CODEX ALIMENTARIUS COMMISSION

Food and Agriculture Organization of the United Nations

World Health Organization

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Agenda Items 1, 3.1, 4.1, 5.1, 5.3, 6, 7.1, 7.2, 8 **MAS45/CRD31**

ORIGINAL LANGUAGE ONLY

JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX COMMITTEE ON METHODS OF ANALYSIS AND SAMPLING

Forty-fifth Session

Budapest, Hungary

9-13 March 2026

COMMENTS OF CHILE

Agenda item 1: Adoption of the agenda

Contexto/Contex:

Aprobación de agenda Provisional/ Approval of the provisional agenda

Posición país/Country position:

De acuerdo con el orden del día/ According to the agenda

Agenda item 3.1: Methods of analysis and sampling submitted by Codex subsidiary bodies

CODEX ALIMENTARIUS COMMISSION (CAC48)

Método para la saturación de sal en pescado salado y pescado seco salado de la familia de peces Gadidae/Method for salt saturation in salted fish and dried salted fish of the Gadidae family of fishes.

Spanish:

Es adecuado establecer métodos basados en criterios. Sin embargo, hacemos las siguientes sugerencias con respecto a la tabla:

a. El rango aplicable cuando el valor de NM es un entero debe redondearse a números enteros para obtener las mismas cifras significativas, excepto que el límite inferior es superior al NM.

b. En cuanto a los criterios de rendimiento del método, el % RSDR debe considerarse en números enteros y sin decimales, ya que el decimal no es significativo en este caso y el valor debe redondearse; por ejemplo, 5,3 % debe ser 5 % y 5,7 % debe ser 6 %.

El principio del método AOAC 937.09 es la titulación, pero se basa en la argentometría; por lo tanto, debe complementarse con la titulación (argentometría).

English:

Establishing methods based on criteria is appropriate. However, we make the following suggestions regarding the table:

a. The applicable range when the ML value is an integer should be rounded to whole numbers to have the same significant figures, except that the lower limit is above the ML.

b. Regarding the method's performance criteria, the % RSDR should be considered in whole numbers and without decimals because the decimal is not significant in this case and the value should be rounded, for example 5.3% should be 5% and 5.7% should be 6%.

The principle of the AOAC 937.09 method is Titrimetry but based on argentometry, therefore it must be complemented Titrimetry (Argentometry).

CODEX ALIMENTARIUS COMMISSION (CAC48)

Part A: Method of analysis and preparation of fish samples for salted fish and dried salted fish of the Gadidae family of fishes

(for consideration whether to retain in CXS 234-1999 or revoke)

A1. Method of analysis for salt saturation in salted fish and dried salted fish of the Gadidae family of fishes

Fish and fishery products				
Commodity	***Provision***	***Method***	***Principle***	***Type***
Salted fish and dried salted fish of the Gadidae family of fishes	Salt saturation	See equation in footnote[xii]	Calculation	I

[xii] The % salt saturation is calculated as follows:

1. % salt in water = (% salt content / (% salt content + % moisture)) x 100%
2. % salt saturation = (% salt in water / 26.4 %*) x 100%

* The solubility of sodium chloride in water is 36 g per 100 g water, and the constant is calculated as follows: 36 g sodium chloride / (100 g water + 36 g sodium chloride) x 100% = 26.4%

Chile: in accordance with the proposal

A2. Preparation of fish samples for salted fish and dried salted fish of the Gadidae family of fishes (Appendix VIII Part 1 of CXS 234-1999)

PART 1: PREPARATION OF FISH SAMPLES	
Salted fish and dried salted fish of the Gadidae family of fishes	
1.	Before preparing of a subsample adhering salt crystals should be removed by brushing from the surface of the sample without using water.
2.	The preparation of fish samples for the determination of salt content, and water content in order to calculate the % salt saturation of the fish should be carried out according to AOAC 937.07. The analysis should be on the edible portion of the fish.
3.	Determination should be performed at least in duplicate.

Chile: in accordance with the proposal

Part B: Example methods provided for certain numeric performance criteria for salt and sodium

(for consideration whether to retain the example methods in CXS 234-1999 or replace with more appropriate example methods)

Table 5. Method performance criteria for sodium chloride and for salt determined as chloride expressed as sodium chloride

Commodity	Provision	ML (%)	Min.appl. Range (%)	LOD (%)	LOQ (%)	Precision (RSDR) (%) no more than	Recovery (%)	Examples of applicable methods that meet the criteria	Principle
Boiled dried salted anchovies	Sodium chloride and salt determined as chloride expressed as sodium chloride	15 (NaCl) 9.1 (Cl^-)	~~13.8 16.2~~ **14- 16** 8.3–9.9	1.5 0.9~~1~~	3.0 1.8	5.~~3~~ ~~5.7~~ **6**	98–102 98–102	NMKL 178 AOAC 971.27 AOAC 937.09	Titrimetry (potentiometric) Titrimetry (potentiometric) Titrimetry **(Argentometry)**
Fish sauce	Sodium chloride and salt determined as chloride expressed as sodium chloride	From 20 From 12 (Cl^-)	18–22 11–13	2.0 1~~.2~~	4.0 2~~.4~~	~~5.1~~ **7** ~~5.5~~ **8**	98–102 98–102	NMKL 178 AOAC 971.27 AOAC 976.18 AOAC 937.09	Titrimetry (potentiometric) Titrimetry (potentiometric) Titrimetry (potentiometric) Titrimetry **(Argentometry)**
Salted Atlantic herring and salted sprat	Sodium chloride and salt determined as chloride expressed as sodium chloride	From 1 to 20 (NaCl) From 0.6 to 12 (Cl^-)	0.9–22 0.5–13	0.1 0.06	0.2 0.1~~2~~	8.0 ~~8.6~~ **9**	97–103 **97–103**	NMKL 178 AOAC 971.27 AOAC 976.18 AOAC 937.09	Titrimetry (potentiometric) Titrimetry (potentiometric) Titrimetry (potentiometric) Titrimetry **(Argentometry)**

Commodity	Provision	ML (%)	Min. appl. Range (%)	LOD (%)	LOQ (%)	Precision (RSDR) (%) no more than	Recovery (%)	Examples of applicable methods that meet the criteria	Principle
Salted fish and dried salted fish of Gadidae family of fishes	Sodium chloride and salt determined as chloride expressed as sodium chloride	From 12 (NaCl) From 7.3 (Cl^-)	11–13 6.8–8.1	1.2 0.8	2.4 1.5	~~5.5~~ ~~6~~ ~~5.9~~ ~~6~~	98–102 **98–102**	NMKL 178 AOAC 971.27 AOAC 976.18 AOAC 937.09	Titrimetry (potentiometric) Titrimetry (potentiometric) Titrimetry (potentiometric) Titrimetry **(Argentometry)**
Sturgeon caviar	Sodium chloride and salt determined as chloride expressed as sodium chloride	From 3 to 5 (NaCl) From 1.8 to 3.0 (Cl^-)	2.7–55 1.7–3.4	0.3 0.2	0.6 0.4	~~6.8~~ ~~7~~ ~~7.3~~ **7**	97–103 **97–103**	NMKL 178 AOAC 971.27 AOAC 976.18 AOAC 937.09	Titrimetry (potentiometric) Titrimetry (potentiometric) Titrimetry (potentiometric) Titrimetry **(Argentometry)**

CODEX COMMITTEE ON CONTAMINANTS IN FOOD (CCCF18)

Part A: Sampling plans for total aflatoxins and ochratoxin A in certain spices (i.e. nutmeg, dried chilli and paprika)

Spanish:

Chile está de acuerdo con el plan de muestreo, que es comparable al Reglamento 2023/2782 de la Unión Europea (UE), de 14 de diciembre de 2023. La propuesta del CCF18 contempla ajustar los tamaños de muestra presentados por la UE sin comprometer la representatividad. El número de muestras por sublote y el tamaño de la muestra (Tablas 1 a 6) son adecuados para obtener resultados de medición representativos.

English:

Chile agrees with the sampling plan, which is comparable to European Union (EU) Regulation 2023/2782 of 14 December 2023. The CCF18 proposal considers adjusting the sample sizes presented by the EU without compromising representativeness. The number of samples per sublot and the sample size (Table 1 to Table 6) are adequate for obtaining representative measurement results.

Part B. Numeric performance criteria for total aflatoxins and ochratoxin A in certain spices

(for endorsement and inclusion in CXS 234-1999)

Spanish:

En cuanto al LOQ, el LOD y el rango mínimo aplicable para valores inferiores a 20, es importante determinar si los valores establecidos estarán entre 1 y 20 µg/kg o en el orden de magnitud de 1 µg/kg. Se observan inconsistencias en los valores presentados. Se sugiere solicitar aclaración al CCCF18 sobre el valor utilizado para establecer los valores propuestos en las tablas, o que el comité del CCMAS los establezca considerando el nivel de 1 µg/kg. O proponer métodos para este fin y no criterios.

English:

Regarding the LOQ, LOD, and minimum applicable range for values below 20, it is important to establish whether the established values will be from 1 to 20 µg/kg or on the order of magnitude of 1 µg/kg. Inconsistencies are observed in the presented values. It is suggested that clarification be requested from CCCF18 regarding the value used to establish the values proposed in the tables, or that the CCMAS committee establish them considering the 1 µg/kg level. Or to propose methods for this purpose without criteria.

Commodity	**Analyte**	**ML (µg/kg)**	**LOD (µg/kg)**	**LOQ (µg/kg)**	**ecision (%)**	**Minimal applicable range (µg/kg)**	**ecovery (%)**
Chilli pepper, nutmeg	AFT B1+B2+G1+G2	20	~~≤~~ 4	~~≤~~ 8	< 44	~~11.2 – 28.8~~ **11-29**	60 – 115
	AFB1	-	~~≤ 1~~	~~≤ 2~~	~~< 44~~	~~2.8 – 7.2~~	~~40 – 120~~
	AFB2	-	~~≤ 1~~	~~≤ 2~~	~~< 44~~	~~2.8 – 7.2~~	~~40 – 120~~
	AFG1	-	~~≤ 1~~	~~≤ 2~~	~~< 44~~	~~2.8 – 7.2~~	~~40 – 120~~
	AFG2	-	~~≤ 1~~	~~≤ 2~~	~~< 44~~	~~2.8 – 7.2~~	~~40 – 120~~
Chilli pepper, paprika, nutmeg	OTA	20	≤ 4	≤ 8	< 44	~~11.2 – 28.8~~ **11-29**	60 – 115

Part C: Numeric performance criteria for total aflatoxins in certain food matrices (for endorsement and inclusion in CXS 234-1999)

Commodity	Analyte	ML (µg/kg)	LOD (µg/kg)	LOQ (µg/kg)	Precision (%)	Minimal applicable range (µg/kg)	Recovery (%)
Peanuts intended for further processing	AF B1+B2+G1+G2	15	≤ 3	≤ 6	< 44	~~8.4 - 21.6~~ **8-22**	60 - 115
	AFB1	-	~~≤ 0.75~~	~~≤ 1.5~~	~~< 44~~	~~2.1 - 5.4~~	~~40 - 120~~
	AFB2	-	~~≤ 0.75~~	~~≤ 1.5~~	~~< 44~~	~~2.1 - 5.4~~	~~40 - 120~~
	AFG1	-	~~≤ 0.75~~	~~≤ 1.5~~	~~< 44~~	~~2.1 - 5.4~~	~~40 - 120~~
	AFG2	-	~~≤ 0.75~~	~~≤ 1.5~~	~~< 44~~	~~2.1 - 5.4~~	~~40 - 120~~
Tree nuts destined for further processing: almonds, hazelnuts, pistachios, and shelled Brazil nuts	AF B1+B2+G1+G2	15	≤ 3	≤ 6	< 44	~~8.4 - 21.6~~ **8-22**	60 - 115
	AFB1	-	~~≤ 0.75~~	~~≤ 1.5~~	~~< 44~~	~~2.1 - 5.4~~	~~40 - 120~~
	AFB2	-	~~≤ 0.75~~	~~≤ 1.5~~	~~< 44~~	~~2.1 - 5.4~~	~~40 - 120~~
	AFG1	-	~~≤ 0.75~~	~~≤ 1.5~~	~~< 44~~	~~2.1 - 5.4~~	~~40 - 120~~
	AFG2	-	~~≤ 0.75~~ ~~0,2~~	~~≤ 1.5~~	~~< 44~~	~~2.1 - 5.4~~	~~40 - 120~~
Ready-to-eat tree nuts: almonds, hazelnuts, pistachios and shelled Brazil nuts	AF B1+B2+G1+G2	10	≤ 2	≤ 4	< 44	~~5.6 - 14.4~~ **6-14**	60 - 115
	AFB1	-	~~≤ 0.5~~	~~≤ 1.0~~	~~< 44~~	~~1.4 - 3.6~~	~~40 - 120~~
	AFB2	-	~~≤ 0.5~~	~~≤ 1.0~~	~~< 44~~	~~1.4 - 3.6~~	~~40 - 120~~
	AFG1	-	~~≤ 0.5~~	~~≤ 1.0~~	~~< 44~~	~~1.4 - 3.6~~	~~40 - 120~~
	AFG2	-	~~≤ 0.5~~	~~≤ 1.0~~	~~< 44~~	~~1.4 - 3.6~~	~~40 - 120~~
Dried figs	AF B1+B2+G1+G2	10	≤ 2	≤ 4	< 44	~~5.6 - 14.4~~	60 - 115
	AFB1	~~-~~	~~≤ 0.5~~	~~≤ 1.0~~	~~< 44~~	~~1.4 - 3.6~~	~~40 - 120~~
	AFB2	~~-~~	~~≤ 0.5~~	~~≤ 1.0~~	~~< 44~~	~~1.4 - 3.6~~	~~40 - 120~~
	AFG1	~~-~~	~~≤ 0.5~~	~~≤ 1.0~~	~~< 44~~	~~1.4 - 3.6~~	~~40 - 120~~
	AFG2	~~-~~	~~≤ 0.5~~	~~≤ 1.0~~	~~< 44~~	~~1.4 - 3.6~~	~~40 - 120~~

APPENDIX IV

FAO/WHO COORDINATING COMMITTEE FOR NEAR EAST (CCNE12)

Methods of analysis for provisions in the regional standard for maamoul (Near East) (for endorsement and inclusion in CXS 234-1999)

Chile makes the following comments on the document:

Commodity	Provision	Method	Principle	Type
Maamoul	Extraneous matter	AOAC 972.32	**Flotation - Visual Examination (Microscopy)** ~~**Physical separation and microscopic examination (flotation method)**~~	I
Maamoul	pH	AOAC 981.12	Potentiometry	~~**IV**~~ **I or II** **Chile: This methods is general for foods**
Maamoul	pH	ISO 1842	Potentiometry	IV **Chile: This Method is for fruit and vegetals products. it is not recommended**
Maamoul	Water activity	ISO 18787	Electrometry	II
Maamoul	Moisture	ISO 712	Gravimetry **(Dryng at 130 °C ± 3 °C)**	~~I~~ II
Maamoul	**Moisture**	**NMKL 206**	**Gravimetry (Drying at 102-105°C)**	**I**

APPENDIX V

CODEX COMMITTEE ON SPICES AND CULINARY HERBS (CCSCH8)

Part A: Responses to the matters referred by CCMAS43 (for information)

Chile makes the following comments on the CCSCH8 proposals:

Issue raised	Description/Justification	Reply
The method for mould visible – cloves	Both MPM V-8 and ISO 927 can be used for the analysis of visible mold. Since the ISO standards are more widely accepted internationally, ISO 927 is prefered over MPM V-8 method	**CCSCH8 recommends CCMAS to endorse ISO 927 method as a type I method over Method V-8 for mould visible – cloves.**

Part B: Methods of analysis in spices and culinary herbs (for endorsement and inclusion in CXS 234-1999 and/or revocation)

B1. Methods of analysis submitted by CCSCH7 and updated based on replies from CCSCH8 for CCMAS' endorsement

Commodity	Provision	Method	Principle	Type
Small cardamom	Light seeds	ISO 927	**Visual examination- Gravimetry**	I

Turmeric	Colouring power expressed as curcuminoids	ISO 2825 and ISO 5566	Spectrophotometry	I
Dried or dehydrated chilli pepper and paprika	Pungency, Scoville Heat Units	ASTA 21.3	HPLC **–FLD/UV**	I
Cloves	Mould visible (for whole)	ISO 927	**Visual examination- Gravimetry**	I

B2. Methods of analysis in draft spices and culinary herbs standards submitted by CCSCH8 for CCMAS endorsement

Commodity	Provision	Method	Principles	Type
Vanilla	Moisture content	ISO 5565-2	Distillation	I
Vanilla	Extraneous matter	ISO 927	Visual examination**- ~~followed by~~** Gravimetry	I
Vanilla	Live Insect	ISO 927	Visual examination **~~(by count)~~**	I
Vanilla	Vanillin content on wet basis	ISO 5565-2	HPLC-UV **~~analysis~~**	II
Large cardamom	Moisture	ISO 939	Distillation	I
Large cardamom	Volatile oil (on dry basis)	ISO 939 and ISO 6571	**Distillation** - Calculation ~~from moisture and volatile Oils, Distillation and Distillation~~	I
Large cardamom	Total ash (On dry basis)	ISO 939 and ISO 928	~~Calculation from moisture and Ash (at 550^{O}C),~~ Distillation **- ~~and~~** Gravimetry **(Ashing at 550°C) - Calculation**	I
Large cardamom	Acid insoluble ash (on dry basis)	ISO 939 and ISO 930	~~Calculation from moisture and Ash (at 550^{O}C),~~ Distillation **- ~~and~~** Gravimetry **(Ashing at 550°C) - Calculation**	I
Large cardamom	Extraneous matter	ISO 927	Visual examination **- ~~followed by~~** Gravimetry	I

Large cardamom	Foreign matter	ISO 927	Visual examination ~~followed by~~ Gravimetry	I
Large cardamom	Whole insect live/dead	ISO 927 ~~(For whole)~~	Visual examination ~~(counting)~~	I
Large cardamom	Whole insect live/dead **(for powdered/piece)**	AOAC 975.49 ~~**(For powdered/pieces)**~~	Floatation	I
Large cardamom	Mammalian and/or other excreta	Method V-8 Spices, Condiments, Flavors and Crude Drugs (Macro analytical Procedure Manual) MPM: V-8. Spices ~~https://www.fda.gov/food/laboratorymethods-food/mpm-v-8-spicescondiments-flavors-and-crudedrugs#v32~~	Visual examination ~~followed by~~ Gravimetry	IV
Large cardamom	**Mammalian or/and Other excreta**	**AOAC 993.7 Chile Comments: The AOAC 993.27 is a Method for feces mammalian in spice, is most adecuated Method.**	**Colorimetry (Alkaline Phosphatase)**	**II**
Large cardamom	Visible mould / Mouldy Material	ISO 927	Visual examination ~~followed by~~ Gravimetry	I
Large cardamom	Insect defiled	ISO 927	Visual examination ~~followed by~~ Gravimetry	I
Large cardamom	Empty, malformed and split capsules	ISO 10622:1997	Visual examination ~~(counting)~~	I
Large cardamom	Immature and shriveled capsules/seed	ISO 927	Visual examination ~~followed by~~ Gravimetry	I
Large cardamom	Light seeds	ISO 927	Visual examination ~~followed by~~ Gravimetry	I
Dried or dehydrated coriander	Moisture content~~**~~ (Remove the note; it's better if it's in the method reference)	**ISO 2825 &** ISO 939	Distillation	I
Dried or dehydrated coriander	Total Ash on dry basis~~**~~ (Remove the note; it's better if it's in the method reference)	**ISO 2825,** ISO 939 and ISO 928	~~Calculation from moisture and Ash (at 550^{0}C),~~ Distillation ~~and~~ Gravimetry **(Ashing at 550°C) - Calculation**	I

Dried or dehydrated coriander	Acid Insoluble Ash (dry basis) ** (Remove the note; it's better if it's in the method reference)	**ISO 2825,** ISO 939 and ISO 930	~~Calculation from moisture and Ash (at 550°C),~~ Distillation ~~-and~~ Gravimetry **(Ashing at 550°C) - Calculation**	I
Dried or dehydrated coriander	Volatile oils (dry basis) ** (Remove the note; it's better if it's in the method reference)	**ISO 2825,** ISO 939 and ISO 6571	**Distillation** - Calculation ~~from moisture and volatile Oils, Distillation and Distillation~~	I
Dried or dehydrated coriander	Extraneous Matter	ISO 927	Visual examination ~~followed by~~ Gravimetry	I
Dried or dehydrated coriander	Foreign Matter	ISO 927	Visual examination ~~followed by~~ Gravimetry	I
Dried or dehydrated coriander	Split fruits, Damaged or discoloured fruits	ISO 927	Visual examination- ~~followed by~~ Gravimetry	I
Dried or dehydrated coriander	Mouldy material / Mould visible	ISO 927	Visual examination ~~followed by~~ Gravimetry	I
Dried or dehydrated coriander	Insect Defiled	ISO 927	Visual examination ~~followed by~~ Gravimetry	I
Dried or dehydrated coriander	Live insect	ISO 927	Visual Examination ~~(counting)~~	I
Dried or dehydrated coriander	Dead insect	ISO 927	Visual Examination ~~(counting)~~	I
Dried or dehydrated coriander	Mammalian or/and Other excreta	Method V-8 Spices, Condiments, Flavors and Crude Drugs (Macroanalytical Procedure Manual) MPM: V-8. Spices ~~https://www.fda.gov/food/laboratorymethods-food/mpm-v-8-spicescondiments-flavors-and-crudedrugs#v32~~	Visual examination ~~followed by~~ Gravimetry	IV
Dried or dehydrated coriander	**Mammalian or/and Other excreta**	**AOAC 993.7**	**Colorimetry (Alkaline Phosphatase)**	**II**

~~** For the whole coriander preparation sample, followed by ISO 2825 -~~: Remove the note; it's better if it's in the method reference.

B3. Method of analysis for revocation from CXS 234-1999 based on replies from CCSCH8

Commodity	Provision	Method	Principle	Type
Dried or dehydrated chilli pepper and paprika	Pungency, Scoville Heat Units	ISO 3513	Sensory panel ~~evaluation~~	I

Agenda item 3.2: Methods submitted by CCFO29

APPENDIX I

Method of analysis for the determination of gamma oryzanol in crude rice bran oil (for endorsement)

Fats and oils				
Commodity	**Provision**	**Method**	**Principle**	**Type**
Crude rice bran oil	Gamma oryzanol	See Appendix **	~~Absorption in ultraviolet~~ **Spectrophotometry UV**	III

APPENDIX II

Part 1: Methods of analysis for provisions in the proposed draft standard for microbial omega-3 oils (except for moisture and volatile matter) (for endorsement)

Fats and oils				
Commodity	**Provision**	**Method**	**Principle**	**Type**
Microbial omega-3 oils	Fatty acid composition	ISO 12966-2 and ISO 12966-4	Preparation of FAME* and determination by GC-FID	III **Chile: Ok**
Microbial omega-3 oils	Fatty acid composition	AOCS Ce 2-66 and AOCS Ce 1i-07	Preparation of FAME* and determination by GC-FID	II **Chile: Ok**
Microbial omega-3 oils	EPA and DHA	Ph.Eur. 2.4.29 / USP 401	GC-FID	II **Chile: Ok**
Microbial omega-3 oils	EPA and DHA	AOCS Ce 1i-07	GC-FID	III **Chile: Ok**
Microbial omega-3 oils	Peroxide Value	AOCS Cd 8b-90 / ISO 3960 / NMKL 158 / European Pharmacopoeia 2.5.5	Titrimetry (colorimetr~~yic~~)	I **Chile: Ok**
Microbial omega-3 oils	Anisidine Value	European Pharmacopoeia	Spectrophotometry **-UV**	I **Chile: Ok**

		2.5.36 / AOCS Cd 18- 90/ ISO 6885		
Microbial omega-3 oils	Acid Value	AOCS Ca 5a-40 / AOCS Cd 3d-63 / ISO 660 / NMKL 38 / USP 401, Method 1	Titrimetry **(Acidity)**	I **Chile: Ok**
Microbial omega-3 oils	Unsaponifiable matter	~~**ISO 3596 /**~~ AOCS Ca 6b-53	Gravimetry **(Dryning at 75-80 °C)** and Titrimetry **(Acidity)**	I
Microbial omega-3 oils	Unsaponifiable matter	ISO 3596	Gravimetry **(Dryning at 103 °C)**	**II** **Chile: The principle of Method is diferet**
Microbial omega-3 oils	Moisture	ISO 8534 / **AOCS Ca 2e-84**	Titrimetry (Karl Fisher)	II **Chile: equivalent methods**
~~**Microbial omega-3 oils**~~	~~**Moisture**~~	~~**AOCS Ca 2e-84**~~	~~**Titrimetry**~~	~~**II**~~

*FAME = Fatty Acid Methyl Esters

Part 2: Methods of analysis for the determination of moisture and volatile matter in the proposed draft standard for microbial omega-3 oils (for review of method typing and endorsement)

Fats and oils				
Commodity	**Provision**	**Method**	**Principle**	**Type**
Microbial omega-3 oils	Moisture and volatile matter	ISO 662	Gravimetry **(Dryning at 103 °C ± 2°C)**	~~I~~ **II**
Microbial omega-3 oils	Moisture and volatile matter	AOCS Ca 2c-25	Gravimetry **(Drying at 130 °C ± 1°C)**	I

Agenda item 4.1: Review of methods of analysis in commodity standards (fish and fishery products, fats and oils, cereals, pulses and legumes and derived products)

Spanish:

Chile, agradece la labor del grupo de trabajo. En relación con el documento, formula las siguientes observaciones:

- Mejorar la descripción de los ingredientes activos de forma armonizada.

- Según los principios del Codex, si los métodos no están validados para el producto (alimento) correspondiente, no pueden designarse oficialmente como Método II o III.

- Cuando se proponga un método que considere la determinación de proteínas en función del nitrógeno, el comité de producto deberá especificar el factor Nx que se utilizará para que pueda incorporarse a la norma CXS 234.

A continuación, se detallan las observaciones.

English:

Chile, we appreciate the work carried out by the working group. Regarding the document, makes the following comments:

- Improve the description of the active ingredients in a harmonized manner.

- According to Codex principles, if the methods are not validated for the corresponding commodity (food), they cannot be officially designated as a Method II or III.

- When a method is proposed that considers the determination of protein based on nitrogen, the product committee must specify the Nx factor to be used so that it can be incorporated into CXS 234.

The details of the comments are presented below.

APPENDIX I PART 1: RECOMMENDED AMENDMENTS AND REVOCATIONS TO CXS 234-1999

Note: recommended additions are indicated in **bold** and **underline**, and deletion are indicated with ~~strikethrough~~. The columns 'Codex Standard, Committee' and 'Comments / Recommendations' are included for information and do not form part of the recommended amendments or deletions to CXS 234-1999.

Commodity	Provision	Method	Principle	Type	Codex Standard	Committee	*Comments/ Recommendations*
Fish and Fishery Products							
~~Crackers from marine and freshwater fish, crustacean and molluscan shellfish~~	~~Crude protein~~	~~Described in the standard~~			CXS 222 - 2001	CCFFP	
Crackers from marine and freshwater fish, crustacean and molluscan shellfish	Moisture	~~Described in the standard~~			CXS 222 - 2001	CCFFP	
~~**Crackers from marine and freshwater fish, crustacean and molluscan shellfish**~~	~~**Moisture**~~	~~**AOAC 950.46B (air drying)**~~	~~**Gravimetry - Drying at 125 °C**~~	~~**I**~~	~~**CXS 222 - 2001**~~	~~**CCFFP**~~	**Chile: This method is not validated for the matrix, therefore the proposed modification is not agreed upon.**
Raw bivalve molluscs (shucked)	Drained weight	~~Described in the standard~~			CXS 2922008	CCFFP	
Raw bivalve molluscs (shucked)	Drained weight	**AOAC 953.11**	**Gravimetry**	~~I~~	CXS 2922008	CCFFP	**Chile: OK**

~~Quick frozen fish sticks (fish fingers), fish portions and fish fillets – breaded or in batter~~	~~Determination of fish content (declaration) – Nitrogen~~	~~ISO 937 and see Appendix VI~~	~~Titrimetry (Kjeldahl digestion) and calculation~~	~~II~~	CXS 166– 1989	CCFFP	Endorsed at CCMAS44 (2025)
~~Quick frozen fish sticks (fish fingers), fish portions and fish fillets – breaded or in batter~~	~~Determination of fish content (declaration) – Moisture~~	~~ISO 1442 and see Appendix VI~~	~~Gravimetry and calculation~~	~~I~~	CXS 166– 1989	CCFFP	Endorsed at CCMAS44 (2025)
~~Quick frozen fish sticks (fish fingers), fish portions and fish fillets – breaded or in batter~~	~~Determination of fish content (declaration) – Total fat~~	~~ISO 1443 and see Appendix VI~~	~~Gravimetry and calculation~~	~~I~~	CXS 166– 1989	CCFFP	Endorsed at CCMAS44 (2025)
~~Quick frozen fish sticks (fish fingers), fish portions and fish fillets – breaded or in batter~~	~~Determination of fish content (declaration) – Ash~~	~~ISO 1443 and see Appendix VI~~	~~Gravimetry and calculation~~	~~I~~	CXS 166– 1989	CCFFP	Endorsed at CCMAS44 (2025)
Quick frozen fish sticks (fish fingers), fish portions and fish fillets – breaded or in batter	**Determination of fish content (declaration) – Nitrogen** **Moisture** **Total fat** **Ash**	**ISO 937 and** **ISO 1442 and** **ISO 1443 and** **ISO 936**	**Calculation from Titrimetry (Kjeldahl digestion) and gravimetry**	**I**	CXS 166– 1989	CCFFP	Endorsed at CCMAS44 (2025) **Chile: We disagree with the proposal that does not consider non-protein nitrogen for fish content, nor does it propose a nitrogen conversion factor for fish proteins.**

Fats and oils							
Edible Fats and oils not covered by individual standards	Acidity: acid value	ISO 660 / AOCS Cd 3d-63	Titrimetry	I	CXS 19-1981	CCFO	Update the commodity title in CXS 234 to be consistent with CXS 19-1981
Edible Fats and oils not covered by individual standards	Copper and iron	AOAC 990.05 / ISO 8294 / AOCS Ca 18b-91	Atomic absorption spectrophotometry (direct graphite furnace)	II	CXS 19-1981	CCFO	Update the commodity title in CXS 234 to be consistent with CXS 19-1981
Edible Fats and Oils not Covered by Individual Standards	Peroxide Value	~~ISO 3961:1998~~	~~Titrimetry (colorimetric)~~		CXS 19-1981	CCFO	ISO 3961 is for determination of iodine value
Edible Fats and Oils not Covered by Individual Standards	Peroxide Value	**AOCS Cd 8b-90 / ISO 3960 / NMKL 158/ AOAC 965.33**	**Titrimetry (Colorimetry)**	**I**	CXS 19-1981	CCFO	AOCS Cd 8b-90 / ISO 3960 / NMKL 158 is consistent with CXS 234 for Named Vegetable Oils **Chile: It is suggested to include the AOAC 965.33 method, which is equivalent, and to specify the form of titrimetry whose measurement point is determined by colorimetry.**
~~Fats and Oils not Covered by Individual Standards~~	~~Soap content~~	~~BS 684 Section 2.65~~			CXS 19-1981	CCFO	BS 684-2.5 has been superseded by ISO 10539 / AOCS Cc 17-95 (determination of soap).
~~Named animal fats~~	~~Fatty acid composition~~	~~ISO 5508: 1995/ 5509: 1999~~			CXS 211-1999	CCFO	ISO 5508: 1995/ 5509: 1999 have been withdrawn (de acuerdo)

Named animal fats	Fatty acid composition	**AOCS Ce 2-66 and AOCS Ce 1j-07**	**Preparation of methyl esters and GC-FID**	**II**	CXS 211-1999	CCFO	AOCS Ce 2-66 and AOCS Ce 1j07 and ISO 12966-2 and ISO 12966-4 **Chile: OK**
Named animal fats	Fatty acid composition	ISO 12966-2 and ISO 12966-4	~~Preparation of methyl esters and~~ **~~gas chromatography~~ GC-FID**	III	CXS 211-1999	CCFO	ISO 12966-4 is a general temperature program method for all FAME **Chile: Remove the preparation of methyl esters from the beginning because it corresponds to a sample treatment; the principle is CG-FID.**
Named animal fats	Soap content	**ISO 10539**	**Titrimetry (Alkalinity)**		CXS 211-1999	CCFO	BS 684-2.6 has been superseded by ISO 10539 (determination of soap). **Chile: In order to have clarity on the method to be made official, it is necessary to clarify whether it is the soap content as a contaminant to be determined or the saponification index of the oil.**
Fat Spreads and Blended Spreads	**Milk fat content ~~(Butyric acid)~~**	~~AOAC 990.27; AOCS Ca 5c-87 (97)~~			CXS 2561999	CCFO	CXS 256-1999 defined determination of milk fat content (Butyric acid) because Butyric acid is a naturally occurring shortchain saturated fatty acid in the milk fat of cows and other ruminants but not in animal adipose or vegetable fats – identifies source of fat. The conversion factor to milk fat is user-defined since butyric acid content can be variable. AOAC 990.27 / AOCS Ca 5c-87 both use a packed GC column.
Fat Spreads and Blended Spreads	**Milk fat content ~~(Butyric acid)~~**	**AOAC 2012.13 / ISO 16958 | IDF 231**	**GC-FID and calculation**	**I**	CXS 2561999	CCFO	NOTE AOCS Ca 5e-13 uses a capillary column for determination of butyric acid but has not been fully validated.

							Chile: If the AOCS Ca 5e-13 method is not validated, it cannot be considered for use as a type I method.
Fat Spreads and Blended Spreads	Salt content	~~IDF 12B: 1988, ISO CD 1738 or AOAC 960.29.~~			CXS 2561999	CCFO	
Fat Spreads and Blended Spreads	Salt content	~~AOAC 960.29/ ISO 1738| IDF 12~~			CXS 256-1999	CCFO	
Fat Spreads and Blended Spreads	Salt content	**AOAC 2016.03 / ISO 21422 | IDF 242**	**Titrimetry (Potentiometry)**	**III**			**Chile: OK**
Fat Spreads and Blended Spreads	Vitamin A	~~AOAC 985.30~~; ~~AOAC 992.04; or~~ ~~JAOAC 1980, 63, 4~~	~~HPLC~~ ~~HPLC~~		CXS 256-1999	CCFO	AOAC 985.30 is a method for *sampling*. AOAC 992.04 is validated for milk and milk-based infant formula
Fat Spreads and Blended Spreads	Vitamin A	**EN 12823**	**HPLC-UV ~~detection~~**	**II**	CXS 256-1999	CCFO	EN 12823 validated in margarine **Chile: OK. Remove the word "detection" from "the principle of the method." Only indicate HPLC-UV.**
Fat Spreads and Blended Spreads	Vitamin D	~~AOAC 981.17~~	~~HPLC~~		CXS 256-1999	CCFO	AOAC 981.17 was repealed in 2007
Fat Spreads and Blended Spreads	Vitamin D	**EN 12821 / NMKL 167**	**HPLC-UV**	**II**	CXS 256-1999	CCFO	EN 12821 / NMKL 167, validation in margarine **Chile: OK**

Fat Spreads and Blended Spreads	Vitamin E	ISO 9936~~:1997~~	**HPLC-UV ~~detection~~**	~~II~~ **III**	CXS 256-1999	CCFO	These products may include dairy ingredients (milk fat) but are not is considered applicable milk products per se, so ISO 9936 **Chile: OK. Remove the word "detection" from "the principle of the method." Only indicate HPLC-UV.**
Fat Spreads and Blended Spreads	Vitamin E	**EN 12822**	**HPLC- UV ~~detection~~**	**II**	CXS 256-1999	CCFO	EN 12822 is validated for margarine **Chile: OK**

Named Fatty acid ~~ISO 5509: 2000~~ CXS 210- CCFO ISO 5509 withdrawn by SDO and vegetable oils composition 1999 replaced by ISO 12966 series.

Named vegetable oils	Fatty acid composition	AOCS Ce 2-66 and AOCS Ce 1h-05	**Preparation of methyl esters and GC-FID esters and GC-FID**	**II**	CXS 210-1999	CCFO	AOCS Ce 1h-05 was specifically developed for the isothermal separation of cis/trans FAME prepared from vegetable oils. **Chile: Ok**
Named vegetable oils	Fatty acid composition	**ISO 12966-2 and ISO 12966-4**	**Preparation of methyl esters and GC-FID esters and GC-FID**	**II**	CXS 210-1999	CCFO	ISO 12966-4 is a general temperature program method for all FAME. **Chile: Ok**

Cereals, Pulses, Legumes and Derived Products							
Maize (corn)	Broken kernels	ISO 5223~~-1983~~	**Gravimetry - Sieving ~~(4.5 mm round aperture sieve)~~**	I	CXS 1531985	CCCPL	**Chile: Ok. Eliminate of principle of Method 4.5 mm**
Sorghum grains	Fibre, crude	ICC 113 **/ ISO 6541**	**Gravimetry ~~(separation, - incineration~~ Ashing at 550 °C**	I	CXS 1721989	CCCPL	**Chile: OK. At the beginning of the method, remove the word "separation" and include the incineration temperature of the method.**
Rice	Head rice	ISO 7301 (Annex A)	**Visual examination, ~~length –~~ Micrometry- gravimetry**	I	CXS 1981995	CCCPL	**Chile. Replace the word "legth" with "micrometry" at the beginning of the method. The principle is to measure with a micrometer.**
Rice	Large broken kernel	ISO 7301 (Annex A)	**Visual examination, ~~length –~~ Micrometry- gravimetry**	I	CXS 1981995	CCCPL	**Chile. Replace the word "legth" with "micrometry" at the beginning of the method. The principle is to measure with a micrometer.**
Rice	Medium broken kernel	ISO 7301 (Annex A)	**Visual examination, ~~length –~~ Micrometry- gravimetry**	I	CXS 1981995	CCCPL	**Chile. Replace the word "legth" with "micrometry" at the beginning of the method. The principle is to measure with a micrometer.**
Rice	Small broken kernel	ISO 7301 (Annex A)	**Visual examination, ~~length~~ Micrometry, sieving, gravimetry**	I	CXS 1981995	CCCPL	**Chile. Replace the word "legth" with "micrometry" at the beginning of the method. The principle is to measure with a micrometer.**
Rice	Chips	ISO 7301 (Annex A)	**Sieving, gravimetry**	I	CXS 1981995	CCCPL	
Rice	Heat-damaged kernels	ISO 7301 (Annex A)	**Visual examination, gravimetry**	I	CXS 1981995	CCCPL	

Rice	Damaged kernels	ISO 7301 (Annex A)	**Visual examination, gravimetry**	-	I	CXS 1981995	CCCPL	
Rice	Immature kernels	ISO 7301 (Annex A)	**Visual examination, gravimetry**	-	I	CXS 1981995	CCCPL	
Rice	Chalky kernels	ISO 7301 (Annex A)	**Visual examination, gravimetry**	-	I	CXS 1981995	CCCPL	
Rice	Red kernels	ISO 7301 (Annex A)	**Visual examination, gravimetry**	-	I	CXS 1981995	CCCPL	
Rice	Red-streaked kernels	ISO 7301 (Annex A)	**Visual examination, gravimetry**	-	I	CXS 1981995	CCCPL	
Rice	Pecks	ISO 7301 (Annex A)	**Visual examination, gravimetry**	-	I	CXS 1981995	CCCPL	
Rice	Maximum recommended levels of other types of rice	ISO 7301 (Annex A)	**Visual examination, gravimetry**	-	I	CXS 1981995	CCCPL	
Wheat and durum wheat	Minimum test weight	ISO 7971	**Gravimetry (in 20 L)**	-	I	CXS 199-1995	CCCPL	Mass per hectolitre (100 L) – ratio of the mass of a cereal to the volume it occupies **Chile: OK**
Wheat and durum wheat	Shrunken and broken kernels	ISO 5223	**Sieving**	-	I	CXS 199-1995	CCCPL	**Chile: OK**
Wheat ~~and durum wheat~~	Edible grains other than wheat and durum wheat	ISO 7970 (Annex C)	**Sieving and gravimetry**	-	I	CXS 199-1995	CCCPL	**Chile: OK**
Wheat ~~and durum wheat~~	Damaged kernels	ISO 7970 (Annex C)	**Sieving and gravimetry**	-	I	CXS 199-1995	CCCPL	**Chile: OK**

Wheat ~~and durum wheat~~	Insect bored kernels	~~To be developed~~ **ISO 7970 (Annex C/D)**	**Visual examination ~~and~~ - gravimetry**	**I**	CXS 199- 1995 CCCPL	May be covered by "grain attacked by pests - grain that shows damage owing to an attack by rodents, insects, mites or other pests" OPTION 1: As CCCPL is now identified as an active committee, a request could be sent to CCCPL to establish whether the provision should be changed to 'Grain attacked by pests' and if yes, would the CXS 199 specifications still be applicable? OPTION 2: Is it possible to visually identify and segregate the grain with insect bored kernels from those attacked by rodents, mites or other pests? If yes, an adaptation of ISO 7970 text may be required for the existing provision and specification. Is this a possibility? **Chile: ISO 7970 Annex C/D considers visual examination, which allows for visual differentiation based on the analyst's experience, determining whether the infestation is caused by insects, rodents, or other pests. This standard is accepted because, as a visual inspection, it allows for differentiation.**

~~Wheat and~~ Durum wheat	Edible grains other than wheat and durum wheat	**ISO 11051 (Annex A)**	**Sieving and gravimetry**	**I**	CXS 1991995	CCCPL	**Chile: Ok**
~~Wheat and~~ Durum wheat	Damaged kernels	**ISO 11051 (Annex A)**	**Sieving and gravimetry**	**I**	CXS 1991995	CCCPL	**Chile: Ok**
~~Wheat and~~ Durum wheat	Insect bored kernels	**ISO 11051 (Annex A)**	**Visual examination ~~and~~ - gravimetry**	**I**	CXS 1991995	CCCPL	May be covered by "grain attacked by pests - grain that shows damage owing to an attack by rodents, insects, mites or other pests" As above **Chile: ISO 7970 Annex C/D considers visual examination, which allows for visual differentiation based on the analyst's experience, determining whether the infestation is caused by insects, rodents, or other pests. This standard is accepted because, as a visual inspection, it allows for differentiation.**
Oats	Minimum test weight	ISO 7971 **- 1**	**Gravimetry (in 20 L)**	**I**	CXS 2011995	CCCPL	Mass per hectolitre (100 L) – ratio of the mass of a cereal to the volume it occupies **Chile: Is ISO 7972 part 1**

PART 2: RECOMMENDED AMENDMENTS TO COMMODITY STANDARDS Note: Recommended **additions are indicated in bold and underline, and deletion are indicated with ~~strikethrough~~**

8. METHODS OF ANALYSIS AND SAMPLING

For checking the compliance with this standard, the methods of analysis and sampling contained in the *Recommended methods of analysis and sampling* (CXS 2341999)[i] relevant to the provisions in this standard, shall be used.

~~8.1 Determination of GLC ranges of fatty acid composition~~
~~According to ISO 5509:2000.~~

***STANDARD FOR NAMED VEGETABLE OILS* (CXS 210-1999)**

Chile: in accordance with the proposal

***STANDARD FOR CRACKERS FROM MARINE AND FRESHWATER FISH, CRUSTACEAN AND MOLLUSCAN SHELLFISH* (CXS 222-2001)**

7.3 Analysis

For checking the compliance with this standard, the methods of analysis and sampling contained in CXS 234- 1999 relevant to the provisions in this standard shall be used. oK

~~7.3.1 Determination of crude protein~~

~~According to AOAC 920.87 or 960.52.~~

~~7.3.2 Determination of moisture~~

According to AOAC 950.46B (air drying)

Chile: in accordance with the proposal

***STANDARD FOR LIVE AND RAW BIVALVE MOLLUSCS* (CXS 292-2008)**

Chile: in accordance with the proposal

1.7.3 Analysis

For checking the compliance with this standard, the methods of analysis and sampling contained in *Recommended methods of analysis and sampling* relevant to the provisions in this standard shall be used ~~17.3.1 Determination of drained weight~~

~~In the case of shucked bivalve molluscs, the drained weight shall be determined according to AOAC International official method 953.11.~~

***STANDARD FOR MAIZE (CORN)* (CXS 153-1985)**

Chile: in accordance with the proposal

8. METHODS OF ANALYSIS AND SAMPLING

For checking the compliance with this Standard, the methods of analysis and sampling contained in the Recommended Methods of Analysis and Sampling (CXS 234-1999) relevant to the provisions in this Standard shall be used. (ok)

ANNEX

In those instances where more than one factor limit and/or method of analysis is given we strongly recommend that users specify the appropriate limit and method of analysis.

Factor/Description	Limit	Method of analysis
DEFECTS	MAX: 7.0% of which diseased grains must blemished grains: grains which are insect or vermin damaged, stained, diseased, discoloured, germinated, frost not exceed 0.5% damaged, or otherwise materially damaged	Visual Examination
broken kernels **to Section 8**	MAX: 6.0%	~~ISO 5223-(4.50 mm metal sieve)~~ **Refer**
other grains	MAX: 2.0%	Visual Examination

***STANDARD FOR SORGHUM GRAINS* (CXS 172-1989)**

Chile: in accordance with the proposal

8. METHODS OF ANALYSIS AND SAMPLING

For checking the compliance with this standard, the methods of analysis and sampling contained in the *Recommended methods of analysis and sampling* (CXS 2341999)[ii] relevant to the provisions in this standard shall be used. (ok)

ANNEX

In those instances where more than one factor limit and/or method of analysis is given, we strongly recommend that users specify the appropriate limit and method of analysis.

CRUDE FIBRE	Buyer preference	~~ICC 113~~ ~~Determination of crude fibre value (Type I)~~ ~~— or —~~ ~~ISO 6541 (1981)~~ ~~Agricultural food products determination of crude fibre content-modified Scharrer method~~ **Refer to Section 8**

***STANDARD FOR RICE* (CXS 198-1995)**

Chile: in accordance with the proposal

8. METHODS OF ANALYSIS AND SAMPLING

For checking the compliance with this standard, the methods of analysis and sampling contained in the *Recommended Methods of Analysis and Sampling* (CXS 234-1999) relevant to the provisions in this standard, shall be used. (Ok)

ANNEX

Factor/Description		Limit	Method of analysis
4.	**OTHER QUALITY FACTORS** In those instances where more than one factor limit and/or method of analysis is given it is strongly recommended that users specify the appropriate limit and method of analysis.		
4.1	**Whole Kernel** is a kernel without any broken part.		
4.1.1	**Head Rice** is a kernel, the length of which is equal to or greater than three quarters of the average length of the corresponding whole kernel.	buyer preference	~~ISO 7301 (Annex A)~~ **Refer to Section 8**
4.1.2	**Large Broken Kernel** are fragments of kernel, the length of which is less than three-quarters but greater than one-half of the average length of a corresponding whole kernel.	buyer preference	~~ISO 7301 (Annex A)~~ **Refer to Section 8**
4.1.3	**Medium Broken Kernel** are fragments of kernel, the length of which is equal to or less than one-half but greater than one-quarter of the average length of a corresponding whole kernel.	buyer preference	~~ISO 7301 (Annex A)~~ **Refer to Section 8**

4.1.4	**Small Broken Kernel** are fragments of kernel, the length of which is equal to or less than one-quarter of the average length of a corresponding whole kernel but which does not pass through a metal sieve with round perforation 1.4 mm in diameter.	buyer preference				~~ISO 7301 (Annex A)~~ **Refer to Section 8**
4.1.5	**Chips** are fragments of kernel which pass through a metal sieve with round perforations 1.4 mm in diameter.	0.1% m/m				~~ISO 7301 (Annex A)~~ **Refer to Section 8**
4.2	**Defective Kernels**	**Husked Rice**	**Milled Rice**	**Husked Parboiled Rice**	**Milled Parboiled Rice**	
4.2.1	**Heat-Damaged Kernels** are kernels, whole or broken, that have changed their normal colour as a result of heating. This category includes whole or broken kernels that are yellow due to alteration. Parboiled rice in a batch of non-parboiled rice is also included in this category.	4.0% m/m*	3.0% m/m	8.0% m/m*	6.0% m/m	~~ISO 7301 (Annex A)~~ **Refer to Section 8**
4.2.2	**Damaged Kernels** are kernels, whole or broken, showing obvious deterioration due to moisture, pests, diseases, or other causes, but excluding heat-damaged kernels.	4.0% m/m	3.0% m/m	4.0% m/m	3.0% m/m	~~ISO 7301 (Annex A)~~ **Refer to Section 8**
4.2.3	**Immature Kernels** are unripe and/or undeveloped whole or broken kernels.	12.0% m/m	2.0% m/m	12.0% m/m	2.0% m/m	~~ISO 7301 (Annex A)~~ **Refer to Section 8**
4.2.4	**Chalky Kernels** are whole or broken kernels except for glutinous rice, of which at least three-quarters of the surface has an opaque and floury appearance.	11.0% m/m*	11.0% m/m	N/A	N/A	~~ISO 7301 (Annex A)~~ **Refer to Section 8**

4.2.5	**Red Kernels** are whole or broken kernels with a red-coloured pericarp covering more than one-quarter of their surface.	12.0% m/m	4.0% m/m	12.0% m/m	4.0% m/m	~~ISO 7301 (Annex A)~~ **Refer to Section 8**
4.2.6	**Red-Streaked Kernels** are kernels, whole or broken, with red streaks, the lengths of which may be equal to or greater than one-half of that of the whole kernel, but the surface area covered by these red streaks shall be less than one-quarter of the total surface.	N/A	8.0% m/m	N/A	8.0% m/m	~~ISO 7301 (Annex A)~~ **Refer to Section 8**
4.2.7	**Pecks** are whole or broken kernels of parboiled rice of which more than one-quarter of the surface is dark brown or black in colour.	N/A	N/A	4.0% m/m*	2.0% m/m	~~ISO 7301 (Annex A~~) **Refer to Section 8**
4.3	**Maximum Recommended Levels of Other Types of Rice**					~~ISO 7301 (Annex A)~~ **Refer to Section 8**
	Paddy Rice Husked Rice Milled Rice Glutinous Rice	2.5% m/m N/A N/A 1.0% m/m	0.3% m/m 1.0% m/m N/A 1.0% m/m	2.5% m/m N/A 2.0% m/m 1.0% m/m	0.3% m/m 1.0% m/m% 2.0% m/m% 1.0% m/m	

***STANDARD FOR WHEAT AND DURUM WHEAT* (CXS 199-1995)**

Chile: in accordance with the proposal

8. METHODS OF ANALYSIS AND SAMPLING

For checking the compliance with this standard, the methods of analysis and sampling contained in the *Recommended Methods of Analysis and Sampling* (CXS 234-1999) relevant to the provisions in this standard, shall be used. (ok)

ANNEX

In those instances where more than one factor limit and/or method of analysis is given it is strongly recommended that users specify the appropriate limit and method of analysis.

Factor/Description	Limit		Method of analysis
	Wheat	**Durum Wheat**	
1. **Minimum test weight:** the weight of a hundred litre volume expressed in kilograms per hectolitre.	68	70	The test weight shall be the weight per ISO 79 expressed in kilograms per hectolitre as deter ~~portion of the original **sample.**~~ **Refer to Section 8**
2. **Shrunken and broken kernels:** broken or shrunken wheat or durum wheat which will pass through a 1.7 mm x 20 oblong-holed metal sieve for wheat and through a 1.9 mm x 20 oblongholed metal sieve for durum wheat.	5.0% m/m max	6.0% m/m max	~~ISO 5223-1983 "Test sieves for cereals".~~ **Refer to Section 8**
3. **Edible Grains other than wheat and durum wheat** (whole or identifiably broken)	2.0% m/m max	3.0% m/m max	~~ISO 7970-1987: (Annex C)~~ **Refer to Section 8**
4. **Damaged kernels** (including pieces of kernels that show visible deterioration due to moisture, weather, disease, mould, heating, fermentation, sprouting, or other causes.)	6.0% m/m max	4.0% m/m max	~~ISO 7970-1987: (Annex C)~~ **Refer to Section 8**

***STANDARD FOR DEGERMED MAIZE (CORN) MEAL AND MAIZE (CORN) GRITS* (CXS 155-1985)**

Chile: in accordance with the proposal

8 METHODS OF ANALYSIS AND SAMPLING

For checking the compliance with this standard, the methods of analysis and sampling contained in the *Recommended methods of analysis and sampling* (CXS 234-1999)[iii] relevant to the provisions in this standard, shall be used. (ok)

ANNEX

In those instances where more than one factor limit and/or method of analysis is given, we strongly recommend that users specify the appropriate limit and method of analysis.

Factor/Description	**Limit**	**Method of analysis**
ASH	Max: 1.0% on a dry weight basis	Refer to Section 8
PROTEIN (N x 6.25)	Min: 7.0% on a dry weight basis	~~According to ISO 1871:1975.~~ **Refer to Section 8.**
CRUDE FAT	Max: 2.25% on a dry weight basis	~~According to ISO 5986:1983.~~ **Refer to Section 8.**

***STANDARD FOR OATS* (CXS 201-1995)**

Chile: in accordance with the proposal

8. METHODS OF ANALYSIS AND SAMPLING

For checking the compliance with this standard, the methods of analysis and sampling contained in the *Recommended Methods of Analysis and Sampling* (CXS 234-1999) relevant to the provisions in this standard, shall be used. (ok)

ANNEX

In those instances where more than one factor limit and/or method of analysis is given it is strongly recommended that users specify the appropriate limit and method of analysis.

Factor/Description	Limit	Method of analysis
1 Minimum test weight: At least 46 kg/hl ~~The test weight shall be the weight per ISO~~ The weight of a hundred litre volume of oats expressed as ~~7971-1986 or any other equipment giving~~ kilograms per hectolitre. ~~equivalent results expressed as kilograms per hectolitre as determined on a test portion of the original sample~~		**Refer to Section 8**

APPENDIX II METHODS RECOMMENDED TO BE RETAINED IN CXS 234-1999 WITH NO AMENDMENTS NEEDED

Commodity	Provision	Method	Principle	Type	Codex Standard	Committee	Comments
Crackers from marine and freshwater fish, crustacean and molluscan shellfish	Crude protein	AOAC 2001.11	Titrimetry (Kjeldahl ~~**Digestion**~~)	IV	CXS 222-2001	CCFFP	AOAC 920.87 and AOAC 960.52 recommended to be replaced with AOAC 2001.11. This method has been endorsed by CCMAS43 (2024) **Chile principle of Method i titrimetry (kjendahl)**
Fats and oils (all)	Soap content	ISO 10539 / AOCS Cc 17-95	Titrimetry **(Alkalinity)**	I	The relevant standards under consideration are CXS 19-1981 and CXS 211-1999.	CCFO	BS 684-2.6 has been superseded by ISO 10539 (determination of soap). BS 684-2.5 has been superseded by ISO 10539 / AOCS Cc 17-95 (determination of soap). **Chile: Principle of methods**
Degermed maize (corn) meal and maize (corn) grits	Protein ~~**(N x 6.25)**~~	ICC 105/2 and ICC 110/1	Calculation ~~**from moisture**~~ and Titrimetry (Kjeldahl ~~**digestion**~~)	I	CXS 155-1985	CCCPL	Revoke the method ISO 1871:1975 found in CXS 1551985 ICC methods adopted by CAC46 (present in current CXS 234) **Chile: Factor Nx in Appendix CXS 234**
Degermed maize (corn) meal and maize (corn) grits	Crude fat	AOAC 945.38F and 920.39C and ICC 110/1	Calculation ~~from moisture~~ and Gravimetry ~~(ether extraction)~~	I	CXS 155-1985	CCCPL	Revoke the method ISO 5986:1983 found in CXS 1551985 Methods adopted by CAC46 (present in current CXS 234)

APPENDIX III PROVISIONS FOR WHICH THE EWG WAS UNABLE TO RECOMMEND METHODS, PRINCIPLES AND TYPING

Commodity	Provision	Method	Principle	Type	Codex Standard	Committee	Comments
Oats	Hull-less and broken kernels	To be developed			CXS 201-1995	CCCPL	
Oats	Edible grains other than oats	To be developed			CXS 201-1995	CCCPL	
Oats	Damaged kernels	To be developed			CXS 201-1995	CCCPL	
Oats	Wild oats	To be developed			CXS 201-1995	CCCPL	
Oats	Insect bored kernels	**AOAC 985.36 /AACC 28-22.02**	**Cracking Flotation**	**I**	CXS 201-1995	CCCPL	**Chile: AOAC is Method validated of oats**
Oats	Blemished grains	To be developed			CXS 201-1995	CCCPL	
Peanuts	In-pod defects: Empty pods	To be determined			CXS 200-1995	CCCPL	**NOTE: ISO 6478 withdrawn**
Peanuts	In-pod defects: Damaged pods	To be determined			CXS 200-1995	CCCPL	
Peanuts	In-pod defects: Discoloured pods	To be determined			CXS 200-1995	CCCPL	
Peanuts	Kernel defects: Damaged kernels	**FDA Method MPM: V.10 (v-89)**	**Visual Examination-Gravimetry**	**I**	CXS 200-1995	CCCPL	**Chile: Method of Macroanalytical Procedures Manual FDA for Peanuts**
Peanuts	Kernel defects: Discoloured kernels	To be determined			CXS 200-1995	CCCPL	
Peanuts	Kernel defects: Broken and split kernels	To be determined			CXS 200-1995	CCCPL	
Peanuts	Peanuts other than the designated type	To be determined			CXS 200-1995	CCCPL	

Agenda item 5.1: Fruit juices workable package

APPENDIX I

AMENDMENTS AND REVOCATIONS TO CXS 234-1999 RECOMMENDED BY THE EXPERT GROUP

(For CCMAS' consideration and endorsment)

Note: Amendments are indicated in **bold**, ~~strikethrough~~ and/or underline. Revocations are indicated in **red**. The columns "Juice Min (g/l)", "Juice Max (g/l)" and "Comments" are only for information. Coemments Chile in **Blue**:

Commodity	Provision	Method	Principle	Type	Juice Min (g/l)	Juice Max (g/l)	Comments
~~**Fruit juices and nectars**~~	~~**Pectin (additives)**~~	~~**IFUMA 26**~~	~~**Precipitation / photometry**~~	~~**I**~~			Lack of validation data
~~**Fruit juices and nectars**~~	~~**Sections 3.2 Quality criteria and 3.3 Authenticity of CXS 247-2005**~~[1]	~~**Determination**~~ **of stable** ~~**hydrogen isotope ratio of water from fruit juices ENV 12142**~~	~~**Stable isotope mass spectrometry**~~	~~**II**~~			No longer supported by CEN

[1] 3.4 Verification of composition, quality and authenticity

Fruit juices and nectars should be subject to testing for authenticity, composition and quality where applicable and where required. The analytical methods used should be those found in Section 9 (Methods of analysis and sampling).

The verification of a sample's authenticity/quality can be assessed by comparison of data for the sample, generated using appropriate methods included in the standard, with that produced for fruit of the same type and from the same region, allowing for natural variations, seasonal changes and for variations occurring due to processing.

Fruit juices and nectars	~~**Sections 3.2 Quality criteria and 3.3 Authenticity of CXS 247-2005**~~**XX** **Vitamin C (dehydro-ascorbic acid and ascorbic acid)** **(~~Quality /~~ Authenticity)**	~~**Determination of vitamin C (dehydroascorbic acid and ascorbic acid)**~~ AOAC 967.22	Microfluorometry	III	0.02	0.5	Unless declared as an additive **Chile: OK**
Fruit juices and nectars	Ascorbic acid-L **(additives)**	IFU 17a	HPLC**-UV**	II	0.02	0.5	unless declared as an additive **Chile: OK**
Fruit juices and nectars	Ascorbic acid-L **(additives)**	AOAC 967.21 / ISO 6557-2	**Titrimetry (**Indophenol method**)**	III	0.02	0.5	unless declared as an additive **Chile: OK**

Commodity	Provision	Method	Principle	Type	Juice Min (g/l)	Juice Max (g/l)	Comments
Fruit juices and nectars	Ascorbic acid-L **(additives)**	IFU 17b	**Potentiometric - titrimetry (**iodine**)** ~~**method**~~	III	0.02	0.5	unless declared as an Additive **Chile: Ok**
Fruit juices and nectars	**Determination of glucose, fructose, sucrose and sorbitol** (~~additive /~~ authenticity)	**IFU 67**	**HPLC-RI**	**II**	S = traces, G = 3, F = 3	S = 110, G = 110, F = 110	Unless declared as an additive **Chile: Ok**
Fruit juices and nectars	**Determination of glucose, fructose and sucrose** (~~additive /~~ authenticity)	**NMKL 148**	**HPLC-RI**	**III**	S = traces, G = 3, F = 3	S = 110, G = 110, F = 110	Unless declared as an additive **Chile: Ok**
~~Fruit juices and nectars~~	~~Sections 3.2 Quality criteria and 3.3 Authenticity of CXS 2472005XX~~	~~Determination of **glucose fructose and** saccharose EN 12630 IFUMA 67 NMKL148~~	~~HPLC~~	~~II~~			
~~**Fruit juices and nectars**~~ **cranberry juice cocktail**	Quinic, malic and citric acid ~~**in cranberry juice cocktail and apple juice (permitted ingredients and additives) (Quality / Additive / Authenticity)**~~	~~**Determination of quinic, malic and citric acid in cranberry juice cocktail and apple juice**~~ AOAC 986.13	HPLC**-UV**	III	Q = 5 CJ, C = 5 CJ, M = 5 CH, ~~**Q= traces AJ, C = 0.05 AJ, M= 2 AJ**~~	Q = 15 CJ, C = 15 CJ, M = 10 CJ, ~~**Q= traces AJ, C =0.2 AJ, M= 8 AJ**~~	Unless declared as an Additive **Chile: The cranberry juice cocktail and Apple juice is commodity , not is provision.**
apple juice	**Quinic, malic and citric acid**	**AOAC 986.13**	**HPLC-UV**	**III**	**Q= traces C = 0.05 M= 2**	**Q= traces C =0.2 M= 8**	
~~Fruit juices and nectars~~	~~Sucrose **(permitted ingredients) (Additive / Authenticity)**~~	~~**EN 12630** IFU**MA** 67 **NMKL 148**~~	~~HPLC **RI**~~	~~II~~	~~1 (II?)~~	~~110~~	~~Unless declared as an additive~~
~~**Fruit juices and nectars**~~	~~**Sucrose (Additive / Authenticity)**~~	~~**NMKL 148**~~	~~**HPLC RI**~~	~~**III**~~	~~Traces~~	~~110~~	~~Additive~~

Commodity	Provision	Method	Principle	Type	Juice Min (g/l)	Juice Max (g/l)	Comments
~~Fruit juices and nectars~~ **grape juice**	Tartaric acid ~~**in grape juice (additives)**~~ **(Quality/Additive/Authenticity)**	~~**EN 12137**~~ IFU~~**MA**~~ 65	HPLC**-UV**	II	nd except grape = 1	7 in grape	unless declared as an additive **Chile: The grape juice is commodity , not is provision.**
Fruit juices and nectars	~~**Sections 3.2 Quality criteria and 3.3 Authenticity of CXS 247-2005XX**~~ **Fermentability (Quality/Authenticity)**	~~**Determination of fermentability**~~ IFU~~**MA**~~ 18	Microbiological method	I		positive or negative	Grandfather the method
Fruit juices and nectars	~~**Sections 3.2 Quality criteria and 3.3 Authenticity of CXS 247-2005XX**~~ **Anthocyanins (Quality/Authenticity)**	~~**Detectionof anthocyanins**~~ IFU~~**MA**~~ 71	HPLC**-UV**	I	No minimum	Nor maximum	pattern is critical **Chile: OK**
Fruit juices and nectars	~~**Sections 3.2 Quality criteria and 3.3 Authenticity of CXS 247-2005XX**~~ **Beet sugar in fruit juices (Authenticity)**	~~**Detection of beet sugar in fruit juices**~~ AOAC 995.17	**Nuclear Magnetic Resonance spectrometry (DNMR)** ~~**Deuterium NMR**~~	II	Depends on juice	Depends on juice type	provided no sugars added **Chile: is Nuclear Magnetic Resonance Spectrometry**
Fruit juices and nectars	~~**Sections 3.2 Quality criteria and 3.3 Authenticity of CXS 247-2005XX**~~ ~~**C13/C12 ratio of**~~ **ethanol** ~~**derived from fruit juices**~~ **(Authenticity)**	~~**Determination of C13/C12 ratio of ethanol derived from fruit juices**~~ JAOAC 79, No. 1, 1996, 62-72	~~**Stable isotope mass spectrometry**~~ **Stable isotope ratio analysis/mass spectrometry SIRA/MS** ~~**IRMS**~~	II	-11 pemil	-28 permil	Juice dependant & provided no added C4 sugars **Chile: The principle is SIRA/MS**

Commodity	Provision	Method	Principle	Type	Juice Min (g/l)	Juice Max (g/l)	Comments
~~Fruit juices and~~ nectars Apple juice	~~Sections 3.2 Quality criteria and 3.3 Authenticity of CXS 247-2005~~[XX] High Fructose Corn Syrup ~~Carbon stable isotope ratio of apple juice~~ (Authenticity)	~~Determination of carbon stable isotope ratio of apple juice~~ AOAC 981.09 - JAOAC 64, 85 -90 (1981)	~~Stable isotope mass spectrometry IRMS~~ Stable isotope ratio analysis/mass spectrometry SIRA/MS	II	-23 permil	-26 permil	Juice dependant & provided no C4 sugars added **Chile: The commodity is Apple juice. The provision is High Fructose Corn Syrup. And Pronciple is SIRA/MS**
~~Fruit juices and nectars~~ Orange juice	~~Sections 3.2 Quality criteria and 3.3 Authenticity of CXS 247-2005~~[XX] Carbon stable isotope ratio ~~of orange juice~~ (Authenticity)	~~Determination of carbon stable isotope ratio of orange juice~~ AOAC 982.21	~~Stable isotope~~ mass spectrometry IRMS	II	-23 permil	-26 permil	Juice dependant & provided no C4 sugars added **Chile: OK**
Fruit juices and nectars	~~Sections 3.2 Quality criteria and 3.3 Authenticity of CXS 247-2005~~[XX] Carotenoid, total/individual groups (Authenticity)	~~Determination of carotenoid, total/individual groups~~ ~~EN 12136;~~ IFU~~MA~~59	Spectrophotometry- **¿?**	I	0.05	0.3	**Chile ¿The principle is UV or Visible Spectrophotometry?**
~~Fruit juices and nectars~~	~~Cellobiose (Quality/Authenticity)~~	~~IFUMA 4~~	Capillary gas chromatography ~~Cap-GC-FID~~	~~IV~~	~~nd < 0.01~~	~~20<~~	Of xs use cellulases **Chile: The Method is not available of IFU**

Commodity	Provisión	method	principle	Type	Juice Min (g/L)	Juice Max (g/L)	Comments
Fruit juices and nectars	~~Sections 3.2 Quality criteria and 3.3 Authenticity of CXS 247-2005~~**XX** **Formol number (Quality/Authenticity)**	~~Determination of formol number EN 1133~~ IFU~~MA~~ 30	~~Potentiometric titration~~ **Titrimetry (Potenciometry)**	I	0.7	60	**Chile : principle is Titrimetry (Potenciometry)**
Fruit juices and nectars	~~Sections 3.2 Quality criteria and 3.3 Authenticity of CXS 247-2005~~**XX** **Free amino acids (Quality/Authenticity)**	~~Determination of free amino acids EN 12742~~ IFU~~MA~~ 57	Liquid Chromatography - **¿?**	II	variable	variable	**Chile ¿The principle is HPLC for UV, FLD, IR?**
Fruit juices and nectars	~~Sections 3.2 Quality criteria and 3.3 Authenticity of CXS 247-2005~~**XX** **Hesperidin and naringin (Quality/Authenticity)**	~~Determination of hesperidin and naringin EN 12148~~ IFU~~MA~~ 58	HPLC - **¿?**	II	250	750	Pulpwash detection **Chile ¿The principle is HPLC for UV, FLD, IR?**
~~Fruit juices and nectars~~ **Apple juice**	High Fructose Corn Syrup and Hydrolysed Inulin Syrup ~~in apple juice (permitted ingredients)~~ **(Additive/Authenticity)**	~~Determination of HFCS and HIS by Capillary GC method~~ JAOAC 84, 486-**492** (2001) / IFU ~~recommendation No.~~ 4	**CAP-**GC-**FID**	~~IV~~ **II or III**		< 0.025	provided added syrups no sugar **Chile: Apple juice is a provision. The Method is validated of Apple juice therefore it should be classified as II or III**

Commodity	Provision	Method	Principle	Type	Min	Juice Max (g/l)	Comments
~~Fruit juices and nectars~~ **Orange juice**	~~Sections 3.2 Quality criteria and 3.3 Authenticity of CXS 247- 2005~~[XX] **Naringin and neohesperidin** ~~in orange juice~~ **(Quality/Authenticity)**	~~Determination of naringin and neohesperidin in orange juice~~ AOAC 999.05	HPLC**-UV**	III		Nar < 1.2, neohes	**Chile: the orange juice is commodity.**
Fruit juices and nectars	Phosphorus/phosphate **(Quality/Additive/Authenticity)**	~~EN 1136 /~~ IFU 50	~~Photometric determination~~ **Photometry**	II	0.04	0.36	Provided no declared phosphate added
Fruit juices and nectars	~~Sections 3.2 Quality criteria and 3.3 Authenticity of CXS 247- 2005~~[XX] **Proline** ~~by photometry – nonspecific determination~~ **(Quality/Authenticity)**	~~Determination of proline by photometry – non-specific determination~~ ~~EN 1141~~ IFU~~MA~~ 49	Photometry	I	traces	2.1	Chile: Corrected the provision
Fruit juices and nectars	~~Sections 3.2 Quality criteria and 3.3 Authenticity of CXS 247- 2005~~[XX] **Sodium**~~, potassium, calcium, magnesium in fruit juices (Quality/Authenticity)~~	~~Determination of sodium, potassium, calcium, magnesium in fruit juices~~ ~~EN 1134~~ IFU~~MA~~ 33	~~Atomic absorption spectroscopy~~ **AAS** **-¿?**	II	Na = nd, K = 0.8, Mg = 0.02, Ca = 0.005	Na = 1.0, K = 4.60, Mg = 0.35, Ca = 0.55	**Chile: The Method is validated only for Sodium and Potasium**
Fruit juices and nectars	**potassium**	**IFU 33**	**AAS -¿?**	**II**	**K = 0.8**	**K = 4.60,**	**Chile: recommends a separate provision**

Commodity	Provision	Method	Principle	Type	Juice Min (g/l)	Juice Max (g/l)	Comments
~~Fruit juices and nectars~~ Pulp of Fruit juices	~~Sections 3.2 Quality criteria and 3.3 Authenticity of CXS 247-2005~~[XX] Stable carbon isotope ratio ~~in the pulp of fruit juices~~ (Authenticity)	~~Determination of stable carbon isotope ratio in the pulp of fruit juices~~ ~~ENV 13070~~ - Analytica Chimica Acta 340 (1997)21-29 / IFU 88	~~Stable isotope mass spectrometry~~ IRMS	II	-23.5 permil	-28.5 permil	
Fruit juices and nectars	~~Sections 3.2 Quality criteria and 3.3 Authenticity of CXS 247- 2005~~[xx] Stable carbon isotope ratio of sugars from fruit juices (Authenticity)	~~Determination of stable carbon isotope ratio of sugars from fruit juices~~ ~~ENV 12140~~ Analytica Chimica Acta 271 (1993) / IFU 88	~~Stable isotope mass spectrometry~~ ~~IRMS~~ Stable isotope ratio analysis/mass spectrometry SIRA/MS	II	-11.0 permil	-27.0 permil	Provided no declared cane/corn sugars added
~~Fruit juices and nectars~~	~~Sections 3.2 Quality criteria and 3.3 Authenticity of CXS 247-2005~~[XX]	~~Determination of stable oxygen isotope ratio in fruit juice water~~ ~~ENV 12141~~	~~Stable isotope mass spectrometry~~	~~II~~	-8.0 permil	+ 11.0 permil	Only applicable to NFC juices & concentrates

Commodity	Provision	Method	Principle	Type	Juice Min (g/l)	Juice Max (g/l)	Comments
~~Fruit juices and nectars~~ Fruit juice water	Stable oxygen isotope ratio ~~in~~ ~~fruit juice water~~ (Authenticity)	IFU 89	~~IRMS~~ Stable isotope ratio analysis/mass spectrometry SIRA/MS	II	-8.0 permil	+ 11.0 permil	Only applicable to NFC juices & concentrates Chile : corrected commodity and principle
~~Fruit juices and nectars~~ Frozen concentrated orange	~~Sections 3.2 Quality criteria and 3.3 Authenticity of CXS 247-2005XX~~ Sugar beet derived syrups ~~in frozen concentrated orange~~	~~Determination of sugar beet derived syrups in frozen concentrated~~	~~Oxygen isotope ratio analysis~~ ~~IRMS~~ Stable isotope ratio analysis/mass spectrometry SIRA/MS	I	+3 permil	+ 11.0 permil	Only applicable to OJ concentrate Chile : corrected commodity and principle
Frozen concentrated orange	juice $\delta^{18}O$ measurements ~~in water~~ (Authenticity)	~~orange juice δ18O Measurements in water~~ AOAC 992.09	Stable isotope ratio analysis/mass spectrometry SIRA/MS	I			Chile : corrected commodity and principle. Type I.
~~Fruit juices and nectars~~ Orange Juice	~~Sections 3.2 Quality criteria and 3.3 Authenticity of CXS 247-2005XX~~ Benzoic acid ~~as a marker in orange juice for pulpwash~~ (Quality/Authenticity)	~~Determination of benzoic acid as a marker in orange juice~~ AOAC 994.11	HPLC ~~-UV~~	III			Only detected in OJ if used as a marker for pulpwash or additive Chile : corrected commodity and principle.

Commodity	Provision	Method	Principle	Type	Juice Min (g/l)	Juice Max (g/l)	Comments
Fruit juices and nectars	~~**Sections 3.2 Quality criteria and 3.3 Authenticity of CXS 247-2005**~~**XX** **Chloride (expressed as sodium chloride) (Authenticity)**	~~**Determination of chloride (expressed as sodium chloride)**~~ ~~**EN 12133**~~ IFU~~**MA** 37~~	Electrochemical titrimetry **Titrimetry (Electrochemical)**	III	traces	4.28	**Chile: corrected the principle**
Fruit juices and nectars	~~**Sections 3.2 Quality criteria and 3.3 Authenticity of CXS 247-2005**~~**XX** **Fumaric acid** **(Quality/Authenticity)**	~~**Determination of fumaric acid**~~ IFU~~**MA** 72~~	HPLC	II	0.001	<0.02	Levels above 20 ppm should be examined closely
Fruit juices and nectars	~~**Sections 3.2 Quality criteria and 3.3 Authenticity of CXS 247-2005**~~**XX** **Essential oils ~~(Scott titration)~~ (Quality/Authenticity)**	~~**Determination of essential oils (Scott titration)**~~ AOAC 968.20 / IFU~~**MA**~~45[2]	~~**(Scott) Distillation, / titration**~~ - **Titrimetry (Scott)**	I	0.003	< 0.03	**Chile: corrected the principle**
~~**Fruit juices and nectars**~~	~~**Sections 3.2 Quality criteria and 3.3 Authenticity of CXS 247-2005**~~**XX**	~~**Determination of pH value**~~ ~~**NMKL 179**~~	~~**Potentiometry**~~	~~**II**~~	pH min 2.4	pH = 6.0	

[2] Because there is no numerical value in the standard, duplicate Type I methods have been included which may lead to different results.

Commodity	Provision	Method	Type		Juice (g/l) Min	Juice Max (g/l)	Comments
Fruit juices and nectars	~~Sections 3.2 Quality criteria and 3.3 Authenticity of CXS 247-2005~~ **XX pH- value (Quality)**	~~Determination of pH value EN 1132~~ IFU~~MA~~ 11 **/ NMKL 174 /** ISO 1842	Potentiometry **(pH electrode)**	~~IV~~ **II**	pH min 2.4	pH = 6.0	**Chile : Corrected the provision and principle**
Fruit juices and nectars	Soluble solids **(Quality)**	~~AOAC 983.17 / EN 12143 /~~ IFU 8 / ISO 2173	~~Indirect by~~ refractometry	I	0	72	**Chile: The AOAC 983.17 not is validated for all fruit juice**
Citrus fruit Juice	**Soluble solids**	**AOAC 983.17**	**refractometry**	**I**	**0**	**72**	**Chile: The Method of AOAC is validated only in citrus fruit juice**
Fruit juices and nectars	~~Sections 3.2 Quality criteria and 3.3 Authenticity of CXS 247-2005~~ **XX Starch ~~(Quality)~~**	~~Detection of starch~~ AOAC 925.38 **/** IFU~~MA~~73	~~Colorimetric~~ **Colorimetry**	I		Presences / absence test	grandfather the method **Chile: Eliminated the Quality in provision**
Fruit juices and nectars	~~Sections 3.2 Quality criteria and 3.3 Authenticity of CXS 247-2005~~ **XX Acidity Titratable acids total ~~(Quality/Authenticity)~~**	~~Determination of titrable acids, total EN 12147~~ IFU~~MA~~ 03 ISO 750	Titrimetry **(Acidity-potemciometry)**	I	0.3 (as ACA)*	90.0 (as ACA)*	**Chile: Corrected the principle and provision**
Fruit juices and nectars	Benzoic acid and its salts; ~~sorbic acid and its salts (Additive)~~	IFU~~MA~~ 63 **/** NMKL 124	HPLC**-UV**	II	nd	0.2 CJ	unless declared as an additive **Chile: recommends separeted provison**
Fruit juices and nectars	**Sorbic acid and its salts**	**IFU 63 / NMKL 124**	**HPLC-UV**	**II**	**nd**	**0.2 CJ**	

Commodity	Provision	Method	Type		Juice (g/l) Min	Juice Max (g/l)	Comments
Fruit juices and nectars	~~**Sections 3.2 Quality criteria and 3.3 Authenticity of CXS 247-2005**~~**XX** **Ash ~~in fruit products (Quality/Authenticity)~~**	~~**Determination of ash in fruit products**~~ AOAC 940.26**; A or B?/** ~~**EN 1135;**~~ IFU~~**MA**~~ 9	Gravimetry **(incineration at 525 °C)**	I	1	10	Provided no minerals added **Chile: is AOAC part A for Ash or B Alcalinity of Ash?**
Fruit juices and nectars	Sulphur dioxide ~~**(additives)**~~	~~Optimized Monier-Williams~~ AOAC 990.28 **/** IFU~~**MA**~~ 7A ~~**NMKL 132**~~	Titrimetry ~~(after distillation)~~ **(Monier-Williams)**	II		< 0.01	Use as an Additive **Chile: Corrected the principle**
Fruit juices and nectars	**Sulphur dioxide ~~(additives)~~**	**NMKL 132**	Spectrometry - **¿?**	**III**		< 0.01	Additive **Chile: ¿What Type of Detector?**

*ACA = anhydrous citric acid

Agenda item 5.3: Sugars and honey workable package

Comments Chile in Blue

Commodity	Provisions	Method	Principle	Type	Codex Standard	Committee	Participant Comments
Honey	Free Acidity	MAFF Validated Method V19 I J. Assoc. Public Analysts (1992) 28 (4) 171-175 I AOAC 962.19	Titrimetry	I	CXS 12-1981	CCS	COMMENT: In our laboratory, "TS 13360 standard" method is validated and employed for this analysis. This method has the same principle with ours. COMMENT: Suggestion to include the Method AOAC 962.19. Validation data available. NEW METHOD PROPOSED AOAC 962.19 **Chile: the provision corresponds to Free Acidity**
Honey	Free Acidity	TS 13360	Titrimetry	I or IV	CXS 12-1981	CCS	NEW METHOD PROPOSED **Chile: the provision corresponds to Free Acidity**
Honey	Free Acidity	IHC 4	Titrimetry (Potenciometry)	II	CXS 12-1981	CCS	**Chile: NEW METHOD PROPOSED**
Honey	Hydroxymethylfurfural	AOAC 980.23	Spectrophotometry-UV	~~II~~ II	CXS 12-1981	CCS	Provision included in CXS 12 **Chile: Clarify the principle of the method since the detection system is UV. Type III.**
Honey	Hydroxymethylfurfural	IHC 5	HPLC-UV	~~III~~ II	CXS 12-1981	CCS	NEW METHOD PROPOSED **Chile: Type II because is more specific and accuracy method.**

Honey	Diastase activity	IHC **6.2.** ~~Method for determination of diastase activity with Phadebas, 2009 except that the incubation time should be increased from 15 to 30 minutes~~	**Enzymatic (Spectrophotometry-VISIBLE)**	~~**IV**~~ **II**	CXS 12-1981	CCS	COMMENT: Is not the method include in CXS 12-1981 Annex 2.2.2, where indicate the Method AOAC 958.09, which we agree with. Suggest to include also the Method IHC 6.1 Determination of diastase activity after Schad. COMMENT: Members should also read Honey Diastase Activity discussed at CCMAS32 REP 11/MAS (2011) paragraph 43 (well after Standard CXS 12-1981 development and the last CCS7 meeting in Feb. 2000), plus the detailed discussion at CCMAS34 under 'Agenda Item 5: Discussion Paper - Update Reference of Methods of Analysis and Related Texts' along with the CCMAS34 CRD 7 submission, with decision reported in CCMAS34 REP13/MAS(2013) paragraph 45 and culminated in the current CXS 234 entry **Chile: OK. The method corresponds to 6.2 and the principle of visible detection (620 nm) must be detailed. IHC 6.2. is method validated type II**
Honey	**Diastase activity**	**AOAC 958.09 I IHC 6.1**	**Enzymatic (Spectrophotometry- VISIBLE)**	**I**	CXS 12-1981	CCS	AOAC 958.09 included in CXS 12-1981 NEW METHOD PROPOSED IHC 6.1 validation data available **Chile: OK**
Honey	Moisture	AOAC 969.38B **I** ~~**or**~~ MAFF Validated Method V21 **I** ~~**J. Assoc. Public Analysts (1992) 28 (4) 183-187**~~ **I IHC 1**	Refractometry	I	CXS 12-1981	CCS	COMMENT: This methods are suitable for the specified matrix. Includes validation studies **Chile: The method The AOAC and MAFF N° V21 methods are already standardized and identical; it is not necessary to include a reference to Journal JAPA for MAFF. IHC 1 is**

							identic method. Including IHC 1 is an identical method.
~~Honey~~	~~Sample preparation~~	~~AOAC 920.180~~	~~-~~	~~-~~	CXS 12-1981	CCS	COMMENT: AOAC 969.38B Method is appropriate and identified in CXS12-1981 but lacks an associated provision. It should be listed as a complementary method as needed.
Honey	Solids, water-insoluble	MAFF Validated Method V22 ~~J. Assoc. Public Analysts (1992) 28(4) 189-193~~ **I IHC 8**	Gravimetry **(Drying at 131 ± 1 °C)**	I	CXS 12-1981	CCS	COMMENT: MAFF Includes validation studies. NEW METHOD PROPOSED IHC 8 includes validation data **Chile: OK. it is not necessary to include a reference to Journal JAPA for MAFF. Incuiding the temperature in principle of method.**
~~Honey~~	~~Sugars added (for sugar profile)~~	~~AOAC 998.18~~	~~Carbon isotope ratio mass spectrometry~~	~~I~~	CXS 12-1981	CCS	COMMENT: AOAC 998.18 is not identified in 22nd Ed. AOAC Official Methods. To retain this commodity/provision listing, AOAC 977.20 should be considered for endorsement as a Type IV method as it is listed in CXS 12 and provides a "profile" of sugars, but no validation data is available, nor has any performance criteria been established. COMMENT: It explains sample preparation procedure, however it is not a quantification method. Primary method should be AOAC 998.12. COMMENT: Recommendation: Include new LC-IRMS-based method: CEN EN 17958:2024 (European Committee for Standardisation): Detection of sugar syrup addition in honey (C3 and c4 plants).
Honey	**Sugars added (for sugar profile)**	**AOAC 998.12**	**HPLC-DAD**	**II**	CXS 12-1981	CCS	COMMENT: Recommended reference method. NEW METHOD PROPOSED **Chile: OK.**

Honey	**Sugars added (for sugar profile)**	**CEN EN 17958**	**HPLC-IRMS**	**III**	CXS 12-198 1	CCS	COMMENT: Alternative or supportive method to 998.12 NEW METHOD PROPOSED **Chile: Principle is HPLC-IRMS**
Honey	**Sugars added (for sugar profile)**	**AOAC 977.20**	**HPLC-RI**	**IV**	CXS 12-198 1	CCS	NEW METHOD PROPOSED **Chile: OK. Principle is HPLC-RI**
~~**Honey**~~	~~**Sugars added: detection of corn and cane sugar products**~~	~~**AOAC 978.17**~~	~~**Carbon isotope ratio mass spectrometry**~~	~~**I**~~	CXS 12-198 1	CCS	COMMENT : AOAC 978.17 has been replaced by AOAC 998.12. Update method to AOAC 998.12 and retype Type I typing. Change principle to "Stable isotope mass spectrometry" to be consistent with the listings for fruit juices and nectars. COMMENT: It is updated with AOAC 998.12. COMMENT 3: Outdated and replaced by AOAC 998.12. Suitable for detecting syrup of C4-plants (corn, cane) in honey. **Chile: Isotopic dilution methods are primary methods and therefore should be categorized as type I**
Honey	**Sugars added: detection of corn and cane sugar products**	**AOAC 998.12**	**Stable isotope mass spectrometry**	~~**II**~~ **I**	CXS 12-198 1	CCS	
Honey	**Electrical Conductivity**	**IHC 2**	**Conductimetry**	**II**	**CXS 212-198 1**	**CCS**	**Chile: NEW METHOD PROPOSED**
Sugars (dextrose anhydrous and dextrose monohydrate)	D-Glucose	ISO 5377	Titrimetry **(Lane & Eynon)**	I	CXS 212-199 9	CCS	**Chile: Clarify the principle of the method (Lane & Eynon)**
Sugars (dextrose anhydrous and dextrose monohydrate)	Solids, total	ISO 1741	Gravimetry (vacuum oven **at 100 ± 1 °C**)	I	CXS 212-199 9	CCS	**Chile: Clarify the principle of the method (temperature)**

Sugars (glucose syrup and dried glucose syrup)	Solids, total	ISO 1742	Gravimetry (vacuum oven) **at 70°C**)	I	CXS 212-1999	CCS	**Chile: Clarify the principle of the method (temperature)**
Sugars (dextrose anhydrous and dextrose monohydrate, dried glucose syrup, glucose syrup, powdered dextrose, lactose)	Sulphated ash	ISO 5809	~~Single sulphonation~~ **Gravimetry & Ashing (at 525 ± 25 °C)**	I	CXS 212-1999	CCS	**Chile: Clarify the principle of the method**
Sugars (soft brown sugar)	Sulphated ash	ICUMSA GS ~~1/3/4/7/8-11~~ **3-11**	Gravimetry **&** **Ashing (at 650 °C)**	I	CXS 212-1999	CCS	**Chile: OK**
Sugars (fructose**, lactose**)	pH	ICUMSA GS ~~1/2/3/4/7/8-23~~**1-23**	Potentiometry	I	CXS 212-1999	CCS	**Chile: OK**
~~Sugars (lactose)~~	~~pH~~	~~ICUMSA GS 1/2/3/4/7/8-23~~	~~Potentiometry~~	~~I~~	CXS 212-1999	CCS	
Sugars (fructose, **powdered sugar, white sugar**)	Conductivity ash	ICUMSA GS ~~2/3-17~~ **2-17**	Conductimetry	I	CXS 212-1999	CCS	Sugars (plantation or mill white sugar) COMMENT: ICUMSA Official Method Includes validation studies **Chile: OK**
~~Sugars (powdered sugar)~~	~~Conductivity ash~~	~~ICUMSA GS 2/3-17~~	~~Conductimetry~~	~~I~~	CXS 212-1999	CCS	
~~Sugars (white sugar)~~	~~Conductivity ash~~	~~ICUMSA GS 2/3-17~~	~~Conductimetry~~	~~I~~	CXS 212-1999	CCS	

Sugars (plantation or mill white sugar**, soft white sugar and soft brown sugar**)	Conductivity ash	ICUMSA GS ~~1/3/4/7/8-13~~ **1-13**	Conductimetry	I	CXS 212-1999	CCS	COMMENT: ICUMSA Official Method Includes validation studies **Chile: OK**
~~**Sugars (soft white sugar and soft brown sugar)**~~	~~**Conductivity ash**~~	~~**ICUMSA GS 1/3/4/7/8-13**~~	~~**Conductimetry**~~	~~**I**~~	CXS 212-1999	CCS	
Sugars (fructose)	D-Fructose	ISO 10504	~~**Liquid chromatography (refractive index detection)**~~ **HPLC-RI**	II	CXS 212-1999	CCS	**Chile: OK. Principle is HPLC- IR**
Sugars (fructose)	D-Glucose	ISO 10504	~~**Liquid chromatography (refractive index detection)**~~ **HPLC-RI**	II	CXS 212-1999	CCS	**Chile: OK. Principle is HPLC- IR**
Sugars (fructose)	Loss on drying	ISO 1742	Gravimetry **(Vacuum Drying at 70 °C)**	I	CXS 212-1999	CCS	COMMENT: The method is suitable for the specified matrix. **Chile: The principle is Gravimetry (Vacuum Drying at 70 °C).**
Sugars (lactose)	Loss on drying	USP General Chapter 731	Gravimetry (drying at 120 °C ~~**for 16 h**~~)	I	CXS 212-1999	CCS	COMMENT: The method is suitable for the specified matrix COMMENT: The test conditions are not specified (time-temperature). **Chile: OK**
Sugars (plantation or mill white sugar **powdered sugar, soft white sugar and soft brown sugar, white sugar**)	Loss on drying	ICUMSA GS ~~**2/1/3-15**~~ **2-15**	Gravimetry **(Drying at 105 °C)**	I	CXS 212-1999	CCS	COMMENT: The method is suitable for the specified matrix plantation or mill white sugar, powdered sugar, soft white sugar and soft brown sugar

~~Sugars (powdered sugar)~~	~~Loss on drying~~	~~ICUMSA GS 2/1/3-15~~	~~Gravimetry~~	~~I~~ -	CXS 212-1999	CCS	COMMENT: ICUMSA Official Method Includes validation studies
~~Sugars (soft white sugar and soft brown sugar)~~	~~Loss on drying~~	~~ICUMSA GS 2/1/3-15~~	~~Gravimetry~~	~~I~~	CXS 212-1999	CCS	**Chile: The principle is Gravimetry (Drying at 105 °C)**
~~Sugars (white sugar)~~	~~Loss on drying~~	~~ICUMSA GS 2/1/3-15~~	~~Gravimetry~~	~~I~~	CXS 212-1999	CCS	
Sugars (glucose syrup and dried glucose syrup)	Reducing sugar	ISO 5377	Titrimetry **(Lane & Eyon)**	I	CXS 212-1999	CCS	**Chile: The principle I Titrimetry (Lane & Eyon)**
Sugars (lactose)	Lactose, anhydrous **(as reducing sugars)**	**USP General Chapter 731 and** ICUMSA GS ~~4/3-3~~ **4-3**	~~Titrimetry~~ **Calculation from Loss on drying (80 °C) and Titrimetry - Lane & Enyon**	~~II~~ **IV**	CXS 212-1999	CCS	COMMENT: "GS4-3 determines total 'reducing sugar' and not validated specifically for lactose. Options include: - to change the 'provision' to Lactose, anhydrous (as reducing sugars) and assign as a 'traditional' type IV. - If a 'lactose, anhydrous' Type II method is to be retained, we suggest greater specificity is required e.g. FCC 14 Ed. Lactose Assay by HPLC-RI detector, however the method acceptance criteria NLT 98.0% and NMT 100.5% Lactose calculated on a dry basis and require CXS 212 limit to be changed." **Chile: No comments**

Sugars (plantation or mill white sugar)	Invert sugar **(as reducing sugars)**	ICUMSA GS ~~**1/3/7-3**~~ **1-3**	Titrimetry (Lane & Eynon)	**I** ~~**IV**~~ **III**	CXS 212-1999	CCS	COMMENT: Either retain as Type IV (if still in wide use which was case in 2005) with ICUMSA 'Official' method GS1-5 (2009), principle 'Titrimetry - Luff & Schoorl' (would need to be included in list of 'principles') as Type I. But our preference is to delete the GS1-3 'accepted' method and replace with the GS1-5 'official' method. Another option is a Type II method by FCC 14th Ed. for Sucrose - invert sugar NMT 0.1% by HPLC-PAD with lactose internal standard). **Chile:Type III**
Sugars (plantation or mill white sugar)	**Invert sugar (as reducing sugars)**	**ICUMSA GS 1-5**	**Titrimetry (Luff Schoorl)**	**I**	CXS 212-1999	CCS	COMMENT: Type I as replacement or in addition to ICUMSA GS1-3 as Type IV, (but only if the latter is still in wide use, which ICUMSA reported as the case in 2005 but hopefully no longer the case in 2025). Another option is a Type II method by FCC 14th Ed. for Sucrose - invert sugar NMT 0.1% by HPLC-PAD) NEW METHOD PROPOSED **Chile: OK**
Sugars (plantation or mill white sugar)	**Invert sugar**	~~**Food Chemical Codex 14th Ed.,(2024),**~~ **FCC Sucrose monograph, for Organic Impurities - Invert Sugar**	**HPLC - PAD**	**II**	CXS 212-1999	CCS	COMMENT: As a rational method alternative to the previous 'empirical Type I' method NEW METHOD PROPOSED **Chile: FCC is the acronym for Food Chemical Codex. It is not necessary to mention the year.**
Sugars (**white sugar**, powdered sugar)	Invert sugar **(as reducing sugars)**	ICUMSA GS 2-5 after filtration if necessary to remove any anticaking agents	Titrimetry **(Knight & Allen)**	I	CXS 212-1999	CCS	COMMENT: Type I, method assumes reducing sugars present are all glucose and fructose. Suggest the inclusion of GS 2-4 as an alternative Type

~~Sugars (white sugar)~~	~~Invert sugar~~	~~ICUMSA GS 2/3-5~~	~~Titrimetry~~	~~I~~ -	CXS 212-1999	CCS	IV.
Sugars (powdered sugar)	**Invert sugar**	**ICUMSA GS 2-4 after filtration if necessary to remove any anticaking agents**	**Enzymatic-Spectrophotometry UV**	**IV**	CXS 212-1999	CCS	COMMENT: Type IV as an 'Invert sugar' method being newly introduced. NEW METHOD PROPOSED **Chile: OK but Principle is Enzimatuc-Spectrophotometry UV**
Sugars (soft white sugar and soft brown sugar)	Invert sugar **(as reducing sugars)**	ICUMSA GS **4/3-3** **4-3** (applicable at levels >10% m/m)	Titrimetry (Lane & Eynon)	I	CXS 212-1999	CCS	COMMENT: Method not validated for Soft brown or soft white sugars; assumes reducing sugars present are all glucose and fructose, also has a correction for Sucrose present in final titration. **Chile: OK**
Sugars (soft white sugar and soft brown sugar)	Invert sugar **(as reducing sugars)**	ICUMSA GS **1/3/7-3** **1-3** (applicable at levels <10% m/m)	Titrimetry (Lane & Eynon)	**I** **IV**	CXS 212-1999	CCS	COMMENT: Method not validated for Soft brown or soft white sugars; assumes reducing sugars present are all glucose and fructose, also has a correction for Sucrose present in final titration. Either retain as Type IV (is still in wide use wich was case in 2005) but in the absence of an alternative collaborative method it may need to be retained as a Type I
Sugars (plantation or mill white sugars) CCMAS should consider whether these commodities should be included: Sugars (dextrose anhydrous and	**Sulphur dioxide**	**AOAC 962.16**	**Titrimetry Modified Monier – Williams**	**III**	CXS 212-1999	CCS	COMMENT: Note, AOAC 962.16 refers to the Modified Monier Williams Method. While the AOAC Official Method 990.28, Sulfites in Foods, Optimized Monier-Williams Method is already endorsed in CXS 234(2025) for Hominy, fruit juice, seafood and Dried or dehydrated ginger. The AOAC 962.16 is a predecessor of AOAC 990.28 not optimized for enforcement at the 10 mg/kg sulfite level. Thus, we suggest the AOAC 962.16 could only be used for the Sugar commodities

dextrose monohydrate) Sugars (fructose) Sugars (glucose syrup and dried glucose syrup) Sugars (powered sugars and powered dextrose) Sugars (raw cane sugar) Sugars (soft white sugar and soft brown sugar) Sugars (white sugars)							with a >50 mg/kg maximum limit i.e. 11.1.5 Plantation or mill white sugar 11.3 Sugar solutions and syrups, also (partially) inverted, including treacle and molasses, excluding products of food category 11.1.3. While the LC-MSMS sulfite method should be separately listed NEW METHOD PROPOSED
Sugars (plantation or mill white sugar)	**Sulphur dioxide**	**ICUMSA GS 2-33**	**Colorimetry**	**IV**	CXS 212-1999	CCS	COMMENT: NEW METHOD PROPOSED **Chile: OK**
Sugars (all)	**Sulphur dioxide**	**US FDA Method C-004.04**	**LC-MS/MS**	**IV**	CXS 212-1999	CCS	As a 'recently introduced' method NEW METHOD PROPOSED **Chile: OK**
~~**Sugars (plantation or mill white sugar)**~~	~~**Sulphur dioxide**~~	~~**ICUMSA GS 2/3-35**~~ ~~**NMKL 135**~~ ~~**EN 1988-2**~~	~~**Enzymatic method**~~	~~**II**~~	CXS 212-1999	CCS	plantation or mill white sugar COMMENT : "AOAC, No: 962.16" method is employed and validated in our laboratory.
~~**Sugars (powdered sugar and powdered**~~	~~**Sulphur dioxide**~~	~~**ICUMSA GS 2/3-35**~~ ~~**NMKL 135**~~	~~**Enzymatic method**~~	~~**II**~~	CXS 212-199	CCS	COMMENT: Type II (but only in the absence of method with appropriate sensitivity LOQ ≤ 14 mg/kg and

~~dextrose)~~		~~EN 1988-2~~			9	precision conforming to the Codex method performance criteria RSDR% = 16.9%)
~~Sugars (raw cane sugar)~~	~~Sulphur dioxide~~	~~ICUMSA GS 2/3-35~~ ~~NMKL 135~~ ~~EN 1988-2~~	~~Enzymatic method~~	~~II~~	CXS 212-1999 CCS	powdered sugar and powdered dextrose COMMENT: "AOAC, No: 962.16" method is employed and validated in our laboratory.
~~Sugars (soft white sugar and soft brown sugar)~~	~~Sulphur dioxide~~	~~ICUMSA GS 2/3-35~~ ~~NMKL 135~~ ~~EN 1988-2~~	~~Enzymatic method~~	~~II~~	CXS 212-1999 CCS	COMMENT: Type II (but only in the absence of method with appropriate sensitivity LOQ ≤ 3 mg/kg and precision conforming to the Codex criteria RSDR% = 21.3%).
~~Sugars (white sugar)~~	~~Sulphur dioxide~~	~~ICUMSA GS 2/3-35~~ ~~NMKL 135~~ ~~EN 1988-2~~	~~Enzymatic method~~	~~II~~	CXS 212-1999 CCS	raw cane sugars COMMENT: "AOAC, No: 962.16" method is employed and validated in our laboratory.
Sugars (plantation or mill white sugar , powdered sugar and powdered dextrose, raw cane sugar, soft white sugar and soft brown sugar, white sugar)	**Sulphur dioxide**	**ICUMSA GS 2-35**	**Enzymatic-Spectrophotometry UV**	**II**	CXS 212-1999 CCS	COMMENT: Type II (but only in the absence of a method with appropriate sensitivity LOQ ≤ 4 mg/kg and precision conforming to the codex criteria RSDR(%) = 20.4%). soft white sugar and soft brown sugar COMMENT: If the analyst has very limited experience with enzymatic methods, a high coefficient of variation can be expected. Therefore, it is a challenging analysis that requires experience. The AOAC Official Method 2006, No. 962.16 has been used by us since 2003 (and has been accredited since 2005), and it consistently passes proficiency tests for non-alcoholic beverages, meat, jam, biscuits, wine, and both dried and fresh fruits. Therefore, the primary method should be AOAC Official Method 2006, No. 962.16 (Monier-Williams). COMMENT:

							II (but only in the absence of a method with appropriate sensitivity LOQ ≤ 4 mg/kg and precision conforming to the codex criteria RSDR% = 20.4%). white sugar COMMENT : "AOAC, No: 962.16" method is employed and validated in our laboratory. COMMENT : Type II (but only in the absence of method with appropriate sensitivity LOQ≤3 mg/kg and precision conforming to codex criteria RSDR%=21.3%)
~~Sugars (plantation or mill white sugar, powdered sugar and powdered dextrose, raw cane sugar, soft white sugar and soft brown sugar, white sugar)~~	~~Sulphur dioxide~~	~~NMKL 135~~	~~Enzymatic~~	~~II or III~~	CXS 212-1999	CCS	COMMENT: If the analyst has very limited experience with enzymatic methods, a high coefficient of variation can be expected. Therefore, it is a challenging analysis that requires experience. The AOAC Official Method 2006, No. 962.16 has been used by us since 2003 (and has been accredited since 2005), and it consistently passes proficiency tests for non-alcoholic beverages, meat, jam, biscuits, wine, and both dried and fresh fruits. Therefore, the primary method should be AOAC Official Method 2006, No. 962.16 (Monier-Williams). COMMENT: The method was collaboratively tested for the following foods: potato flakes, wine, juice, and dried apples. **Chile: Not Ok because not is validated in sugars**
Sugars (plantation or mill white sugar, powdered sugar and powdered dextrose, raw cane sugar, soft	**Sulphur dioxide**	**EN 1988-2**	**Enzymatic (Spectrometry-UV)**	**II**	CXS 212-1999	CCS	To retain in CXS 234-1999 until more information is available on this method **Chile: Principle is Enzymatic- Spectrometry-UV**

white sugar and soft brown sugar, white sugar)							
Sugars (dextrose anhydrous and dextrose monohydrate, **fructose, glucose syrup and dried glucose syrup**)	Sulphur dioxide	ISO 5379	Acidimetry and nephelometry	IV	CXS 212-1999	CCS	COMMENT: The AOAC Official Method 2006, No. 962.16 (Monier-Williams) and the ISO 5379:2013 method overlap by approximately 80%. However, the sulfur collection part in the ISO 5379:2013 apparatus is lengthy and problematic. The AOAC Official Method 2006, No. 962.16 has been used by us since 2003 (and has been accredited since 2005), and it consistently passes proficiency tests involving non-alcoholic beverages, meat, jam, biscuits, wine, and both dried and fresh fruits. Therefore, the primary method should be AOAC Official Method 2006, No. 962.16 (Monier-Williams). PROPOSED METHODS: AOAC 962.16 & US FDA Method C-004.04 **Chile: OK**
~~Sugars (fructose)~~	~~Sulphur dioxide~~	~~ISO 5379~~	~~Acidimetry and nephelometry~~	~~IV~~	CXS 212-1999	CCS	
~~Sugars (glucose syrup and dried glucose syrup)~~	~~Sulphur dioxide~~	~~ISO 5379~~	~~Acidimetry and nephelometry~~	~~IV~~	CXS 212-1999	CCS	
Sugars (soft white sugar and soft brown sugar)	Sucrose plus invert sugar **(as reducing sugars)**	ICUMSA GS ~~4/3-7~~ **4-7**	Titrimetry	~~I~~ **IV**	CXS 212-1999	CCS	COMMENT Preferably a Type IV as an existing Type I methods without a full set of validation data. Ideally an alternative collaborative studied candidate-method can be identified.
Sugars (plantation and mill white sugar)	Colour	ICUMSA GS ~~9/1/2/3-8~~	Photometry	I	CXS 212-1999	CCS	COMMENT: ICUMSA Reference Method COMMENT: ICUMSA Accepted Method Includes validation studies
Sugars (soft white sugar**, powdered sugar**)	Colour	ICUMSA GS ~~2/3-9~~ **2-9**	Photometry	I	CXS 212-1999	CCS	COMMENT: ICUMSA Accepted Method Includes validation studies
~~Sugars (powdered sugar)~~	~~Colour~~	~~ICUMSA GS 2/3-9~~	~~Photometry~~	~~I~~	CXS 212-1999	CCS	

Sugars (white sugar**, powdered sugar**)	Polarization	ICUMSA GS ~~2/3-1~~ 2-1	Polarimetry	~~II~~ III	CXS 212-1999	CCS	COMMENT: Type III (as an alternative to the reference Type II method) Powdered sugar The ICUMSA website Method Search for 'Powdered sugar', 'Polarimetric sucrose content' provides a techniques result of 'ICUMSA Method GS3-1 **Chile: OK**
~~**Sugars (powdered sugar)**~~	~~**Polarization**~~	~~**ICUMSA GS 2/3-1 after filtration if necessary to remove any anticaking agents**~~	~~**Polarimetry**~~	~~**II**~~	CXS 212-1999	CCS	
Sugars (powdered sugar)	**Polarization**	**ICUMSA GS 3-1**	**Polarimetry**	**III**	CXS 212-1999	CCS	COMMENT: As an alternative to the reference Type II method GS1-1. Also details of the filtration removal of anticaking agents is not included, suggest a procedure reference is provided in CXS 234 NEW METHOD PROPOSED
Sugars (white sugar, powdered sugar)	**Polarization**	**ICUMSA GS 1-1 (powdered sugars, if filtration to remove any anticaking agents is unnecessary)**	**Polarimetry**	**II**	CXS 212-1999	CCS	COMMENT: Recommended reference method Updaed method GS1-1 (2022) to include the use of Carrez reagents or other clarification agent alternatives to basic lead acetate, however not fully accepted or implemented at this time NEW METHOD PROPOSED
Sugars (white sugar, powdered sugar, plantation or mill white sugar)	**Polarization**	**ICUMSA GS 1-2**	**Polarimetry**	**III**	CXS 212-1999	CCS	COMMENT: III (as a new alternative to the recommended reference GS1-1 Type II method) NEW METHOD PROPOSED
Sugars (plantation or mill white sugar)	Polarization	ICUMSA GS ~~1/2/3-1~~ 1-1	Polarimetry	II	CXS 212-1999	CCS	COMMENT: Note recommendation from 34th ICUMSA Session 2025 to ' Update Method GS1-1 (2022) to include the use of Carrez reagents or other clarification agent alternatives to basic lead acetate', however this is not fully accepted or implemented at this time.''

Agenda item 6: Methods of analysis for precautionary allergen labelling

Spanish:

Chile valora la labor del grupo de electrónica. Esta labor es especialmente importante para la población cuya salud se ve afe ctada por la presencia de alérgenos alimentarios.

Es fundamental que el Codex evalúe los diversos métodos disponibles para detectar o determinar la presencia de alérgenos (intencionados o no), a fin de verificar los límites de advertencia regulados en los diferentes países y garantizar que estos métodos cumplan con los criterios de rendimiento adecuados para su finalidad. También se debe complementar la información sobre el alcance del método en relación con el producto (tipo de alimento).

Se sugiere incluir el límite de gliadina en la Tabla 1: Métodos de análisis que respaldan el etiquetado precautorio de alérgenos, con estudios de validación publicados en varios laboratorios o métodos de rendimiento comprobado, para el método AOAC 2015.05.

Debido a la diversidad de métodos en su mayoría patentados, se comparte el enfoque por criterios para fines de alérgenos y se esta de acuerdo con la respuesta del CCMAS al CCFL. y se pueda señalar algunos métodos que cumplan esos criterios como ejemplos o referencias para fines de los interesados.

English:

Chile appreciates the work done by the electronics group. This work is especially important for the population whose health is affected by the presence of food allergens.

It is important that the Codex conduct an evaluation of the various methods available for detecting or determining the presence of allergens (intentional or unintentional), in order to verify the warning limits regulated in different countries and ensure that these methods meet performance criteria suitable for their intended purpose. Information on the scope of the Method with respect to the Product (Type of food) should also be supplemented.

It is suggested to include the limit of gliadin in the Table 1: Methods of analysis in support of precautionary allergen labeling with published, multi-laboratory validation studies or performance tested methods, for AOAC 2015.05 Method:

Allergen	**Method**	**Principle**	**Catalog o website**	**Analytical Range Mg/kg**	**Validation Citation**
Gluten	AOAC 2015.05 : RIDASCREEN® Gliadin Competitive	ELISA	R-Biopharm R 7021	LOQ: 10 mg gluten/kg **(5 mg gliadin/kg)**	https://doi.org/10.5740/jaoacint.CS2015.15

Due to the diversity of mostly patented methods, the criteria-based approach for fine allergens is shared, and the CCMAS response to CCFL is agreed upon. and some methods that meet those criteria can be pointed out as examples or references for the purposes of the interested parties.

Agenda item 7.1: Review of sampling plans in CXS 234-1999

Chile

Chile agrees with harmonizing the presentation of performance criteria for methods when they are officially adopted by the Codex. However, it suggests including the product standard that establishes the Maximum Level (ML), and considering how to proceed when dealing with a range of values (Tolerance) instead of a single ML. In this regard, it should be evaluated whether to leave only the ML or Critical Limit (CL) option in the corresponding column.

a) The Commodity

b) The Provision

c) The Maximum Level (ML) **or Critical Level (LC)**

d) Minimum applicable range (mg/kg) unless otherwise stated

e) Limit of detection (LOD) (mg/kg)

f) Limit of quantification (LOQ) (mg/kg) CX/MAS 26/45/10 5

g) Precision (RSDR) (%)

h) Recovery (%)

i) Example of methods that meet the criteria

j) Principle

Agenda item 7.2: Sampling plans for bulk materials/heterogenous lots including mycotoxins

Comments from Chile: We believe it is appropriate to incorporate this into CXG 50–2004 and, subsequently, for CCMAS to continue working on improving the existing plans in CCCF CXS-193. We also believe that, since both documents will be formally reviewed by CCCF at a later date, there would be no problem in moving forward in this direction.

Agenda item 8: Harmonization of names and format for principles identified in CXS 234

We suggest including in ANNEX A: PRINCIPLES OF METHODS OF ANALYSIS, in section 16. Fluorometry

- Microfluorometry

30. Spectrometry

- Nuclear Magnetic Resonance spectrometry (NMR)

38. Titrimetry:

-Argentrometry.

- Luff-Schoorl
- Knight & Allen
- Monier – William
- Indophenol
- Scott

41. Microbiological

In ANNEX C: LIST OF ACRONYMS FOR STANDARD METHOD REFERENCES

Ph. Eur European Pharmacopoeia the correct link is https://www.edqm.eu/en/