

CODEX ALIMENTARIUS COMMISSION



Food and Agriculture
Organization of the
United Nations



World Health
Organization

Viale delle Terme di Caracalla, 00153 Rome, Italy - Tel: (+39) 06 57051 - E-mail: codex@fao.org - www.codexalimentarius.org

Agenda Item 4.3

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JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX COMMITTEE ON METHODS OF ANALYSIS AND SAMPLING

42nd Session

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REVIEW OF METHODS OF ANALYSIS IN CXS 234: PROCESSED FRUITS AND VEGETABLES WORKABLE PACKAGE

(Comments of Chile, Ghana, Nigeria, Peru and Uruguay)

Chile

4.3 Conjunto manejable para frutas y hortalizas elaboradas

CX/MAS 23/42/6

Apéndice I: Métodos de análisis para el producto «Frutas y verduras elaboradas» (información del cuadro solo en inglés)

Frutas y verduras elaboradas – Apéndice I							
Producto	Disposición	Método	Principio	Tipo	Norma	Comentarios	COMENTARIOS Chile
Processed fruits and vegetables (<u>Jams, Jellies, Marmalades, pickled cucumbers, mango chutney, Coconut Milk and Coconut Cream</u>)	Benzoic acid	NMKL 124	Liquid Chromatography (UV detector)	II	CXS192	Benzoic acid falls under CXS 192 – Food Additives	Se debe indicar detector UV
Processed fruits and vegetables (<u>Jams, Jellies, Marmalades, pickled cucumbers, mango chutney, Coconut Milk and Coconut Cream</u>)	Benzoic acid	NMKL 103 , or AOAC 983.16	Gas Chromatography (Flame ionization detector)	III	CXS 192	NMKL 103 withdrawn because of the use of hazardous solvent	Se debe indicar detector FID
Processed fruits and vegetables (<u>canned strawberries, pickled cucumbers, preserved tomatoes, canned citrus fruits, certain canned vegetables</u>)	Calcium	AOAC 968.31	Complexometry/Titrimetry	II	CXS 192 CXS 62 CXS 115 CXS 13 CXS 254 CXS 297	Calcium firming agents listed in CXS 192 – food additives	Sin comentarios
Processed fruits and vegetables	Drained Weight	AOAC 968.30 (Codex General Method)	Sieving Gravimetry (Sieving)	I			Es correcto que es un Método general Codex

Frutas y verduras elaboradas – Apéndice I							
Producto	Disposición	Método	Principio	Tipo	Norma	Comentarios	COMENTARIOS Chile
Processed fruits and vegetables	Fill of <u>glass</u> containers	CAC/RM 46 (reference to “metal containers” deleted and refer to ISO 90-1 for determination of water capacity in metal containers) <u>ISO 8106</u>	Weighing Gravimetry	I		CCMAS36 (2015) agreed to replace CAC/RM 46 with ISO 8106	Se debe modificar por método gravimétrico, ya que es lo que indica el principio del método. ISO 8106:2004 specifies a gravimetric method for determining the capacity of glass containers and their compliance with specification limits.
<u>Processed fruits and vegetables</u>	<u>Fill of metal containers</u>	<u>ISO 90-1</u>	Weighing Gravimetry	I			Se recomienda modificar por gravimétrico, cuando esta asociados a det. de peso.
Processed fruits and vegetables (Canned Fruits, Jams, Jellies and <u>Marmalades, Mango Chutney, Canned Vegetables, Preserved Tomatoes, Table Olives, Pickled Cucumbers</u>)	Lead	AOAC 972.25 (Codex general method)	AAS Absorption Spectrophotometry (Flame absorption)	III <u>IV</u>	CXS 193	Codex general method type II for other commodities	Se debe evitar el uso de siglas para definir los métodos analíticos y debe especificarse el Método de medición para absorción atómica entre paréntesis. De acuerdo con el comentarios general, revisar ya que el método es tipo II para otros productos.
Processed fruits and vegetables	Packing medium Canned berry fruits (raspberry, strawberry)	AOAC 932.12 <u>ISO 2173</u>	Refractometry	I		AOAC 932.12 and ISO 2173 both determine soluble solids which is already listed below. Recommend striking this row.	De acuerdo, eliminar fila. Método ya mencionado.

Frutas y verduras elaboradas – Apéndice I							
Producto	COMENTARIOS	Método	Principio	Tipo	Norma	Comentarios	COMENTARIOS Chile
Processed fruits and Vegetables ((pickled cucumbers, table olives, processed tomato concentrates, preserved tomatoes, mango chutney, and aqueous coconut products except canned bamboo shoots, pH determined by AOAC 981.12	pH	ISO 1842	Potentiometry	IV	CXS 115 CXS 66 CXS 57 CXS 13 CXS 160 CXS 240		Sin comentarios
canned bamboo shoots	pH	AOAC 981.12	Potentiometry	IV III			Es mejor colocar este apartado de manera separada. En base a Codex el método es tipo III
Processed fruits and vegetables (pickled cucumbers, table olives, processed tomato concentrates, preserved tomatoes, mango chutney, and aqueous coconut products)	pH	AOAC 981.12	Potentiometry	III	CXS 115 CXS 66 CXS 57 CXS 13 CXS 160 CXS 240		Sin comentarios
Processed fruits and vegetables (pickled cucumbers, table olives, processed tomato concentrates, preserved tomatoes, mango chutney, and aqueous coconut products)	pH	NMKL 179	Potentiometry	II	CXS 115 CXS 66 CXS 57 CXS 13 CXS 160 CXS 240		Sin comentarios
Processed fruits and vegetables (pickled cucumbers, processed tomato concentrates, preserved tomatoes, canned applesauce, jams, jellies and marmalades, mango chutney, and certain canned fruit)	Soluble solids	ISO 2173 AOAC 932.12	Refractometry	I	CXS 115 CXS 57 CXS 13 CXS 17 CXS 296 CXS 160 CXS 319	These methods are not identical. Suggest retaining ISO method which contains more detailed procedures	De acuerdo, sin comentarios
Processed fruits and vegetables (Jams, Jellies, Marmalades, pickled cucumbers)	Sorbates	NMKL 103 / AOAC 983.16	Gas Chromatography (Detector FID)	III	CXS 192	NMKL 103 withdrawn because of the use of hazardous solvent	Se debe indicar el tipo de detector(FID)
Processed fruits and vegetables (Jams, Jellies, Marmalades, pickled cucumbers)	Sorbates	NMKL 124	Liquid Chromatography (UV detector)	II	CXS 192	Sorbate falls under CXS 192 – Food Additives	Se debe indicar el tipo detector, detector UV

Frutas y verduras elaboradas – Apéndice I							
Producto	COMENTARIOS	Método	Principio	Tipo	Norma	Comentarios	COMENTARIOS Chile
Processed fruits and vegetables	Tin	AOAC 980.19 (Codex general method)	Absorption Spectrophotometry AA S (Flame Atomic)	II	CXS 193	Relevant Codex commodity standards include CXS 62-1981, CXS 254-2007, CXS 296-2009, CXS 242-2003, CXS 297-2009, CXS 78-1981, CXS 159-1987, CXS 42-1981, CXS 60-1981, CXS 99-1981, CXS 160-1987, CXS 66- 1981, CXS 13-1981, CXS 115-1981, CXS 57-1981, CXS 145- 1981, CXS 98-1981, CXS 96- 1981, CXS 97-1981, CXS 88- 1981, CXS 89-1981.	Se debe evitar el uso de siglas para definir los métodos analíticos y debe especificarse el Método de medición para absorción atómica entre paréntesis
Processed fruits and vegetables	Total solids	AOAC 920.151	Gravimetry	I			Sin comentarios
Aqueous Coconut Products	Total Fats	ISO 1211 IDF 1	Gravimetry (Röse-Gottlieb)	I	CXS 240	Validated on cow, sheep, goat milk	Sin comentarios
Aqueous Coconut Products	Total solids	ISO 6731 IDF 21	Gravimetry	I	CXS 240	Validated on milk, cream, and evaporated milk	Sin comentarios
Aqueous Coconut Products	Non-fat solids	ISO 1211 IDF 1 ISO 6731 IDF 21	Calculation: Gravimetry (Röse-Gottlieb) Gravimetry	I	CXS 240	Validated on cow, sheep, goat milk	Se debe borrar el termino calculation, ya que se entiende que la gravimetría es por diferencia de masas
Aqueous Coconut Products	Moisture	ISO 6731 IDF 21	Calculation: Gravimetry	I	CXS 240	Validated on milk, cream, and evaporated milk	Se debe borrar el termino calculation, se entiende que es por diferencia de masas
Canned Apple Sauce	Fill of <u>glass</u> containers	CAC/RM 46* (for glass containers) (Codex general method for processed fruits and vegetables) and ISO 90-1 (for metal containers) (Codex general method for processed fruits and vegetables) ISO 8106	Weighing Gravimetry	I	CXS 17	CAC/RM 46 resides in the Standard for certain canned vegetables (CXS 297). CCMAS 36 (2015) agreed to replace CAC/RM 46 with ISO 8106	Se recomienda modificar a Gravimétrico.
<u>Canned Apple Sauce</u>	<u>Fill of metal containers</u>	<u>ISO 90-1 (for metal containers)</u>	<u>Weighing Gravimetry</u>	I	CXS 17		Se recomienda modificar a Gravimétrico.
Canned Apple Sauce	Soluble solids	AOAC 932.12 ISO 2173 (Codex general method for processed fruits and vegetables)	Refractometry	I	CXS 17	These methods are not identical. Suggest retaining ISO method which contains more detailed procedures	<u>Es correcto, este es un método general utilizado para este tipo de productos</u>
Canned green beans and wax beans	Tough Strings	CAC/RM 39	Stretching	I	CXS 297		<u>Sin comentarios.</u>
<u>Canned green peas</u>	<u>Fill of glass containers</u>	<u>ISO 8106</u>	<u>Weighing Gravimetry</u>	I	CXS 297	CCPFV 24 (2008) agreed to revoke CAC/RM 45	Se recomienda modificar a Gravimétrico.

Frutas y verduras elaboradas – Apéndice I							
Producto	COMENTARIOS	Método	Principio	Tipo	Norma	Comentarios	COMENTARIOS Chile
Canned green peas	Proper fill (in lieu of drained weight) Fill of metal containers	CAC/RM 45 <u>ISO 90-1</u>	Pouring and measuring <u>Gravimetry (Weighing)</u>	I	CXS 297	CCPFV 24 (2008) agreed to revoke CAC/RM 45	Se recomienda modificar a Gravimétrico.
Canned green peas	Types of peas, distinguishing	CAC/RM 48	Visual inspection	I	CXS 297		Sin comentarios
Canned mangoes	<u>Syrup</u> Soluble solids	AOAC 932.14C	<u>Brix spindle method</u> Refractometry	I	CXS 319	Method is “solids in syrups”	El método AOAC C es refractométrico y es aplicable al Syrup
Canned mushrooms	<u>Washed</u> Drained weight	CAC/RM 44 <u>AOAC 968.30</u>	<u>Gravimetry (Sieving)</u>	I	CXS 297	CCPFV25 (2010) revoked CXS 55 (Standard for canned mushrooms) containing CAC/RM 44.	Colocar entre paréntesis el tamiz y señalar el principio de medición.
Canned palmito	Mineral Impurities <u>content</u>	ISO 762	Gravimetry	I	CXS 297		Incluir “ Contenido” de impurezas minerales como lo indica la norma
Canned Stone Fruits	Drained weight	AOAC 968.30 <u>ISO:2173</u>	<u>Gravimetry (Sieving)</u>	I	CXS 242	ISO 2173 is a method for soluble solids, not drained weight. Wrong provision	Incluir y señalar entre paréntesis el tamiz
Canned Stone Fruits	Soluble solids	AOAC 932.14C <u>ISO 2173</u>	Refractometry	I	CXS 242	Methods are not identical. Suggest retaining ISO method which contains more detailed procedures	Sin comentarios
Canned strawberries	Calcium	AOAC 968.31	<u>Titrimetry (Complexometry)</u>	II	CXS 62	Validated for canned tomatoes, lima beans, potatoes	Sin comentarios
Canned strawberries	Mineral Impurities <u>content</u>	AOAC 971.33 <u>ISO 762</u>	Gravimetry	I	CXS 62	AOAC 971.33 is acid-insoluble residue. Recommend replacing with ISO 762	Incluir “ Contenido” de impurezas minerales como lo indica la norma
Certain canned citrus fruits	Calcium	NMKL 153	Flame Atomic Absorption Spectrophotometry (<u>Flame Atomic</u>)	II	CXS 254	Calcium firming agents listed in CXS 192 – food additives	Mejorar el principio del método

Frutas y verduras elaboradas – Apéndice I							
Producto	Disposición	Método	Principio	Tipo	Norma	Comentarios	Comentarios Chile
Certain canned citrus fruits	Calcium	AOAC 968.31	Complexometry/ Titrimetry	III	CXS 254	Calcium firming agents listed in CXS 192 – food additives	Sin comentarios
Certain Canned Vegetables (palmito)	Mineral impurities (sand)	AOAC 971.33 ISO 762	Gravimetry	I		Methods are not identical and AOAC 971.33 is acid-insoluble residue. Mineral impurities in canned palmito already listed above.	De acuerdo, eliminar fila.
Citrus marmalade	Calcium	AOAC 968.31	Complexometric titrimetry	II	CXS 296	Calcium firming agents listed in CXS 192 – food additives	Sin comentarios
Dates	Identification of defects	Described in Standard?	Visual inspection	I	CXS 143		Mencionar el estándar
Dates	Moisture	AOAC 934.06	Gravimetry (vacuum oven)	I	CXS 143		Sin comentarios
Desiccated coconut	Total acidity of the extracted oil	ISO 660 AOCS Cd 3d-63 ISO 660 or AOCS Cd 3d-63	Titrimetry/ Potenciometry Titrimetry	I	CXS 177	Changed method format to maintain consistency with previous decisions, i.e. named vegetable oils	La norma ISO considera ambos principios.
Desiccated coconut	Ash	AOAC 950.49	Gravimetry (Ashing)	I	CXS 177		Mejorar principio
Desiccated coconut	Extraneous vegetable matter	Described in the Standard	Counting extraneous material with the naked eye	IV	CXS 177		Sin comentarios
Desiccated coconut	Moisture	AOAC 925.40	Gravimetry (loss on drying)	I	CXS 177		Sin comentarios
Desiccated coconut	Oil content Fat (crude)	AOAC 948.22	Gravimetry	I	CXS 177	Titled “Fat (Crude)” in method title	De acuerdo, debe indicar de acuerdo a la disposición en la referencia
Dried apricots	Identification of defects	Described in the Standard	Visual inspection (weighing)	I	CXS 130	n.b. CCPFV29 (2020) forwarded proposed draft standard for dried fruits to CAC43 at Step 5/8. CAC43 adopted this Standard, pending certain endorsements. This Standard once published will supersede CXS 130.	Sin comentarios
Dried apricots	Moisture	AOAC 934.06	Gravimetry (vacuum oven)	I	CXS 130	n.b. CCPFV29 (2020) forwarded proposed draft standard for dried fruits to CAC43 at Step 5/8. CAC43 adopted this Standard, pending certain endorsements. This Standard once published will supersede	Sin comentarios

Frutas y verduras elaboradas – Apéndice I							
Producto	Disposición	Método	Principio	Tipo	Norma	Comentarios	Comentarios Chile
Dried apricots	Sulphur dioxide	AOAC 963.20	Colorimetry	II	CXS 130	n.b. CCPFV29 (2020) forwarded proposed draft standard for dried fruits to CAC43 at Step 5/8. CAC43 adopted this Standard, pending certain endorsements. This Standard once published will supersede CXS 130.	Ver que el nombre del método acorde a AOAC Sulfurous Acid(Total)
Jams (fruit preserves) and jellies	Fill of <u>Glass Containers</u>	CAC/RM 46 <u>ISO 8106</u>	Weighing	I	CXS 296	CCMAS 36 (2015) agreed to replace CAC/RM 46 with ISO 8106	Sin comentarios
Jams (fruit preserves) and jellies	Soluble solids	ISO 2173 AOAC 932.12	Refractometry	I	CXS 296	Methods are not identical. Suggest retaining ISO method which contains more detailed procedures	Sin comentarios
Mango chutney	Ash insoluble in <u>HCl</u>	ISO 763	Gravimetry	I	CXS 160		Colocar ácido clorhídrico
Pickled cucumbers	Acidity, total	AOAC 942.15	Titrimetry	I	CXS 115		Sin comentarios
Pickled cucumbers	Drained weight	AOAC 968.30	Gravimetry	I	CXS 115		Sin comentarios
Pickled cucumbers	Mineral impurities	AOAC 971.33 <u>ISO 762</u>	Gravimetry	I	CXS 115	AOAC 971.33 is acid-insoluble residue. Recommend replacing with ISO 762	Sin comentarios
Pickled cucumbers	Salt in brine <u>Sodium chloride</u>	AOAC 971.27 (Codex general method)	Potentiometry	II	CXS 115		Corrección del nombre del método acorde a AOAC
Pickled cucumbers	Volume fill by displacement	Described in the Standard	Displacement	I	CXS 115		Sin comentarios
<u>Preserved tomatoes</u>	<u>Calcium</u>	<u>NMKL 153</u>	<u>Flame Atomic Absorption Spectrophotometry (Flame atomic)</u>	II	CXS 13	Calcium firming agents listed in CXS 192 – food additives	Sin comentarios
Preserved tomatoes	Calcium	AOAC 968.31	Complexometric titrimetry	III	CXS 13	Calcium firming agents listed in CXS 192 – food additives	Sin comentarios
Preserved tomatoes	Calcium	NMKL 153	Atomic Absorption Spectrophotometry	II			Sin comentarios

Frutas y verduras elaboradas – Apéndice I							
Producto	Disposición	Método	Principio	Tipo	Norma	Comentarios	Comentarios Chile
Preserved tomatoes	Minimum Drained Weight	AOAC 968.30	Gravimetry (sieving) note: Use a No. 14 screen instead of '7/16' or No. 8	I	CXS 13		Sin comentarios
Preserved tomatoes	Mould count	AOAC 965.41	Howard mould count	I	CXS 13	Mould count for preserved tomatoes to be set according to the legislation of the country of retail sale	Sin comentarios
Processed tomato concentrates	Lactic acid (lactate)	EN 2631 <u>EN 12631</u>	Spectrometry (Enzymatic determination)	II	CXS 57	Should be EN 12631. EN 2631 is "Evaluation of human exposure to whole-body vibration"	Colocar el principio del Método de medición. Corrección del nombre acorde a método. De acuerdo con el principio del Método de medición
Processed tomato concentrates	Mineral impurities (sand)	AOAC 971.33 <u>ISO 762</u>	Gravimetry	II I	CXS 57	AOAC 971.33 is acid-insoluble residue. Recommend replacing with ISO 762	Sin comentarios
Processed tomato concentrates	Mould count	AOAC 965.41	Howard mould count	I	CXS 57	Mould count for processed tomato concentrates to be set according to the legislation of the country of retail sale.	Sin comentarios
Processed tomato concentrates	Natural tomato soluble solids	AOAC 970.59	Refractometry	I		Redundant of "Tomato soluble solids" below	Sin comentarios
Processed tomato concentrates	Sodium chloride	AOAC 971.27 (Codex general method)	Potentiometry	II	CXS 57		Sin comentarios
Processed tomato concentrates	Tomato soluble solids	AOAC 970.59	Refractometry	I	CXS 57		Sin comentarios
Raisins	Mineral impurities	CAC/RM 51 <u>ISO 762</u>	Gravimetry (Ashing)	I	CXS 67	CCPFV29 (2020) forwarded proposed draft Standard for dried fruits to CAC43 at Step 5/8. CAC43 adopted the Standard, pending certain endorsements. This Standard once published will supersede CXS 67. Recommend replacing with ISO 762	De acuerdo con el principio del Método de medición

Frutas y verduras elaboradas – Apéndice I							
Producto	Disposición	Método	Principio	Tipo	Norma	Comentarios	Comentarios Chile
Raisins	Mineral oil	CAC/RM 52	Extraction and separation on alumina	II	CXS 67	Cannot find CAC/RM 51 or 52 in CXS 67. CXS 67 will be superseded by the Standard for dried fruits once it is published. Retain until new standard is published?	Sin comentarios
Raisins	Moisture	AOAC 972.20	Electrical conductance	I	CXS67		Sin comentarios
Raisins	Sorbitol	AOAC 973.28	Gas chromatography (flame ionization detector)	II	CXS 67		Indicar tipo de detector
Raisins	Sulphur dioxide	AOAC 963.20	Colorimetry	II	CXS 67		La disposición permite ser analizada como Sulfurous Acid(Total)
Table olives	Drained weight	AOAC 968.30 (Codex general method for processed fruits and vegetables)	Sieving-Gravimetry (sieving)	I	CXS 66		Colocar entre paréntesis el tamizaje
Table olives	Fill of glass containers	CAC/RM 46* (for glass containers) (Codex general method for processed fruits and vegetables) and ISO 90-1 (for metal containers) (Codex general method for processed fruits and vegetables) ISO 8106	Weighing	I	CXS 66	CCMAS 36 (2015) agreed to replace CAC/RM 46 with ISO 8106	Sin comentarios
Table olives	Fill of metal containers	ISO 90-1 (for metal containers) (Codex general method for processed fruits and vegetables)	Weighing	I	CXS 66		Sin comentarios
Table olives	pH of brine	NMKL 179 (Codex general method for processed fruits and vegetables)	Potentiometry	II	CXS 66		Sin comentarios

Frutas y verduras elaboradas – Apéndice I							
Producto	Disposición	Método	Principio	Tipo	Norma	Comentarios	Comentarios Chile
Table olives	pH of brine	AOAC 981.12 (Codex general method for processed fruits and vegetables)	Potentiometry	III	CXS 66		Indicar el principio del método
Table olives	pH of brine	ISO 1842	Potentiometry	IV	CXS 66		Indicar el principio del método
Table olives	Salt in brine	AOAC 971.27 NMKL 178 (Codex general method)	Titrimetry (Potentiometric)	II	CXS 66		Indicar que el Método es una titulación con punto de equilibrio por potenciometría
Table olives	Lead	AOAC 999.11 NMKL 139 (Codex general method)	Absorption Spectrophotometry AAS (Flame absorption (Flame Atomic))	II	CXS 66		Se debe evitar el uso de siglas para definir los métodos analíticos y debe especificarse el Método de medición para absorción atómica
Table olives	Tin	NMKL 190 EN 15764	Absorption Spectrophotometry AAS (Flame absorption (Flame Atomic))	II	CXS 66		Se debe evitar el uso de siglas para definir los métodos analíticos y debe especificarse el Método de medición para absorción atómica

Ghana

POSITION 1: Ghana recommends the inclusion of a method that uses the flameless atomic absorption spectrometric for determination of lead, ISO 6633 in processed fruits and vegetables.

RATIONALE: The limit of quantification for lead determination using the flameless Atomic Absorption Spectrometer will be low.

POSITION 2: Ghana recommends AOAC 971.33 be retained for mineral impurities in canned strawberries and added to canned palmito since it still determines the sandy matter/ mineral impurities.

RATIONALE: Replacing AOAC 971.33 with ISO 762 is not necessary since ISO 762 also determines impurities generally originating from the soil.

POSITION 3: Ghana supports the specified commodities for certain processed fruits and vegetables to remain listed in parenthesis under the "Processed Fruits and Vegetables".

RATIONALE: It adds clarity and specificity to the method with regards to the scope.

POSITION 4: Ghana supports the deletion of "Certain canned vegetables (palmito).

RATIONALE: Is not relevant and must be deleted.

Nigeria

Nigeria appreciates the work done by the electronic working group (EWG) chaired by the United States of America for the development of this draft guidelines.

Nigeria agreed with all the methods for processed fruits and vegetables workable package. Delegate should join in the discussion.

Peru**Comentario General:**

Perú ha examinado la CL 2023/48/OCS-MAS y está de acuerdo en ratificar los cambios propuestos a la norma CXS 234-1999, con algunas observaciones editoriales.

Comentarios Específicos:

- a. **Si se pueden ratificar las revisiones de la CXS 234 propuestas que figuran en el Apéndice I del documento CX/MAS 23/42/6,**

Perú expresa que se podrían aprobar los métodos del Apéndice I con los comentarios específicos detallados en la tabla resumen.

- b. **Si los productos afectados para determinadas frutas y verduras elaboradas deben seguir figurando entre paréntesis en el marco de «Frutas y verduras elaboradas» como se muestra en el Apéndice I, o si la unidad 'producto–disposición' debe incluirse en líneas separadas**

Perú está de acuerdo en mantener la presentación del Apéndice 1, para afectados para determinadas frutas y verduras elaboradas deben seguir figurando entre paréntesis en el marco de «Frutas y verduras elaboradas» tal como está detallado en el Apéndice I

Frutas y verduras elaboradas – Apéndice I							
Producto	Disposición	Método	Principio	Tipo	Norma	Comentarios	Comentarios de Perú
Processed fruits and vegetables (Jams , Jellies , Marmalades , pickled cucumbers , mango chutney , Coconut Milk and Coconut Cream)	Benzoic acid	NMKL 124	Liquid Chromatography	II	CXS 192	Benzoic acid falls under CXS 192 – Food Additives	Perú propone como método tipo I: ISO 22855:2008 Fruit and vegetable products — Determination of benzoic acid and sorbic acid concentrations — High performance liquid chromatography method
Processed fruits and vegetables (Jams , Jellies , Marmalades , pickled cucumbers , mango chutney , Coconut Milk and Coconut Cream)	Benzoic acid	NMKL 103 ; or AOAC 983.16	Gas Chromatography	III	CXS 192	NMKL 103 withdrawn because of the use of hazardous solvent	Se acepta propuesta de cambio
Processed fruits and vegetables (canned strawberries , pickled cucumbers , preserved tomatoes , canned citrus fruits , certain canned vegetables)	Calcium	AOAC 968.31	Complexometry/ Titrimetry	II	CXS 192 CXS 62 CXS 115 CXS 13 CXS 254 CXS 297	Calcium firming agents listed in CXS 192 – food additives	Se acepta propuesta de cambio
Processed fruits and vegetables	Drained Weight	AOAC 968.30 (Codex General Method)	Sieving Gravimetry	I			Se acepta propuesta de cambio
Processed fruits and vegetables	Fill of glass containers	CAC/RM 46 (reference to “metal containers” deleted and refer to ISO 90-1 for determination of water capacity in metal containers) ISO 8106	Weighing	I		CCMAS36 (2015) agreed to replace CAC/RM 46 with ISO 8106	Se acepta propuesta de cambio
Processed fruits and vegetables	Fill of metal containers	ISO 90-1	Weighing	I			Se acepta propuesta de cambio

Frutas y verduras elaboradas – Apéndice I							
Producto	Disposición	Método	Principio	Tipo	Norma	Comentarios	Comentarios de Perú
Processed fruits and vegetables (Canned Fruits, Jams, Jellies and Marmalades, Mango Chutney, Canned Vegetables, Preserved Tomatoes, Table Olives, Pickled Cucumbers)	Lead	AOAC 972.25 (Codex general method)	AAS (Flame absorption)	III	CXS 193	Codex general method type II for other commodities	Se acepta propuesta de cambio
Processed fruits and vegetables	Packing medium Canned berry fruits (raspberry, strawberry)	AOAC 932.12 ISO 2173	Refractometry	†		AOAC 932.12 and ISO 2173 both determine soluble solids which is already listed below. Recommend striking this row.	Colocar el nombre del producto (Processed fruits and vegetables) y la disposición (sólidos solubles)
Processed fruits and Vegetables (pickled cucumbers, table olives, processed tomato concentrates, preserved tomatoes, mango chutney, and aqueous coconut products except canned bamboo shoots, pH determined by AOAC 981.12)	pH	ISO 1842	Potentiometry	IV	CXS 115 CXS 66 CXS 57 CXS 13 CXS 160 CXS 240		Se acepta propuesta de cambio
Processed fruits and vegetables (pickled cucumbers, table olives, processed tomato concentrates, preserved tomatoes, mango chutney, and aqueous coconut products)	pH	AOAC 981.12	Potentiometry	III	CXS 115 CXS 66 CXS 57 CXS 13 CXS 160 CXS 240		Se acepta propuesta de cambio

Frutas y verduras elaboradas – Apéndice I							
Producto	Disposición	Método	Principio	Tipo	Norma	Comentarios	Comentarios de Perú
Processed fruits and vegetables (pickled cucumbers , table olives , processed tomato concentrates , preserved tomatoes , mango chutney , and aqueous coconut products)	pH	NMKL 179	Potentiometry	II	CXS 115 CXS 66 CXS 57 CXS 13 CXS 160 CXS 240		Nos abstenemos
Processed fruits and vegetables (pickled cucumbers , processed tomato concentrates , preserved tomatoes , canned applesauce , jams , jellies and marmalades , mango chutney , and certain canned fruit)	Soluble solids	ISO 2173 AOAC 932.12	Refractometry	I	CXS 115 CXS 57 CXS 13 CXS 17 CXS 296 CXS 160 CXS 319	These methods are not identical. Suggest retaining ISO method which contains more detailed procedures	Se acepta propuesta de cambio
Processed fruits and vegetables (Jams , Jellies , Marmalades , pickled cucumbers)	Sorbates	NMKL 103 / AOAC 983.16	Gas Chromatography	III	CXS 192	NMKL 103 withdrawn because of the use of hazardous solvent	Se acepta propuesta de cambio
Processed fruits and vegetables (Jams , Jellies , Marmalades , pickled cucumbers)	Sorbates	NMKL 124	Liquid Chromatography	II	CXS 192	Sorbate falls under CXS 192 – Food Additives	Nos abstenemos de cambio

Frutas y verduras elaboradas – Apéndice I							
Producto	Disposición	Método	Principio	Tipo	Norma	Comentarios	Comentarios de Perú
Processed fruits and vegetables	Tin	AOAC 980.19 (Codex general method)	Flame Atomic Absorption Spectrophotometry AAS	II	CXS 193	Relevant Codex commodity standards include CXS 62-1981, CXS 254-2007, CXS 296-2009, CXS 242-2003, CXS 297-2009, CXS 78-1981, CXS 159-1987, CXS 42-1981, CXS 60-1981, CXS 99-1981, CXS 160-1987, CXS 66-1981, CXS 13-1981, CXS 115-1981, CXS 57-1981, CXS 145-1981, CXS 98-1981, CXS 96-1981, CXS 97-1981, CXS 88-1981, CXS 89-1981.	Se acepta propuesta de cambio
Processed fruits and vegetables	Total solids	AOAC 920.151	Gravimetry	I			El título del método indica frutas y productos derivados por lo que no aplicaría a hortalizas, se solita revisar la propuesta
Aqueous Coconut Products	Total Fats	ISO 1211 IDF 1	Gravimetry (Röse-Gottlieb)	I	CXS 240	Validated on cow, sheep, goat milk	Se recomienda retirar el método ISO 1211 IDF 1 porque el método ha sido anulado y no aplica a la matriz
Aqueous Coconut Products	Total solids	ISO 6731 IDF 21	Gravimetry	I	CXS 240	Validated on milk, cream, and evaporated milk	Se recomienda retirar el método ISO 6731 IDF no aplica a la matriz
Aqueous Coconut Products	Non-fat solids	ISO 1211 IDF 1 ISO 6731 IDF 21	Calculation: Gravimetry (Röse-Gottlieb) Gravimetry	I	CXS 240	Validated on cow, sheep, goat milk	Se recomienda retirar el método ISO 1211 IDF 1 e ISO 6731 IDF porque no aplica a la matriz
Aqueous Coconut Products	Moisture	ISO 6731 IDF 21	Calculation: Gravimetry	I	CXS 240	Validated on milk, cream, and evaporated milk	Se recomienda retirar el método ISO 6731 IDF 1 porque el método ha sido anulado y no aplica a la matriz

Frutas y verduras elaboradas – Apéndice I							
Producto	Disposición	Método	Principio	Tipo	Norma	Comentarios	Comentarios de Perú
Canned Apple Sauce	Fill of <u>glass containers</u>	CAC/RM 46* (for glass containers) (Codex general method for processed fruits and vegetables) and ISO 90-1 (for metal containers) (Codex general method for processed fruits and vegetables)-ISO 8106	Weighing	I	CXS 17	CAC/RM 46 resides in the Standard for certain canned vegetables (CXS 297). CCMAS 36 (2015) agreed to replace CAC/RM 46 with ISO 8106	Se acepta propuesta de cambio
<u>Canned Apple Sauce</u>	<u>Fill of metal containers</u>	<u>ISO 90-1 (for metal containers)</u> <u>(Codex general method for processed fruits and vegetables)</u>	<u>Weighing</u>	I	CXS 17		Se acepta propuesta de cambio
Canned Apple Sauce	Soluble solids	AOAC 932.12 ISO 2173 (Codex general method for processed fruits and vegetables)	Refractometry	I	CXS 17	These methods are not identical. Suggest retaining ISO method which contains more detailed procedures	Se acepta propuesta de cambio
Canned green beans and wax beans	Tough Strings	CAC/RM 39	Stretching	I	CXS 297		Nos abstenemos
<u>Canned green peas</u>	<u>Fill of glass containers</u>	<u>ISO 8106</u>	<u>Weighing</u>	I	CXS 297	CCPFV 24 (2008) agreed to revoke CAC/RM 45	Se acepta propuesta de cambio
Canned green peas	Proper fill (in lieu of drained weight) <u>Fill of metal containers</u>	CAC/RM 45 <u>ISO 90-1</u>	Pouring and measuring <u>Weighing</u>	I	CXS 297	CCPFV 24 (2008) agreed to revoke CAC/RM 45	Se acepta propuesta de cambio
Canned green peas	Types of peas, distinguishing	CAC/RM 48	Visual inspection	I	CXS 297		Sin comentarios
Canned mangoes	Syrup	AOAC 932.14C	Brix spindle method	I	CXS 319	Method is "solids in syrups"	Sin comentarios

Frutas y verduras elaboradas – Apéndice I							
Producto	Disposición	Método	Principio	Tipo	Norma	Comentarios	Comentarios de Perú
Canned mushrooms	Washed Drained weight	CAC/RM 44 <u>AOAC 968.30</u>	Sieving	I	CXS 297	CCPFV25 (2010) revoked CXS 55 (Standard for canned mushrooms) containing CAC/RM 44. Annex on mushrooms now included in CXS 297, containing provision for drained weight. Suggest replacing CAC/RM 44 with AOAC 968.30	Se acepta propuesta de cambio
Canned palmito	Mineral impurities	ISO 762	Gravimetry	I	CXS 297		Sin comentarios
Canned Stone Fruits	Drained weight	AOAC 968.30 ISO:2173	Gravimetry	I	CXS 242	ISO 2173 is a method for soluble solids, not drained weight. Wrong provision	Se acepta propuesta de cambio
Canned Stone Fruits	Soluble solids	AOAC 932.14C <u>ISO 2173</u>	Refractometry	I	CXS 242	Methods are not identical. Suggest retaining ISO method which contains more detailed procedures	Se acepta propuesta de cambio
Canned strawberries	Calcium	AOAC 968.31	Complexometric titrimetry	II	CXS 62	Validated for canned tomatoes, lima beans, potatoes	Se acepta propuesta de cambio
Canned strawberries	Mineral impurities	AOAC 971.33 <u>ISO 762</u>	Gravimetry	I	CXS 62	AOAC 971.33 is acid-insoluble residue. Recommend replacing with ISO 762	Se acepta propuesta de cambio
Certain canned citrus fruits	Calcium	NMKL 153	Flame Atomic Absorption Spectrophotometry	II	CXS 254	Calcium firming agents listed in CXS 192 – food additives	Se acepta propuesta de cambio
Certain canned citrus fruits	Calcium	AOAC 968.31	Complexometry Titrimetry	III	CXS 254	Calcium firming agents listed in CXS 192 – food additives	Se acepta propuesta de cambio

Frutas y verduras elaboradas – Apéndice I							
Producto	Disposición	Método	Principio	Tipo	Norma	Comentarios	Comentarios de Perú
Certain Canned Vegetables (palmito)	Mineral impurities (sand)	AOAC 971.33 ISO 762	Gravimetry	I		Methods are not identical and AOAC 971.33 is acid-insoluble residue. Mineral impurities in canned palmito already listed above.	Se acepta propuesta de cambio
Citrus marmalade	Calcium	AOAC 968.31	Complexometric titrimetry	II	CXS 296	Calcium firming agents listed in CXS 192 – food additives	Se acepta propuesta de cambio
Dates	Identification of defects	Described in the Standard	Visual inspection	I	CXS 143		Sin comentarios
Dates	Moisture	AOAC 934.06	Gravimetry (vacuum oven)	I	CXS 143		Sin comentarios
Desiccated coconut	Total acidity of the extracted oil	ISO 660 AOCs Cd 3d-63 ISO 660 or AOCs Cd 3d-63	Titrimetry	I	CXS 177	Changed method format to maintain consistency with previous decisions, i.e. named vegetable oils	Se acepta propuesta de cambio
Desiccated coconut	Ash	AOAC 950.49	Gravimetry	I	CXS 177		Sin comentarios
Desiccated coconut	Extraneous vegetable matter	Described in the Standard	Counting extraneous material with the naked eye	IV	CXS 177		Sin comentarios
Desiccated coconut	Moisture	AOAC 925.40	Gravimetry (loss on drying)	I	CXS 177		Sin comentarios
Desiccated coconut	Oil content	AOAC 948.22	Gravimetry	I	CXS 177	Titled "Fat (Crude)" in method title	Sin comentarios
Dried apricots	Identification of defects	Described in the Standard	Visual inspection (weighing)	I	CXS 130	n.b. CCPFV29 (2020) forwarded proposed draft standard for dried fruits to CAC43 at Step 5/8. CAC43 adopted this Standard, pending certain endorsements. This Standard once published will supersede CXS 130.	Se acepta propuesta de cambio

Frutas y verduras elaboradas – Apéndice I							
Producto	Disposición	Método	Principio	Tipo	Norma	Comentarios	Comentarios de Perú
Dried apricots	Moisture	AOAC 934.06	Gravimetry (vacuum oven)	I	CXS 130	n.b. CCPFV29 (2020) forwarded proposed draft standard for dried fruits to CAC43 at Step 5/8. CAC43 adopted this Standard, pending certain endorsements. This Standard once published will supersede CXS 130.	Se acepta propuesta de cambio
Dried apricots	Sulphur dioxide	AOAC 963.20	Colorimetry	II	CXS 130	n.b. CCPFV29 (2020) forwarded proposed draft standard for dried fruits to CAC43 at Step 5/8. CAC43 adopted this Standard, pending certain endorsements. This Standard once published will supersede CXS 130.	Se acepta propuesta de cambio
Jams (fruit preserves) and jellies	Fill of <u>Glass</u> Containers	CAC/RM 46 <u>ISO 8106</u>	Weighing	I	CXS 296	CCMAS 36 (2015) agreed to replace CAC/RM 46 with ISO 8106	Se acepta propuesta de cambio
Jams (fruit preserves) and jellies	Soluble solids	ISO 2173 AOAC 932.12	Refractometry	I	CXS 296	Methods are not identical. Suggest retaining ISO method which contains more detailed procedures	Se acepta propuesta de cambio
Mango chutney	Ash insoluble in HCl	ISO 763	Gravimetry	I	CXS 160		Sin comentarios
Pickled cucumbers	Acidity, total	AOAC 942.15	Titrimetry	I	CXS 115		Sin comentarios
Pickled cucumbers	Drained weight	AOAC 968.30	Gravimetry	I	CXS 115		Sin comentarios
Pickled cucumbers	Mineral impurities	AOAC 971.33 <u>ISO 762</u>	Gravimetry	I	CXS 115	AOAC 971.33 is acid-insoluble residue. Recommend replacing with ISO 762	Se acepta propuesta de cambio
Pickled cucumbers	Salt in brine	AOAC 971.27 (Codex general method)	Potentiometry	II	CXS 115		Sin comentarios

Frutas y verduras elaboradas – Apéndice I							
Producto	Disposición	Método	Principio	Tipo	Norma	Comentarios	Comentarios de Perú
Pickled cucumbers	Volume fill by displacement	Described in the Standard	Displacement	I	CXS 115		Sin comentarios
<u>Preserved tomatoes</u>	<u>Calcium</u>	<u>NMKL 153</u>	<u>Flame Atomic Absorption Spectrophotometry</u>	<u>II</u>	CXS 13	Calcium firming agents listed in CXS 192 – food additives	Se acepta propuesta de cambio
Preserved tomatoes	Calcium	AOAC 968.31	Complexometric titrimetry	III	CXS 13	Calcium firming agents listed in CXS 192 – food additives	Se acepta propuesta de cambio
<u>Preserved tomatoes</u>	<u>Calcium</u>	<u>NMKL 153</u>	<u>Atomic Absorption Spectrophotometry</u>	II			Se acepta propuesta de cambio
Preserved tomatoes	Minimum Drained Weight	AOAC 968.30	Gravimetry (sieving) note: Use a No. 14 screen instead of '7/16' or No. 8	I	CXS 13		Se acepta propuesta de cambio
Preserved tomatoes	Mould count	AOAC 965.41	Howard mould count	I	CXS 13	Mould count for preserved tomatoes to be set according to the legislation of the country of retail sale	Se acepta propuesta de cambio
Processed tomato concentrates	Lactic acid	EN 2634 <u>EN 12631</u>	Enzymatic determination	II	CXS 57	Should be EN 12631. EN 2631 is "Evaluation of human exposure to whole-body vibration"	Se acepta propuesta de cambio
Processed tomato concentrates	Mineral impurities (sand)	<u>AOAC 971.33</u> <u>ISO 762</u>	Gravimetry	IV I	CXS 57	AOAC 971.33 is acid-insoluble residue. Recommend replacing with ISO 762	Se acepta propuesta de cambio
Processed tomato concentrates	Mould count	AOAC 965.41	Howard mould count	I	CXS 57	Mould count for processed tomato concentrates to be set according to the legislation of the country of retail sale.	Se acepta propuesta de cambio

Frutas y verduras elaboradas – Apéndice I							
Producto	Disposición	Método	Principio	Tipo	Norma	Comentarios	Comentarios de Perú
Processed tomato concentrates	Natural tomato soluble solids	AOAC 970.59	Refractometry	I		Redundant of “Tomato soluble solids” below	Se acepta propuesta de cambio
Processed tomato concentrates	Sodium chloride	AOAC 971.27 (Codex general method)	Potentiometry	II	CXS 57		Sin comentarios
Processed tomato concentrates	Tomato soluble solids	AOAC 970.59	Refractometry	I	CXS 57		Sin comentarios
Raisins	Mineral impurities	CAC/RM 51 <u>ISO 762</u>	Ashing	I	CXS 67	CCPFV29 (2020) forwarded proposed draft Standard for dried fruits to CAC43 at Step 5/8. CAC43 adopted the Standard, pending certain endorsements. This Standard once published will supersede CXS 67. Recommend replacing with ISO 762	Se acepta propuesta de cambio
Raisins	Mineral oil	CAC/RM 52	Extraction and separation on alumina	II	CXS 67	Cannot find CAC/RM 51 or 52 in CXS 67. CXS 67 will be superseded by the Standard for dried fruits once it is published. Retain until new standard is published?	Se acepta propuesta de cambio
Raisins	Moisture	AOAC 972.20	Electrical conductance	I	CXS 67		Sin comentarios
Raisins	Sorbitol	AOAC 973.28	Gas chromatography	II	CXS 67		Sin comentarios
Raisins	Sulphur dioxide	AOAC 963.20	Colorimetry	II	CXS 67		Sin comentarios
Table olives	Drained weight	AOAC 968.30 (Codex general method for processed fruits and vegetables)	Sieving Gravimetry	I	CXS 66		Sin comentarios

Frutas y verduras elaboradas – Apéndice I							
Producto	Disposición	Método	Principio	Tipo	Norma	Comentarios	Comentarios de Perú
Table olives	Fill of <u>glass</u> containers	CAC/RM 46* (for glass containers) (Codex general method for processed fruits and vegetables) and ISO 90-1 (for metal containers) (Codex general method for processed fruits and vegetables) ISO 8106	Weighing	I	CXS 66	CCMAS 36 (2015) agreed to replace CAC/RM 46 with ISO 8106	Se acepta propuesta de cambio
<u>Table olives</u>	<u>Fill of metal containers</u>	<u>ISO 90-1 (for metal containers) (Codex general method for processed fruits and vegetables)</u>	<u>Weighing</u>	I	CXS 66		Se acepta propuesta de cambio
Table olives	pH of brine	NMKL 179 (Codex general method for processed fruits and vegetables)	Potentiometry	II	CXS 66		Se acepta propuesta de cambio
Table olives	pH of brine	AOAC 981.12 (Codex general method for processed fruits and vegetables)		III	CXS 66		Sin comentarios
Table olives	pH of brine	ISO 1842		IV	CXS 66		Sin comentarios
Table olives	Salt in brine	AOAC 971.27 NMKL 178 (Codex general method)	Potentiometry	II	CXS 66		Sin comentarios
Table olives	Lead	AOAC 999.11 NMKL 139 (Codex general method)	<u>Flame Atomic Absorption Spectrophotometry</u> <u>AAS (Flame absorption)</u>	II	CXS 66		Se acepta propuesta de cambio

Frutas y verduras elaboradas – Apéndice I							
Producto	Disposición	Método	Principio	Tipo	Norma	Comentarios	Comentarios de Perú
Table olives	Tin	NMKL 190 EN 15764	<u>Flame Atomic Absorption Spectrophotometry</u> AAS	II	CXS 66		Se acepta propuesta de cambio

Uruguay

Uruguay congratulates the work well done by the GTE that addresses the need to review and updated CXS 234 and thanks the countries and SDOs for leading or/and join in the work on the GTE.

We suggest the following recommendation for being consider by the physical meeting of Endorsement Working Group and under Agenda (Endorsement of methods of analysis and sampling):

Product	Provision	Method	Principle	Type	Comments
CX/MAS 23/42/6 Processed fruits and vegetable workable package					
Processed fruits and Vegetables ((pickled cucumbers, table olives, processed tomato concentrates, preserved tomatoes, mango chutney, and aqueous coconut products except canned bamboo shoots	pH	ISO 1842	Potentiometry	II	It is a method for more than one matrix. We suggest same method as olive tables
Various matrices	Lead Tin Calcium Sorbitol Sorbates Benzoic acid	Performance numerical criteria			We agree to consider performance numerical criteria for this provisions in all products proposed
Processed fruits and vegetables Raisins	Total solids	ISO 1026	Gravimetry	I	It is a method for more than one matrix.
Canned mangoes Process tomato concentrate	Syrup	ISO 2173	Brix spindle method	I	It is a method for more than one matrix.
Pickled cucumbers	Acidity, total	ISO 750	Titrimetry	I	
Raisins	Sulphur dioxide	ISO 5522	Titrimetry	II	It is a method for more than one matrix. We suggest same method as Spices and culinary herbs
Table olives	pH	ISO 1842	Potentiometry	II	It is a method for more than one matrix.

Product	Provision	Method	Principle	Type	Comments
					We suggest same method as processed fruits and vegetables