redacted] (b) (5) [redacted]?

I am not aware that Codex is currently working on any updates to the standard

Best

Have a Happy Thanksgiving as well

Doug

From: Peng, Yan <Yan.Peng@fda.hhs.gov>
Sent: Tuesday, November 21, 2023 11:06 AM
To: Balentine, Douglas <Douglas.Balentine@fda.hhs.gov>
Cc: Reese, Daniel <Daniel.Reese@fda.hhs.gov>
Subject: Codex standard for orange juice

Hi Doug,

My name is Vivien in Daniel Reese's group. We are working on the petition for pasteurized orange juice and (b) (5) [redacted]. [redacted] (b) (5) [redacted]?

Your input is highly appreciated.

Wish you a Happy Thanksgiving!

Thanks,

Vivien Yan Peng, Ph.D.

Food Chemist
Product Evaluation and Labeling Branch
Division of Food Labeling and Standards
Office of Nutrition and Food Labeling
Center for Food Safety and Applied Nutrition
U.S. Food and Drug Administration
Tel: 240-402-8435
Yan.Peng@fda.hhs.gov

Peng, Yan

From: Peng, Yan
Sent: Monday, November 27, 2023 3:18 PM
To: Reese, Daniel
Subject: RE: POJ RFI comments summary and option paper for POJ CP - please review by Dec. 8, 2023

Hi Dan,

I dig into CASPER regarding the USDA's stand on Brix as shown below:

11/7/2018: USDA was also present at one of the meetings regarding the enforcement discretion for three years to allow a deviation from the minimum Brix level
3/4/2019: Jessica Brower (USDA, AMS, SCP, SCI division) sent an email to FDA about the data of average Brix of oranges in FL from 2017-2019, so USDA should be well aware of the Brix issue for orange juice in FL.
10/26/2021 Meeting minutes with Office of Rep. Wasserman Schultz:

- (b) (5) [redacted].

11/8/2021 Meeting minutes with Florida Citrus Mutual:

- (b) (5) [redacted].

Let me know if any questions.

Thanks,

Vivien Yan Peng, Ph.D

From: Reese, Daniel <Daniel.Reese@fda.hhs.gov>
Sent: Friday, November 24, 2023 12:10 PM
To: Peng, Yan <Yan.Peng@fda.hhs.gov>
Subject: RE: POJ RFI comments summary and option paper for POJ CP - please review by Dec. 8, 2023

Hi Vivien,

Can you look in Casper at the old meeting minutes with USDA to see the discussion on 10 Brix?

Thanks,

Dan

From: Kavanaugh, Claudine <Claudine.Kavanaugh@fda.hhs.gov>
Sent: Monday, November 20, 2023 3:18 PM
To: Peng, Yan <Yan.Peng@fda.hhs.gov>
Cc: Hansen, Patricia A <Patricia.Hansen@fda.hhs.gov>; Szybist, Lynn <Lynn.Szybist@fda.hhs.gov>; Reese, Daniel

<Daniel.Reese@fda.hhs.gov>
Subject: RE: POJ RFI comments summary and option paper for POJ CP - please review by Dec. 8, 2023

HI Vivien and Dan,

A few items for you to f/u on, but very helpful paper and comment summary. I think we will also have to consider the new CP we received on OJ as well in considering next steps.
Have a wonderful Thanksgiving.

Thanks,

Claudine

From: Peng, Yan <Yan.Peng@fda.hhs.gov>
Sent: Wednesday, November 8, 2023 4:05 PM
To: Kavanaugh, Claudine <Claudine.Kavanaugh@fda.hhs.gov>
Cc: Hansen, Patricia A <Patricia.Hansen@fda.hhs.gov>; Szybist, Lynn <Lynn.Szybist@fda.hhs.gov>; Reese, Daniel <Daniel.Reese@fda.hhs.gov>
Subject: POJ RFI comments summary and option paper for POJ CP - please review by Dec. 8, 2023

- Due Date: December 8, 2023
- Requested action: Review
- Subject: POJ RFI comments summary and the option paper for POJ CP
- Return recipient/alternate: Vivien Yan Peng/Dan Reese

Vivien Yan Peng, Ph.D.

Food Chemist
Product Evaluation and Labeling Branch
Division of Food Labeling and Standards
Office of Nutrition and Food Labeling
Center for Food Safety and Applied Nutrition
U.S. Food and Drug Administration
Tel: 240-402-8435
Yan.Peng@fda.hhs.gov

Peng, Yan

From: Moura, Fabiana
Sent: Wednesday, October 26, 2022 12:12 PM
To: Peng, Yan
Subject: RE: nutrition profile of orange juice

Hi Vivien,

I honestly don't know the answer to that question. It would need a little more digging into the literature, regarding ripening of orange. I know that orange as a fruit it does not ripe after it has been picked up from the tree. I don't know if this information is helpful.

Thanks,
Fabiana

From: Peng, Yan <Yan.Peng@fda.hhs.gov>
Sent: Wednesday, October 26, 2022 11:28 AM
To: Moura, Fabiana <Fabiana.Moura@fda.hhs.gov>
Subject: RE: nutrition profile of orange juice

Hi Fabiana,

Thank you for sharing the reference and explanation. In the case of juice concentrate of high Brix of 65, because the product is concentrated by removing water so the nutrients increase with Brix. I agree with you that if such narrow range would make a difference. This petition is about the pasteurized orange juice made with the oranges with different Brix of 10.5, 10.25 and 10. It might be possible that vitamins change with Brix due to some biochemical reaction during the ripening of orange but I am wondering how mineral change with Brix during ripening of orange.

Thanks,

Vivien Yan Peng, Ph.D

From: Moura, Fabiana <Fabiana.Moura@fda.hhs.gov>
Sent: Wednesday, October 26, 2022 11:07 AM
To: Peng, Yan <Yan.Peng@fda.hhs.gov>
Subject: RE: nutrition profile of orange juice

Hi Vivien,

(b) (5)

).

The fact that is pasteurized orange juice, the pasteurization *per se* won't make a big impact in the concentration of nutrients in the final product since the exposure time to a high temperature is very short (15-30 sec.)

https://www.tetrapak.com/solutions/processing/main-technology-area/heatingsolutions/why-we-pasteurize-fruit-drinks

Fabiana

From: Peng, Yan <Yan.Peng@fda.hhs.gov>
Sent: Tuesday, October 25, 2022 2:50 PM
To: Moura, Fabiana <Fabiana.Moura@fda.hhs.gov>
Subject: RE: nutrition profile of orange juice

Hi Fabiana,

Thank you for your reply. Do you have any idea of the potential rational for expecting magnesium, potassium and folate to increase with increase in Brix? If you don't know, no worries.

Thank you very much for all your help.

Appreciate,

Vivien Yan Peng, Ph.D

From: Moura, Fabiana <Fabiana.Moura@fda.hhs.gov>
Sent: Tuesday, October 25, 2022 12:31 PM
To: Peng, Yan <Yan.Peng@fda.hhs.gov>; Rivers, Crystal <Crystal.Rivers@fda.hhs.gov>
Cc: Reese, Daniel <Daniel.Reese@fda.hhs.gov>; Fitzpatrick, Blakeley <Blakeley.Fitzpatrick@fda.hhs.gov>
Subject: RE: nutrition profile of orange juice

Hi Vivien,

In general, I would expect magnesium, potassium and folate to increase with increase in Brix, I could not find a literature that relates to this range of Brix (10.0 to 10.5).

Fabiana F. Moura, Ph.D.
Nutrition Science Review Branch

Center for Food Safety and Applied Nutrition
Office of Nutrition and Food Labeling
U.S. Food and Drug Administration
fabiana.moura@fda.hhs.gov

From: Peng, Yan <Yan.Peng@fda.hhs.gov>
Sent: Monday, October 24, 2022 11:22 AM
To: Moura, Fabiana <Fabiana.Moura@fda.hhs.gov>; Rivers, Crystal <Crystal.Rivers@fda.hhs.gov>
Cc: Reese, Daniel <Daniel.Reese@fda.hhs.gov>; Fitzpatrick, Blakeley <Blakeley.Fitzpatrick@fda.hhs.gov>
Subject: RE: nutrition profile of orange juice

Hi Fabiana,

Thank you very much for the research of the vitamin C in citrus juice (concentrate), which is very helpful. Would you expect any changes in minerals (i.e., potassium, magnesium) and folate with the Brix for pasteurized orange juice?

Your help is very appreciated.

Thanks,

Vivien Yan Peng, Ph.D

From: Moura, Fabiana <Fabiana.Moura@fda.hhs.gov>
Sent: Friday, October 21, 2022 11:42 AM
To: Peng, Yan <Yan.Peng@fda.hhs.gov>; Rivers, Crystal <Crystal.Rivers@fda.hhs.gov>
Cc: Reese, Daniel <Daniel.Reese@fda.hhs.gov>; Fitzpatrick, Blakeley <Blakeley.Fitzpatrick@fda.hhs.gov>
Subject: RE: nutrition profile of orange juice

Vivien,

Thank you for providing the citizen petition and appendix 4.

Regarding your inquiry on the rationale for vitamin C increases with decreasing in Brix in pasteurized orange juice, I did a literature search and found one article by Kanner et al. 1982 (attached) showing a lower destruction of ascorbic acid with a lower Brix (Fig. 3, page 431) on *orange juice concentrate*. The data was reported for samples stored for 200 days at 25°C with a wide range of Brix (10-60). No rationale was provided for this effect.

However, the opposite effect (i.e., reduced degradation of ascorbic acid at higher total soluble solid) has been reported in other scientific articles and provided a rationale:

Cited in Robertson and Samaniego-Esguerra 1990 (attached), Navarro et al. 1982 reported on orange juice concentrate:
Navarro ***et al.*** (1980) compared the stability at 0"-2"C of orange concentrates between 20" and 60"Brix and found higher Brix concentrates to be more stable with respect to ascorbic acid retention. Lee and Labuza (1975) found that ascorbic acid destruction rates increased with increasing water activity **(aJ** over the range 0.32-0.84 **a,,,.**
NAVARRO, **J.** L. PEREZ, R., GASQUE, F. and LAFUENTE, B. 1980. Stability of orange juice concentrate during aseptic refrigrated storage. Revista de Agroquimica y Tecnologia de Alimentos, ***20,*** 389-398.

Although, Robertson and Samaniego-Esguerra 1990 reported on the effect of soluble solids on ascorbic acid in *lemon juice* concentrate, this article provides a rationale for the reduced ascorbic acid degradation at higher soluble solid:

- The reason for the reduced ascorbic acid degradation at higher **TSS** is not clear, but it is possible that certain components of lemon juice (e.g., sugars and acid) at high concentrations produce a stable or protective environment for ascorbic acid.
- Lin and Agalloco (1979) observed that the degradation of ascorbic acid in an ascorbic acid solution was significantly retarded if sugar syrup was used in preparing the solution. They speculated that some kinds of complex molecules were formed between the ascorbic acid and the sugar that were more stable than the ascorbic acid by itself.
- The decrease in ascorbic acid degradation with an increase in TSS of the juice observed in this study may also be attributed to a decrease in moisture and water activity, since it has been reported that in dehydrated foods and model systems, the destruction rate of ascorbic acid increased with increasing moisture and water activity (Karel and Nickerson 1964; Lee and Labuza 1975; Riemer and Karel 1977; Singh ***et al.*** 1976). Values for the water activity **(aJ** of citrus juice concentrates have been published in the literature, the **a,** of 5O"Brix orange juice concentrate being reported as 0.892-0.905 (Chen 1987).

In summary, only one article that I found supported the “lower destruction of ascorbic acid” with a lower Brix concentration, all other citations are in agreement with a reduced ascorbic acid degradation (i.e., higher content of ascorbic acid) with a higher total soluble solids/Brix.

Please let me know if you have any further questions.

Thank you!

Fabiana F. Moura, Ph.D.
Nutrition Science Review Branch

Center for Food Safety and Applied Nutrition
Office of Nutrition and Food Labeling
U.S. Food and Drug Administration
fabiana.moura@fda.hhs.gov

From: Peng, Yan <Yan.Peng@fda.hhs.gov>
Sent: Thursday, October 20, 2022 12:26 PM
To: Rivers, Crystal <Crystal.Rivers@fda.hhs.gov>
Cc: Reese, Daniel <Daniel.Reese@fda.hhs.gov>; Moura, Fabiana <Fabiana.Moura@fda.hhs.gov>; Fitzpatrick, Blakeley <Blakeley.Fitzpatrick@fda.hhs.gov>
Subject: RE: nutrition profile of orange juice

Hi Crystal,

Attached is the petition. The nutrition label is in the end of the attached consumer survey. Let me know if any questions.

Thank you in advance for your help.

Appreciate,

Vivien Yan Peng, Ph.D

From: Rivers, Crystal <Crystal.Rivers@fda.hhs.gov>
Sent: Thursday, October 20, 2022 10:21 AM
To: Peng, Yan <Yan.Peng@fda.hhs.gov>
Cc: Reese, Daniel <Daniel.Reese@fda.hhs.gov>; Moura, Fabiana <Fabiana.Moura@fda.hhs.gov>; Fitzpatrick, Blakeley <Blakeley.Fitzpatrick@fda.hhs.gov>
Subject: RE: nutrition profile of orange juice

Vivien,

Could we get a copy of the citizen petition on pasteurized juice that you are working on? I have been talking with Fabiana in our group about your question. She has more of a [redacted (b) (6)] than I do and she is working on putting something together for you. It would be helpful to us if we could see the petition.

Thanks,
Crystal

Crystal Rasnake Rivers, MS
Nutrition Science Review Branch
Office of Nutrition and Food Labeling

Center for Food Safety and Applied Nutrition
U.S. Food and Drug Administration
HFS-830
5001 Campus Drive
College Park, MD 20740
Phone: (240) 402-1444

From: Peng, Yan <Yan.Peng@fda.hhs.gov>
Sent: Tuesday, October 18, 2022 10:24 AM
To: Rivers, Crystal <Crystal.Rivers@fda.hhs.gov>
Cc: Reese, Daniel <Daniel.Reese@fda.hhs.gov>
Subject: RE: nutrition profile of orange juice

Hi Crystal,

Thank you for your email. Would you expect the minerals change with the Brix?

I appreciate if you can reply by this week.

Appreciate,

Vivien Yan Peng, Ph.D

From: Rivers, Crystal <Crystal.Rivers@fda.hhs.gov>
Sent: Tuesday, October 18, 2022 8:53 AM
To: Peng, Yan <Yan.Peng@fda.hhs.gov>
Cc: Reese, Daniel <Daniel.Reese@fda.hhs.gov>
Subject: RE: nutrition profile of orange juice

Vivien,

Just wanted to let you know that I am looking in to this issue. I need to check with others in NPS to see if we can find an explanation for you on why vitamin C increased with decreasing brix. To answer your question on calculating DFE's for folate the mcg of naturally occurring folate in juice the mcg DFE are the same.

When do you need an answer by?

Thanks,
Crystal

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5001 Campus Drive
College Park, MD 20740
Phone: (240) 402-1444

From: Peng, Yan <Yan.Peng@fda.hhs.gov>
Sent: Friday, October 14, 2022 2:13 PM
To: Rivers, Crystal <Crystal.Rivers@fda.hhs.gov>
Cc: Reese, Daniel <Daniel.Reese@fda.hhs.gov>
Subject: nutrition profile of orange juice

Hi Crystal,

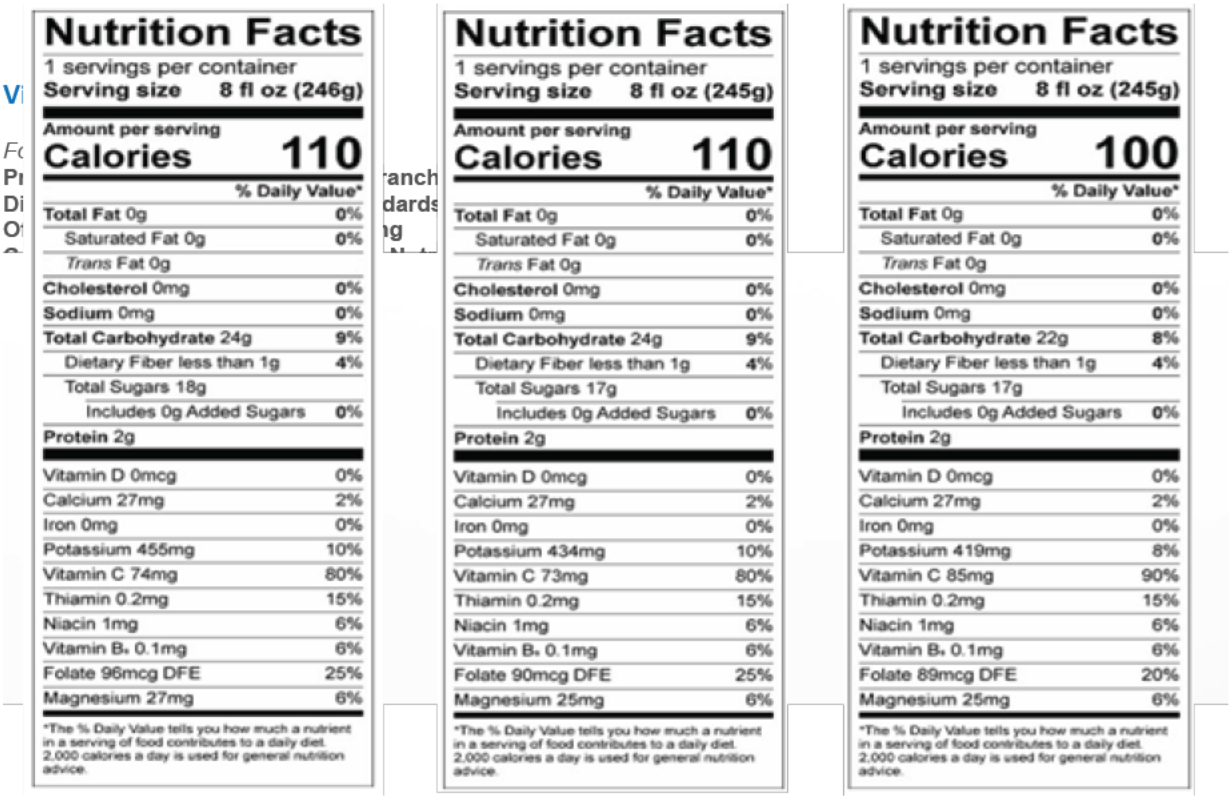
This is Vivien in Daniel Reese's team PELB 1. I am working on a citizen petition on pasteurized orange juice that requests to amend the minimum requirement of Brix level for pasteurized orange juice from 10.5° to 10°. The petitioners provided some nutrition labels for the orange juice of different Brix levels as shown below, potassium, folate and magnesium decrease with the decrease in Brix while vitamin C increases with the decrease in Brix. Claudine suggested me consulting with you on the NFL, i.e., the accuracy of these nutrition data and how to calculate the folate equivalent. Would you expect that the minerals would change with Brix like this? What could be the rationale that the vitamin C decreases and then increases with the decrease in Brix.

Let me know if any questions. Your input is very appreciated.

Have a good weekend!

Appreciate,

10.5° Brix 10.25° Brix 10.0° Brix



Nutrition Facts
1 servings per container
Serving size 8 fl oz (246g)
Amount per serving
Calories 110

	% Daily Value*
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 0mg	0%
Total Carbohydrate 24g	9%
Dietary Fiber less than 1g	4%
Total Sugars 18g	
Includes 0g Added Sugars	0%
Protein 2g	
Vitamin D 0mcg	0%
Calcium 27mg	2%
Iron 0mg	0%
Potassium 455mg	10%
Vitamin C 74mg	80%
Thiamin 0.2mg	15%
Niacin 1mg	6%
Vitamin B_6 0.1mg	6%
Folate 96mcg DFE	25%
Magnesium 27mg	6%

*The % Daily Value tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Nutrition Facts
1 servings per container
Serving size 8 fl oz (245g)
Amount per serving
Calories 110

	% Daily Value*
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 0mg	0%
Total Carbohydrate 24g	9%
Dietary Fiber less than 1g	4%
Total Sugars 17g	
Includes 0g Added Sugars	0%
Protein 2g	
Vitamin D 0mcg	0%
Calcium 27mg	2%
Iron 0mg	0%
Potassium 434mg	10%
Vitamin C 73mg	80%
Thiamin 0.2mg	15%
Niacin 1mg	6%
Vitamin B_6 0.1mg	6%
Folate 90mcg DFE	25%
Magnesium 25mg	6%

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1 servings per container
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Amount per serving
Calories 100

	% Daily Value*
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 0mg	0%
Total Carbohydrate 22g	8%
Dietary Fiber less than 1g	4%
Total Sugars 17g	
Includes 0g Added Sugars	0%
Protein 2g	
Vitamin D 0mcg	0%
Calcium 27mg	2%
Iron 0mg	0%
Potassium 419mg	8%
Vitamin C 85mg	90%
Thiamin 0.2mg	15%
Niacin 1mg	6%
Vitamin B_6 0.1mg	6%
Folate 89mcg DFE	20%
Magnesium 25mg	6%

*The % Daily Value tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Peng, Yan

From: Moura, Fabiana
Sent: Friday, October 21, 2022 11:42 AM
To: Peng, Yan; Rivers, Crystal
Cc: Reese, Daniel; Fitzpatrick, Blakeley
Subject: RE: nutrition profile of orange juice
Attachments: Journal of Food Science - March 1982 - KANNER - Storage Stability of Orange Juice Concentrate Packaged Aseptically (1).pdf; Journal of Food Quality - October 1990 - ROBERTSON - EFFECT OF SOLUBLE SOLIDS AND TEMPERATURE ON ASCORBIC ACID DEGRADATION.pdf

Vivien,

Thank you for providing the citizen petition and appendix 4.

Regarding your inquiry on the rationale for vitamin C increases with decreasing in Brix in pasteurized orange juice, I did a literature search and found one article by Kanner et al. 1982 (attached) showing a lower destruction of ascorbic acid with a lower Brix (Fig. 3, page 431) on *orange juice concentrate*. The data was reported for samples stored for 200 days at 25°C with a wide range of Brix (10-60). No rationale was provided for this effect.

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Thank you!

Fabiana F. Moura, Ph.D.
Nutrition Science Review Branch

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fabiana.moura@fda.hhs.gov

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Sent: Thursday, October 20, 2022 12:26 PM
To: Rivers, Crystal <Crystal.Rivers@fda.hhs.gov>
Cc: Reese, Daniel <Daniel.Reese@fda.hhs.gov>; Moura, Fabiana <Fabiana.Moura@fda.hhs.gov>; Fitzpatrick, Blakeley <Blakeley.Fitzpatrick@fda.hhs.gov>
Subject: RE: nutrition profile of orange juice

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Vivien Yan Peng, Ph.D

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Sent: Thursday, October 20, 2022 10:21 AM
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Cc: Reese, Daniel <Daniel.Reese@fda.hhs.gov>; Moura, Fabiana <Fabiana.Moura@fda.hhs.gov>; Fitzpatrick, Blakeley <Blakeley.Fitzpatrick@fda.hhs.gov>
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Vivien,

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To: Rivers, Crystal <Crystal.Rivers@fda.hhs.gov>

Cc: Reese, Daniel <Daniel.Reese@fda.hhs.gov>
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Let me know if any questions. Your input is very appreciated.

Have a good weekend!

Appreciate,

10.5° Brix

Nutrition Facts

1 servings per container

Serving size 8 fl oz (246g)

Amount per serving

Calories 110

	% Daily Value*
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 0mg	0%
Total Carbohydrate 24g	9%
Dietary Fiber less than 1g	4%
Total Sugars 18g	
Includes 0g Added Sugars	0%
Protein 2g	
Vitamin D 0mcg	0%
Calcium 27mg	2%
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Vitamin C 74mg	80%
Thiamin 0.2mg	15%
Niacin 1mg	6%
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Folate 96mcg DFE	25%
Magnesium 27mg	6%

*The % Daily Value tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

10.25° Brix

Nutrition Facts

1 servings per container

Serving size 8 fl oz (245g)

Amount per serving

Calories 110

	% Daily Value*
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 0mg	0%
Total Carbohydrate 24g	9%
Dietary Fiber less than 1g	4%
Total Sugars 17g	
Includes 0g Added Sugars	0%
Protein 2g	
Vitamin D 0mcg	0%
Calcium 27mg	2%
Iron 0mg	0%
Potassium 434mg	10%
Vitamin C 73mg	80%
Thiamin 0.2mg	15%
Niacin 1mg	6%
Vitamin B_6 0.1mg	6%
Folate 90mcg DFE	25%
Magnesium 25mg	6%

*The % Daily Value tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

10.0° Brix

Nutrition Facts

1 servings per container

Serving size 8 fl oz (245g)

Amount per serving

Calories 100

	% Daily Value*
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 0mg	0%
Total Carbohydrate 22g	8%
Dietary Fiber less than 1g	4%
Total Sugars 17g	
Includes 0g Added Sugars	0%
Protein 2g	
Vitamin D 0mcg	0%
Calcium 27mg	2%
Iron 0mg	0%
Potassium 419mg	8%
Vitamin C 85mg	90%
Thiamin 0.2mg	15%
Niacin 1mg	6%
Vitamin B_6 0.1mg	6%
Folate 89mcg DFE	20%
Magnesium 25mg	6%

*The % Daily Value tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Peng, Yan

From: Peng, Yan <Yan.Peng@fda.hhs.gov>
Sent: Monday, December 4, 2023 3:08 PM
To: LaFond, Dorian - MRP-AMS <Dorian.LaFond@usda.gov>
Cc: Daniel Reese-FASContact <Daniel.Reese@fda.hhs.gov>
Subject: Questions on orange juice

Hi Dorian,

My name is Vivien from FDA/CFSAN and I got your contact info from my supervisor, Dan Reese. I have a couple of questions regarding the Codex standard for orange juice. We have received a couple citizen petitions requesting FDA to amend the standard for orange juice.

- **Brix issue**:

Under 21 CFR 146.140, the standard requires a minimum Brix level of 10.5 for pasteurized orange juice. The petition asks FDA to amend the minimum Brix level from 10.5 to 10.

What I understand from the Codex standard for fruit juice and nectars is that “fruit juice: directly expressed by mechanical extraction processes.” (2.1.1.1) There is minimum Brix level for reconstituted orange juice: 11.8-11.2 and consistent with application of national legislation of the importing country but not lower than 11.2. It is recognized that in different countries, the Brix level may naturally differ from this range of value. In cases where the Brix level is consistently lower than this range of values, reconstituted juice of lower Brix from these countries introduced into

international trade will be acceptable, provided it meets the authenticity methodology listed in the General Standard for fruit juices and nectars and the level will not be below 10 Brix. (Highlighted on page 16).
However, AIJN Code of practice defines minimum corresponding Brix level of 10 for direct juice.

Question: If we remove the minimum Brix level for orange juice, would it be consistent with the Codex standard? Are there any concerns? Are you aware of any ongoing work on international standards regarding the Brix level for orange juice?

Responses:

- **No, it would not be consistent with the Codex standard, because 10^0 Brix is the absolute minimum requirement.**
- **10.5^0 Brix is the minimum requirement within the United Sates Standards for Grades of Orange Juice which also align with the Standard of Identity. However, if the Standard of Identity changes USDA would be guided accordingly.**
- **I am not aware of any ongoing work on international standards regarding the Brix level for orange juice.**

- **Taxonomy**

The standard for orange juice (21 CFR 146.135) provides for certain species of oranges that can be used in the standard. The petition requests FDA to update the orange taxonomy and include to-be-registered cultivar group. We are not familiar with orange taxonomy. If you think this is beyond your expertise, do you have any USDA contacts that we can reach out for consultation?

Response: **The person I rely on for orange and other citrus taxonomy is:**

Chaires, J. Peter
Executive Director New Varieties Development& Management Corp
Phone: 863.682.0151
Mobile: (b) (6)
Bus Fax: Lakeland Fax: 863.688.6758
Email: pchaires@flcitruspackers.org

Your help is highly appreciated.

Appreciatively,

, Ph.D.

Food Chemist
Product Evaluation and Labeling Branch
Division of Food Labeling and Standards
Office of Nutrition and Food Labeling
Center for Food Safety and Applied Nutrition
U.S. Food and Drug Administration
Tel: 240-402-8435
Yan.Peng@fda.hhs.gov

Peng, Yan

From: Hammond, Seyra
Sent: Thursday, December 1, 2022 9:25 AM
To: Peng, Yan
Subject: RE: USDA grading system

Hi Vivien

What I know about the grading system for OJ is from our interactions with AMS with regard to the OJ brix issue. So it is very limited. I believe that you were involved in many of those same meetings. So I don't think I have anything additional. I would think AMS needs to be kept in the loop throughout the process since their grading standard references our SOI. If you want to reach out to them I would start with any of the folks we previously worked with like Jessica Brower and Linda Staten. I believe there is an MOU in place that allows us to share info with them. You may want to ask Dan and Lynn who were also involved in those meetings. Andrea was also involved in this issue before you joined DFLS. It's been going on for some time.

I found this on the internet: https://www.ams.usda.gov/sites/default/files/media/Canned_Orange_Juice_Standard[1].pdf I'm not sure if this is what they use or if this is current. You may want to check with AMS.

You can search in CASPER for orange juice. Among the results, you can check my notes and documents in the following WA: https://cfsanappsinternal.fda.gov/scripts/casper/project/default.cfm?page=FolderEdit&processid=975&folderid=101175

Thanks,

Seyra Hammond (she/her)
Consumer Safety Officer

Center for Food Safety and Applied Nutrition
Office of Nutrition and Food Labeling
U.S. Food and Drug Administration
seyra.hammond@fda.hhs.gov

From: Peng, Yan <Yan.Peng@fda.hhs.gov>
Sent: Tuesday, November 29, 2022 10:45 AM
To: Hammond, Seyra <Seyra.Hammond@fda.hhs.gov>
Subject: USDA grading system

Hi Seyra,

Are you familiar with USDA grading system for orange or orange juice? I am working on a citizen petition that request to amend the SOI for pasteurized orange juice by adjusting the minimum requirement of Brix level. Do you have any suggestion whether we need to work with USDA on this topic and how if so. Your input is highly appreciated.

Appreciate,

Thanks,

Vivien Yan Peng, Ph.D.

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