

# CODEX ALIMENTARIUS COMMISSION



Food and Agriculture  
Organization of the  
United Nations



World Health  
Organization

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Agenda Item 4.2

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## JOINT FAO/WHO FOOD STANDARDS PROGRAMME CODEX COMMITTEE ON METHODS OF ANALYSIS AND SAMPLING

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### REVIEW OF METHODS OF ANALYSIS IN CXS 234: CEREALS, PULSES AND LEGUMES WORKABLE PACKAGE

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

#### Chile

**4.2 Conjunto manejable para cereales, legumbres y leguminosas** CX/MAS 23/42/5  
**- Observaciones en respuesta a CL 2023/13/OCS-MAS** CX/MAS 23/42/5 Add.1

Chile realiza los siguientes comentarios de los métodos del documento CX/MAS 23/42/5 a considerar en cuanto a su ratificación.

Se considera que se debe mantener el factor de conversión de proteínas (xN) pero en el principio del método. Para facilitar el acceso a la información a los usuarios del método.

En cuanto al análisis de proteínas de quinoa, el método ISO 1871 es adecuado para el fin previsto, fue validado para este producto por 7 Institutos Metrológicos del Sistema Interamericano de Metrología (SIM), de países productores y de la cual se origina este grano, correspondientes a: Bolivia (IBMETRO), Argentina (INTI), Chile (ISP), Uruguay (LATU), Perú (INACAL), INM (Colombia), INEN (Ecuador) y Colombia (INM), a través del “**Fondo Regional de Infraestructura de Calidad para la Protección del Clima y la Biodiversidad en América Latina y el Caribe**” en el subproyecto “**Aseguramiento de la calidad y trazabilidad metrológica de los parámetros analíticos utilizados para la caracterización de la Quinoa**”, demostrando su idoneidad para el fin previsto. Por lo cual no deben ser modificados.

### Group 1. Methods reviewed by CPL EWG with decisions (for comment through CL 2023/13/OCS-MAS)

#### Cereals, Pulses and Legumes and Derived Products

Producto	Disposición	Codex Standard	Método	Principio	Tipo	Comité	Comentarios Chile
Certain pulses	Moisture	CXS 171-1989 (2019)	<del>ISO 665</del> <b>ISO 24557 / AACC 44-17.01</b>	Gravimetry ( <b>oven drying</b> )	I	CCPL	de acuerdo porque es más similar a matriz del alcance
Degermed maize (corn) meal and maize (corn) grits	Ash <sup>1</sup>	CXS 155-1985 (2019)	AOAC 923.03 / ISO 2171 <del>ICC Method No 104/1</del>	Gravimetry - ( <b>incineration</b> )	I	CCPL	de acuerdo con el eliminar Método ICC por el uso de temperatura de calcinación elevada
Degermed maize (corn) meal and maize (corn) grits	Fat, crude <sup>1</sup>	CXS 155-1985 (2019)	AOAC 945.38F; <b>and 920.39c</b>	Gravimetry (ether extraction) -	I	CCCPL	De acuerdo Método 945.38 redirige al método 920.39. Límites del método: grandes cantidades de compuestos hidrosolubles como carbohidratos, urea, ácido láctico, glicerol, entre otros, pueden ser interferentes.
Degermed maize (corn) meal and maize (corn) grits	Moisture	CXS 155-1985 (2019)	<del>ISO 712</del> <del>ICC Method No 110/1</del> ICC 110/1	Gravimetry ( <b>oven drying</b> )	I	CCCPL	De acuerdo con aclarar el principio de mejor manera
Degermed maize (corn) meal and maize (corn) grits	Particle size (granularity)	CXS 155-1985 (2019)	AOAC 965.22 <b>and ISO3310-1</b>	<b>Gravimetry</b> (Sieving)	I	CCCPL	De acuerdo son métodos complementarios, se debe indicar el principio de gravimetría tras el tamizaje.
Degermed maize (corn) meal and maize (corn) grits	Protein <sup>1</sup>	CXS 155-1985 (2019)	<del>ICC Method No 105/1</del> <b>ICC 105/2</b>	Titrimetry (Kjeldahl digestion)	I	CCCPL	De acuerdo
Durum wheat semolina and durum wheat flour	Ash <sup>1</sup> ( <del>semolina</del> )	CXS 178-1991 (2019)	AOAC 923.03 / ISO 2171	Gravimetry ( <b>incineration</b> )	I	CCCPL	De acuerdo
Durum wheat semolina and durum wheat flour	Moisture	CXS 178-1991 (2019)	ISO 712 / ICC 110/1	Gravimetry ( <b>oven drying</b> )	I	CCCPL	De acuerdo
Durum wheat semolina and durum wheat flour	Protein <sup>1</sup> ( <del>Nx5.7</del> )	CXS 178-1991 (2019)	ICC 105/ <del>12</del>	Titrimetry (Kjeldahl digestion) (Nx5.7)	I	CCCPL	Debería estar el factor Nx en principio del Método pero no en la provision asegurar que la indicación en CXS 234 coincida con lo definido en el comité de productos Suggest that N factor be prescribed in commodity standards if internationally CXS 178
Instant Noodles	Extraction of oil from instant noodles	<del>CXS 249-2006 (2019)</del>	<del>described in the standard</del>	Gravimetry (ether extraction)			-----
Instant Noodles	Acid Value	CXS 249-2006 (2019)	CXS 249-2006 <b>Apendice</b>	Titrimetry (ether extraction)	I	CCCPL	Ok. Pero referencia el apartado del estándar.

Instant Noodles	Moisture	CXS 249-2006 (2019)	CXS 249-2006 <b>Appendice</b>	Gravimetry ( <b>oven drying</b> )	I	CCCPL	OK
Maize (corn)	Moisture	CXS 153-1985 (2019)	ISO 6540 / <b>ICC 110/1</b>	Gravimetry ( <b>oven drying</b> )	I	CCCPL	OK
Peanuts (raw)	Aflatoxins, total	<del>CXS 200-1995 (2019)</del> <b><u>CXS 193-1995 (2019)</u></b>	AOAC 991.31 ( <b>A – G</b> )	Immunoaffinity column ( <b>IAC</b> ), (Aflatest), <b>fluorometry</b>	# <b>III</b>	CCCPL/Cok C CF	
Peanuts (raw)	Aflatoxins, total	<del>CXS 200-1995 (2019)</del> <b><u>CXS 193-1995 (2019)</u></b>	AOAC 991.31 ( <b>A – F, H</b> )	Immunoaffinity column (Aflatest) <b>IAC (Aflatest) and HPLC-Post column derivatization</b>	II	CCCPL/Cok C CF	
<del>Peanuts (raw)</del> <b><u>(intended for further processing)</u></b>	<del>Aflatoxins, total</del> -	<del>CXS 200-1995 (2019)</del> <b><u>CXS 193-1995 (2019)</u></b>	<del>AOAC 993.17</del>	<del>Thin layer chromatography</del>	<del>III-IV</del>	<del>CCCPL/Cok</del> C CF	<b>OK</b>

Peanuts (intended for further processing)	Aflatoxins, total	<del>CXS 200-1995 (2019)</del> <b>CXS 193-1995 (2019)</b>	AOAC 975.36	<b>IAC</b> (Romer minicolumn)	<del>## IV</del> CCCPL/CC CF	De acuerdo que sea tipo IV por ser semicuantitativo.
Peanuts (Cereals, shell-fruits and derived products (including peanuts))	<b>Aflatoxinas total Sum of aflatoxins B1, B2, G1 and G2</b>	<del>CXS 200-1995 (2019)</del> <b>CXS 193-1995 (2019)</b>	<del>EN 12955 / ISO 16050</del>	<b>IAC</b> , HPLC-PCD	III - CCCPL	EN 12955 withdrawn OK
Peanuts (intended for further processing)	Aflatoxins, total	<del>CXS 200-1995 (2019)</del> <b>CXS 193-1995 (2019)</b>	AOAC 979.18	<b>IAC</b> (Holaday- Velasco minicolumn)	<del>## IV</del> CCCPL/CC CF	De acuerdo con dejar como tipo IV.
Pearl millet flour	Ash <sup>1</sup>	CXS 170-1989 (2019)	AOAC 923.03 / <b>ISO 2171</b>	Gravimetry ( <b>incineration</b> )	CCCPL	Ok
Pearl millet flour	Colour	CXS 170-1989 (2019)	Modern Cereal Chemistry, 6th Ed., D.W. Kent-Jones and A.J. Amos (Ed.), pp. 605-612, Food Trade Press Ltd, London, 1969.	Colorimetry using (specific colour grader)	<del>IV</del> CCCPL	De acuerdo con mantener como tipo IV.
Pearl millet flour	Fat, crude <sup>1</sup>	CXS 170-1989 (2019)	AOAC 945.38F; <b>and</b> 920.39C	Gravimetry (ether extraction)	I CCCPL	Ok
Pearl millet flour	Fibre, crude <sup>1</sup>	CXS 170-1989 (2019)	ISO 5498 ( <del>B-5 Separation</del> )	Gravimetry ( <b>extraction and filtration</b> )	I CCCPL	Ok
Pearl millet flour	Moisture	CXS 170-1989 (2019)	ISO 712 :/ ICC 110/1	Gravimetry ( <b>oven drying</b> )	I CCCPL	Ok
Pearl millet flour	Protein <sup>1</sup>	CXS 170-1989 (2019)	<del>AOAC 920.87</del> <b>ISO 20483</b>	Titrimetry (Kjeldahl digestion)	I CCCPL	Ok
Quinoa	Moisture content	CXS 333-2019 (2020)	ISO 712 / AACCI 44-15.02	Gravimetry ( <b>oven drying</b> )	I CCCPL	Ok
Quinoa	Protein <sup>1</sup> ( <del>Nx</del> 6.25 in dry weight)	CXS 333-2019 (2020)	<b>ISO 20483</b>	Titrimetry (Kjeldahl digestion) ( <del>IV-II</del> Nx6,25)	CCCPL	El factor de conversión de proteínas debe mantenerse, pero en la descripción del principio del método. Por otro lado debe mantener el ISO 1871 fue validado por Laboratorios metrológicos del Sistema Interamericano de Metrología y es adecuado para quinoa, puede incluirse el ISO 20483 pero como tipo II
Quinoa	Protein <sup>1</sup> ( <del>Nx</del> 6.25 in dry weight basis) <sup>1</sup>	CXS 333-2019 (2020)	<b>ISO 1871</b>	Titrimetry (Kjeldahl digestion) (Nx6,25)	CCPL	

Sorghum flour	Ash <sup>1</sup>	CXS 173-1989 (2019)	AOAC 923.03 / ISO 2171 <del>ICC 104/1</del>	Gravimetry <b>(incineration)</b>	I	CCCPL	OK
Sorghum flour	Colour	CXS 173-1989 (2019)	<i>Modern Cereal Chemistry</i> , 6th Ed., D.W. Kent-Jones and A.J. Amos (Ed.), pp. 605-612, Food Trade Press Ltd. London. 1969.	Colorimetry <del>using</del> (specific colour grader)	IV	CCCPL	Colour-grading equipment used mantener como tipo IV.
Sorghum flour	Fat, crude <sup>1</sup>	CXS 173-1989 (2019)	AOAC 945.38F; <b>and</b> 920.39C	Gravimetry (ether extraction)	I	CCCPL	Sin comentarios
Sorghum flour	Fiber, crude <sup>1</sup>	CXS 173-1989 (2019)	ICC 113 / ISO 6541	Gravimetry <b>(separation, incineration)</b>	I	CCCPL	Ok
Sorghum flour	Moisture	CXS 173-1989 (2019)	ISO 712 / ICC 110/1	Gravimetry <b>(oven drying)</b>	I	CCCPL	Sin comentarios
Sorghum flour	Particle size (granularity)	CXS 173-1989 (2019)	AOAC 965.22 <b>and ISO 3310-1</b>	Gravimetry (Sieving)	I	CCCPL	De acuerdo son métodos complementarios, se debe indicar el principio de gravimetría tras el tamizaje.
Sorghum flour	Protein <sup>1</sup>	CXS 173-1989 (2019)	ICC 105/ <del>12</del>	Titrimetry (Kjeldahl digestion) (Nx 6,25)	I	CCCPL	OK
Sorghum flour	Protein <sup>1</sup> ( <del>Nx 6.25</del> )	CXS 173-1989 (2019)	ISO 1871	Titrimetry (Kjeldahl digestion) (Nx 6,25)	† II	CCCPL	Mantener el ISO 1871 como tipo II.
Sorghum flour	Tannins <sup>1</sup>	CXS 173-1989 (2019)	ISO 9648	Spectrophotometry (UV/Visible)	I	CCCPL	Puede igualmente ser usado en harina, por lo cual se debería mantener como tipo III.
Sorghum grains	Ash <sup>1</sup>	CXS 172-1989 (2019)	AOAC 923.03 / ISO 2171 <del>ICC 104/1</del>	Gravimetry <b>(incineration)</b>	I	CCCPL	Ok
Sorghum grains	Fat, crude <sup>1</sup>	CXS 172-1989 (2019)	AOAC 945.38F, <b>and</b> 920.39C	Gravimetry (ether extraction)	I	CCCPL	Ok
Sorghum grains	Moisture	CXS 172-1989 (2019)	ISO 6540	Gravimetry <b>(oven drying)</b>	I	CCCPL	Ok
Sorghum grains	Protein <sup>1</sup>	CXS 172-1989 (2019)	ICC 105/ <del>12</del>	Titrimetry (Kjeldahl digestion) (Nx6,25)	I	CCCPL	Incluir el factor de conversión de proteínas
Sorghum grains	Protein <sup>1</sup> ( <del>Nx 6.25</del> )	CXS 172-1989 (2019)	ISO 1871	Titrimetry, Kjeldahl digestion	† II	CCCPL	Mantener el ISO 1871 como tipo II.
Sorghum grains	Tannins <sup>1</sup>	CXS 172-1989 (2019)	ISO 9648	Spectrophotometry UV/Visible)	I	CCCPL	Se sugiere mejorar la descripción del principio de medición
Soy protein products	Ash <sup>1</sup>	CXS 175-1989 (2019)	AOAC 923.03 / ISO 2171: (Method B)	Gravimetry <b>(incineration)</b>	I	CCVP	Ok

Soy protein products	Fibre, crude <sup>1</sup>	CXS 175-1989 (2019)	ISO 5498	Gravimetry (separation) <b>(extract ion and filtration)</b>	I	CCVP	Ok
Soy protein products	Moisture	CXS 175-1989 (2019)	AOAC 925.09	Gravimetry (vacuum oven)	I	CCVP	Ok
Vegetable protein products	Ash <sup>1</sup>	CXS 174-1989 (2019)	AOAC 923.03 / ISO 2171 (Method B)	Gravimetry <b>(incineration)</b>	I	CCVP	Ok
Vegetable protein products	Fibre, crude <sup>1</sup>	CXS 174-1989 (2019)	AACC 32-17 32-10.01	<b>Gravimetry</b> (Ceramic filter)	I	CCVP	Ok
Vegetable protein products	Moisture	CXS 174-1989 (2019)	AOAC 925.09	Gravimetry (vacuum oven)	I	CCVP	Ok
Wheat flour	Ash	CXS 152-1985 (2019)	AOAC 923.03 / ISO 2171 ICC 104/1	Gravimetry <b>(incineration)</b>	I	CCCPL	Ok
Wheat flour	Fat acidity <sup>1</sup>	CXS 152-1985 (2019)	<del>AOAC 939.05</del> <b>ISO 7305</b>	Titrimetry <b>(extraction)</b>	I	CCCPL	Ok
Wheat flour	Moisture	CXS 152-1985 (2019)	ISO 712: / ICC 110/1	Gravimetry <b>(oven drying)</b>	I	CCCPL	Ok
Wheat flour	Particle size (granularity)	CXS 152-1985 (2019)	AOAC 965.22 <b>and ISO 3310-1</b>	Gravimetry (Sieving)	I	CCCPL	De acuerdo son métodos complementarios, se debe indicar el principio de gravimetría tras el tamizaje.
Wheat flour	Protein <sup>1</sup>	CXS 152-1985 (2019)	ICC 105/ <del>±2</del>	Titrimetry (Kjeldahl)	I	CCCPL	Mantener el factor de proteínas. Ok el cambio de referencia del método.
Wheat flour	Protein <sup>1</sup> <del>(Nx5,7)</del>	CXS 152-1985 (2019)	ISO 1871	Titrimetry Kjeldahl digestion) (Nx5,7)	↓ II o	CCCPL	ISO 1871 Type II o III
Wheat protein products including wheat gluten	Fiber, crude <sup>1</sup>	CXS 163-1987 (2001)	AOAC 962.09	<del>Ceramic fibre</del> <b>ceramic fibre filtration</b>	I	CCVP	Ok
<b>Wheat protein products including wheat gluten</b>	<b>Moisture</b>	<b>CXS 163-1987 (2001)</b>	<b>AOAC 925.09</b>	<b>Gravimetry (vacuum oven)</b>	I	<b>CCVP</b>	Ok
Wheat protein products including wheat gluten	Crude Protein <sup>1</sup> ; excluding added vitamins, minerals, amino acids and optional	CXS 163-1987 (2001)	Vital wheat gluten and devitalized wheat gluten <b>AOAC 979.09</b> (wheat protein in grain <del>Nx5,7</del> ) <b>ISO 20483</b> Solubilized wheat protein	Titrimetry (Kjeldahl digestion) (Nx5,7) Kjeldahl	↓ II	CCVP	mantener el factor de Nx en el principio, no eliminar del CXS 234.

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ingredients	AOAC 920.87 (wheat protein in flour N x 5.7) <b>ISO 20483</b>	Titrimetry (Kjeldahl digestion) (wheat protein in flour N x 5.7) (Nx5,7)	Se está de acuerdo con incluir pero no eliminando el AOAC 979.09
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Wheat protein products including wheat gluten	Ash <sup>1</sup>	CXS 163-1987 (2001)	AOAC 923.03 / ISO 2171: <del>method B</del>	Gravimetry ( <b>incineration</b> )	I	CCVP	Ok
Whole and decorticated pearl millet grains	Ash <sup>1</sup>	CXS 169-1989 (2019)	AOAC 923.03 / <b>ISO 2171</b>	Gravimetry ( <b>incineration</b> )	I	CCCPL	Ok
Whole and decorticated pearl millet grains	Fat, crude <sup>1</sup>	CXS 169-1989 (2019)	AOAC 945.38F; <b>and</b> 920.39C	Gravimetry (ether extraction)	I	CCCPL	Ok
Whole and decorticated pearl millet grains	Fibre, crude <sup>1</sup>	CXS 169-1989 (2019)	ISO 5498 ( <del>B-5 separation</del> )	Gravimetry ( <b>filtration through filter paper</b> )	I	CCCPL	OK
Whole and decorticated pearl millet grains	Moisture	CXS 169-1989 (2019)	ISO 712 / ICC 110/1	Gravimetry ( <b>oven drying</b> )	I	CCCPL	OK
Whole and decorticated pearl millet grains	Protein <sup>1</sup>	CXS 169-1989 (2019)	<b>AOAC 920.87</b> <b>ISO 20483</b> -	Titrimetry (Kjeldahl digestion) ( <b>Nx?</b> )	II	CCCPL	Mantener ambos métodos con distinta tipificación
Whole maize (corn) meal	Ash <sup>1</sup>	CXS 154-1985 (2019)	AOAC 923.03 / ISO 2171 <del>ICC 104/1</del>	Gravimetry ( <b>incineration</b> )	I	CCCPL	Ok
Whole maize (corn)	<del>Crude Fat,</del>	CXS 154-1985 (2019)	AOAC 945.38F; <b>and</b> <del>920.39C</del>	Gravimetry (ether extraction)	I-	CCCPL	OK
Whole maize (corn) meal	Moisture	CXS 154-1985 (2019)	<del>ISO 712</del> ICC 110/1 / <b>ISO 6540</b> <b>ISO 712</b>	Gravimetry ( <b>oven drying</b> )	I	CCCPL	Mantener el ISO 712 como método tipo II
Whole maize (corn) meal	Particle size (granularity)	CXS 154-1985 (2019)	AOAC 965.22 <b>and ISO 3310-1</b> -	Sieving	I	CCCPL	Sin comentarios
Whole maize (corn) meal	Protein <sup>1-</sup>	CXS 154-1985 (2019)	ICC 105/ <del>12</del>	Titrimetry (Kjeldahl digestion) ( <b>Nx 6,25</b> )	I	CCCPL	Incluir el factor de Nx
<b>Gari</b>	<b>Total acidity<sup>1</sup></b>	<b>CXS 151-1989 (2019)</b>	<b>ISO/DP 7305 AOAC 1975-14.064</b> <b>- 14.065 (AOAC 939.05)</b>	<b>Titrimetry (ethanol extraction)</b>	I	<b>CCCPL</b>	<b>sin comentarios</b>
Gari	Crude fiber <sup>1</sup>	CXS 151-1989 (2019)	ISO 5498	Gravimetry(separation)	I	CCCPL	Ok
Gari	Ash <sup>1</sup>	CXS 151-1989 (2019)	ISO 2171	Gravimetry(incineration)	I	CCCPL	Ok
Gari	Moisture	CXS 151-1989 (2019)	<del>ICC 109/1</del> ISO 712	Gravimetry ( <b>oven drying</b> )		CCCPL	Ok
Edible Cassava flour	Moisture	CXS 176-1989 (2019)	ISO 712	Gravimetry ( <b>oven drying</b> )	I	CCCPL	OK ISO 712 como tipo I
Edible Cassava flour	Crude fiber	CXS 176-1989 (2019)	ISO 5498 ( <del>B-5 separation</del> )	Gravimetry (separation)	I	CCCPL	Ok
Edible Cassava flour	Ash <sup>1</sup>	CXS 176-1989 (2019)	ISO 2171	Gravimetry (incineration)	I	CCCPL	Ok

<sup>1</sup> A correction for moisture content is frequently required for reporting results of the proximate methods (i.e., ash, protein and fat). No moisture methods have been identified to correspond with the proximate methods in the current version of CXS 234. Moisture methods should correspond to those endorsed for the matrices being tested.



## APPENDIX II

## Group 2. Methods requiring additional follow up action

## Cereals, Pulses and Legumes and Derived Products

Producto	Disposición	Codex Standard	Método	Principio	Tipo	Comate	Comentarios Chile
Soy protein products	Fat	CXS 175-1989 (2019)	CAC/RM 55 - Method 1	Gravimetry (extraction)	I	CCVP	Ok
Soy protein products	<u>Protein; excluding added vitamins, minerals, amino acids and food additives</u>	CXS 175-1989 (2019)	AOAC 955.04D ( <del>using factor 6.25</del> )	Titrimetry (Kjeldahl digestion) (Nx 6,25)	I	CCVP	Mantener el factor de Nx en el principio
Vegetable protein products	Fat	CXS 174-1989 (2019)	CAC/RM 55 - Method 1	Gravimetry (extraction)	I	CCVP	Mantener método
Vegetable protein products	<u>Crude Protein; excluding added vitamins, minerals, amino acids and food additives</u>	CXS 174-1989 (2019)	AOAC 955.04D ( <del>using factor 6.25</del> )	Titrimetry (Kjeldahl digestion) (Nx 6,25)	# I	CCVP	Mantener el factor en el principio
Gari	<u>Granularity Particle size (classification)</u>	CXS 151-1989 (2019)	ISO 2591-1	Sieving	I	CCCPL	Mantener el método
Edible Cassava flour	<u>Granularity Particle size</u>	CXS 176-1989 (2019)	ISO 2591-1	Sieving	I	CCCPL	Sin comentarios,

## Appendix III

## Methods proposed by SDOs as updates and/or replacements for methods currently in CXS 234

## Cereals, Pulses and Legumes and Derived Products

Commodity	Provision	Codex Standard	Original Method entry	Original Principle	Type	Committee	Comments Chile
Degermed maize (corn) meal and maize (corn) grits	Ash <sup>1</sup>	CXS 155-1985 (2019)	AOAC 923.03 / ISO 2171 <del>ICC Method No 104/1</del>	Gravimetry <b>(incineration)</b>	I	CCCPL	sin comentarios
Degermed maize (corn) meal and maize (corn) grits	Fat, crude <sup>1</sup>	CXS 155-1985 (2019)	AOAC 945.38F; <del>and</del> 920.39C	Gravimetry (ether extraction)	I	CCCPL	sin comentarios
Degermed maize (corn) meal and maize (corn) grits	Moisture	CXS 155-1985 (2019)	<del>ISO 712</del> <del>ICC Method No 110/1</del> ICC 110/1	Gravimetry <b>(oven drying)</b>	I	CCCPL	sin comentarios
Degermed maize (corn) meal and maize (corn) grits	Protein <sup>1</sup>	CXS 155-1985 (2019)	ICC 105/ <del>12</del>	Titrimetry (Kjeldahl digestion) <b>(Nx 6,25)</b>	I	CCCPL	Colocar factor de proteínas
Durum wheat semolina and durum wheat flour	Ash <sup>1</sup> ( <del>semolina</del> )	CXS 178-1991 (2019)	AOAC 923.03 / ISO 2171	Gravimetry <b>(incineration)</b>	I	CCCPL	sin comentarios
Durum wheat semolina and durum wheat flour	Protein <sup>1</sup> <b>(Nx 5,7)</b>	CXS 178-1991 (2019)	ICC 105/ <del>12</del>	Titrimetry (Kjeldahl digestion) <b>(Nx5,7)</b>	I	CCCPL	Colocar factor de proteínas
Pearl millet flour	Ash <sup>1</sup>	CXS 170-1989 (2019)	AOAC 923.03 / ISO 2171	Gravimetry <b>(incineration)</b>	I	CCCPL	sin comentarios
Pearl millet flour	Fat, crude <sup>1</sup>	CXS 170-1989 (2019)	AOAC 945.38F; <del>and</del> 920.39C	Gravimetry (ether extraction)	I	CCCPL	sin comentarios

## Cereals, Pulses and Legumes and Derived Products

Sorghum flour	Ash <sup>1</sup> -	CXS 173-1989 (2019)	AOAC 923.03 / ISO 2171 -	Gravimetry <b>(incineration)</b>	I	CCCPL	<i>sin comentarios</i>
Sorghum flour	Fat, crude <sup>1</sup>	CXS 173-1989 (2019)	AOAC 945.38F, <b>and</b> 920.39C	Gravimetry (ether extraction)	I	CCCPL	<i>sin comentarios</i>
Sorghum flour	Protein <sup>1</sup> ( <del>Nx</del> - <u>6.25</u> )	CXS 173-1989 (2019)	ICC 105/ <del>12</del> -	Titrimetry (Kjeldahl digestion) ( <del>Nx</del> 6,25)	I	CCCPL	<i>Colocar el factor en el principio</i>
Sorghum grains	Ash <sup>1</sup> -	CXS 172-1989 (2019)	AOAC 923.03 / ISO 2171 <del>ICC 104/1</del>	Gravimetry (incineration)	I	CCCPL	<i>sin comentarios</i>
Sorghum grains	Fat, crude <sup>1</sup>	CXS 172-1989 (2019)	AOAC 945.38F, <b>and</b> 920.39C	Gravimetry (ether extraction)	I	CCCPL	<i>sin comentarios</i>
Sorghum grains	Protein <sup>1</sup> ( <del>Nx</del> - <u>6.25</u> )	CXS 172-1989 (2019)	ICC 105/ <del>12</del>	Titrimetry (Kjeldahl digestion) ( <del>Nx</del> 6,25)	I	CCCPL	<i>Mantener el factor de proteínas en los principios</i>
Soy protein products	Ash <sup>1</sup> -	CXS 175-1989 (2019)	AOAC 923.03 / ISO 2171: (Method B) -	Gravimetry <b>(incineration)</b>	I	CCVP	<i>sin comentarios</i>
Soy protein products	Moisture	CXS 175-1989 (2019)	AOAC 925.09	Gravimetry (vacuum oven)	I	CCVP	<i>sin comentarios</i>
Vegetable protein products	Moisture	CXS 174-1989 (2019)	AOAC 925.09	Gravimetry (vacuum oven)	I	CCVP	<i>sin comentarios</i>
Wheat flour	Ash	CXS 152-1985 (2019)	AOAC 923.03 / ISO 2171 <del>ICC 104/1</del>	Gravimetry <b>(incineration)</b>	I	CCCPL	<i>sin comentarios</i>
Wheat flour	Protein <sup>1</sup> ( <del>Nx</del> 5.7)	CXS 152-1985 (2019)	ICC 105/ <u>12</u>	Titrimetry (Kjeldahl digestion) ( <del>Nx</del> 5,7)	I	CCCPL	<i>Colocar factor en el principio</i>
Wheat protein products including wheat gluten	Ash <sup>1</sup>	CXS 163-1987 (2001)	AOAC 923.03 / ISO 2171	Gravimetry <b>(incineration)</b>	I	CCVP	<i>sin comentarios</i>
Wheat protein products including	Moisture	CXS 163-1987 (2001)	AOAC 925.09	Gravimetry <b>(vacuum oven)</b>	I	CCVP	<i>sin comentarios</i>
Whole and decorticated pearl	Ash <sup>1</sup> -	CXS 169-1989 (2019)	AOAC 923.03 / ISO 2171 -	Gravimetry <b>(incineration)</b>	I	CCCPL	<i>sin comentarios</i>
Whole and decorticated pearl	Fat, crude <sup>1</sup>	CXS 169-1989 (2019)	AOAC 945.38F; <b>and</b> 920.39C	Gravimetry (ether extraction)	I	CCCPL	<i>sin comentarios</i>
Whole maize (corn) meal	Ash <sup>1</sup>	CXS 154-1985 (2019)	AOAC 923.03 / ISO 2171	Gravimetry <b>(incineration)</b>	I	CCCPL	<i>sin comentarios</i>
Whole maize (corn) meal	Crude Fat, crude <sup>1</sup>	CXS 154-1985 (2019)	AOAC 945.38F; <b>and</b> 920.39C	Gravimetry (ether extraction)	I	CCCPL	<i>sin comentarios</i>
Whole maize (corn) meal	Moisture	CXS 154-1985 (2019)	ICC 110/1	Gravimetry (oven drying)	I	CCCPL	<i>sin comentarios</i>
Whole maize (corn) meal	Protein <sup>1</sup> ( <del>Nx</del> - <u>6.25</u> )	CXS 154-1985 (2019)	ICC 105/ <del>12</del>	Titrimetry, (†) Kjeldahl digestion) ( <del>Nx</del> 6,25)	I	CCCPL	<i>Mantener el factor de conversión de proteínas en el principio</i>

<sup>1</sup>-A correction for moisture content is frequently required for reporting results of the proximate methods (i.e., ash, protein and fat). No moisture methods have been identified to correspond with the proximate methods in

## Colombia

**Documento o Tema:** Solicitud de comentarios sobre el paquete viable de cereales, legumbres y leguminosas: revisión de CXS 234 **CL 2023/13/OCS- MAS APENDICE I CX/ MAS 23/42/6**

Los cambios propuestos se indican con adiciones en **texto subrayado y en negrita** o con supresiones en ~~texto tachado~~.

APARTES	PROPUESTA DE POSICIÓN	OBSERVACIONES O COMENTARIOS	CATEGORÍA DE <sup>1</sup> COMENTARIO			
			E	S	TE	TR
VER A CONTINUACION CUADROS ANEXOS CON LAS PROPUESTAS SUGERIDAS	<p>La Carta circular propone revisar la pertinencia o no de los cambios realizados por el GTe, para lo cual en su Sección FRUTAS Y “Frutas y Verduras Procesadas” como se muestra en Apéndice I de CX/MAS 23/42/6, o si debe disponerse que estos dos productos deban estar en líneas separadas</p> <p>Las adiciones de metodologías analíticas sugeridas se fundamentan en que el laboratorio Nacional de referencia sugiere que estas metodologías pueden ser empleadas como métodos de análisis alternativos en esas matrices de alimentos</p>			X		

<sup>1</sup> - “Editorial” (Editorial): Este tipo de comentario aclara o simplifica el texto sin cambiar el significado. Incluye correcciones ortográficas o gramaticales, sugerencias de palabras diferentes pero equivalentes y la simplificación de la estructura de la frase.

## Appendix I – Methods of Analysis for “Processed Fruits and Vegetables” commodity

Processed Fruits and Vegetables – Appendix I							COMENTARIOS COLOMBIA
Commodity	Provision	Method	Principle	Type	Standard	Comments	
Processed fruits and vegetables ( <a href="#">Jams</a> , <a href="#">Jellies</a> , <a href="#">Marmalades</a> , <a href="#">pickled cucumbers</a> , <a href="#">mango chutney</a> , <a href="#">Coconut Milk and Coconut Cream</a> )	Benzoic acid	<del>NMKL 124</del> AOAC 967.15	Liquid Chromatography	II	CXS 192	Benzoic acid falls under CXS  192 – Food Additives	Se sugiere incluir el principio así: Cromatografía líquida de alta eficiencia (HPLC) con detector de Diodos (DAD)
Processed fruits and vegetables ( <a href="#">Jams</a> , <a href="#">Jellies</a> , <a href="#">Marmalades</a> , <a href="#">pickled cucumbers</a> , <a href="#">mango chutney</a> , <a href="#">Coconut Milk and Coconut Cream</a> )	Benzoic acid	<del>NMKL 103; or</del> AOAC  983.16	Gas Chromatography	III	CXS 192	NMKL 103 withdrawn because of  the use of hazardous solvent	
Processed fruits and vegetables ( <a href="#">canned strawberries</a> , <a href="#">pickled cucumbers</a> , <a href="#">preserved tomatoes</a> , <a href="#">canned citrus fruits</a> , <a href="#">certain canned vegetables</a> )	Calcium	AOAC 968.31       EN 1134 (1994) Método IFU No. 33 (1984)	Complexometry/ Titrimetry  Absorción atómica por llama	II	CXS 192  CXS 62  CXS 115  CXS 13 CXS 254	Calcium firming agents listed in    CXS 192 – food additives	Se sugiere incluir el principio del método por espectrofotometría de absorción atómica de llama conforme a la referencia del método para esta clase de productos   Se sugiere incluir el método: FDA 4.4 Inductively Coupled Plasma-Atomic Emission Spectrometric Determination of Elements in Food Using Microwave Assisted Digestion (version 1.1);  Se sugiere incluir el método: UNE-EN 16943 Productos alimenticios Determinación de calcio, cobre, hierro, magnesio, manganeso, fósforo, potasio, sodio, azufre y zinc mediante ICP-OES.

					CXS 297		
Processed fruits and vegetables	Drained Weight	AOAC 968.30 (Codex General Method)	Sieving Gravimetry	I			
Processed fruits and vegetables	Fill of glass containers	<del>CAC/RM 46 (reference to "metal containers" deleted and refer to ISO 90-1 for determination of water capacity in metal containers)</del>	Weighing	I		CCMAS36 (2015) agreed to replace CAC/RM 46 with ISO 8106	
		<u>ISO 8106</u>					

Processed Fruits and Vegetables – Appendix I						
Commodity	Provision	Method	Principle	Type	Standard	Comments
<a href="#">Processed fruits and vegetables</a>	<a href="#">Fill of metal containers</a>	<a href="#">ISO 90-1</a>	<a href="#">Weighing</a>	I		
Processed fruits and vegetables ( <a href="#">Canned Fruits, Jams, Jellies and Marmalades, Mango Chutney, Canned Vegetables, Preserved Tomatoes, Table Olives, Pickled Cucumbers</a> )	Lead	AOAC 972.25 (Codex general method) AOAC 999.10	AAS (Flame absorption)	III	CXS 193	Codex general method type II for other commodities  Se sugiere incluir el Método AOAC 999.10  Se sugiere incluir el método: FDA 4.4 Inductively Coupled Plasma-Atomic Emission Spectrometric Determination of Elements in Food Using Microwave Assisted Digestion (version 1.1);  NMKL 186 Trace elements – As, Cd, Hg, Pb and other elements. Determination by ICP-MS after pressure digestion.  Se sugiere incluir el método: a 4.7 Inductively Coupled Plasma-Mass Spectrometric Determination of Arsenic, Cadmium, Chromium, Lead, Mercury, and Other Elements in Food Using Microwave Assisted Digestion (version 1.2).  Se sugiere incluir el método: AOAC Official Method 2015.01 Heavy Metals in Food Inductively Coupled Plasma- Mass Spectrometry
<a href="#">Processed fruits and vegetables</a>	<a href="#">Packaging medium Canned berry fruits (raspberry, strawberry)</a>	<a href="#">AOAC 932.12</a> <a href="#">ISO 2173</a>	<a href="#">Refractometry</a>	I		AOAC 932.12 and ISO 2173 both determine soluble solids which is already listed below. Recommend striking this row.
Processed fruits and Vegetables ( <a href="#">pickled cucumbers, table olives, processed tomato concentrates,</a> )	pH	ISO 1842	Potentiometry	IV	CXS 115 CXS 66 CXS 57 CXS 13	

<p><a href="#">preserved tomatoes, mango chutney, and aqueous coconut products</a> except canned bamboo shoots, pH determined by AOAC 981.12)</p>					<p>CXS 160 CXS 240</p>	
<p>Processed fruits and vegetables (<a href="#">pickled cucumbers, table olives, processed tomato concentrates, preserved tomatoes, mango chutney, and aqueous coconut products</a>)</p>	<p>PH</p>	<p>AOAC 981.12</p>	<p>Potentiometry</p>	<p>III</p>	<p>CXS 115 CXS 66 CXS 57 CXS 13 CXS 160 CXS 240</p>	



Processed Fruits and Vegetables – Appendix I						
Commodity	Provision	Method	Principle	Type	Standard	Comments
Processed fruits and vegetables ( <a href="#">pickled cucumbers</a> , <a href="#">table olives</a> , <a href="#">processed tomato concentrates</a> , <a href="#">preserved tomatoes</a> , <a href="#">mango chutney</a> , and <a href="#">aqueous coconut products</a> )	pH	NMKL 179	Potentiometry	II	CXS 115 CXS 66 CXS 57 CXS 13 CXS 160 CXS 240	
Processed fruits and vegetables ( <a href="#">pickled cucumbers</a> , <a href="#">processed tomato concentrates</a> , <a href="#">preserved tomatoes</a> , <a href="#">canned applesauce</a> , <a href="#">jams</a> , <a href="#">jellies</a> and <a href="#">marmalades</a> , <a href="#">mango chutney</a> , and <a href="#">certain canned fruit</a> )	Soluble solids	ISO 2173 <del>AOAC 932.12</del> ISO 2173:2003 (Método general del Codex para frutas y hortalizas elaboradas) AOAC, 932.14C	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 sugiere incluir la version de la ISO y el método AOAC 932.14C que corresponde al método general del codex para estos productos
Processed fruits and vegetables ( <a href="#">Jams</a> , <a href="#">Jellies</a> , <a href="#">Marmalades</a> , <a href="#">pickled cucumbers</a> )	Sorbates	<del>NMKL 103</del> / AOAC 983.16	Gas Chromatography	III	CXS 192	NMKL 103 withdrawn because of the use of hazardous solvent
Processed fruits and vegetables ( <a href="#">Jams</a> , <a href="#">Jellies</a> , <a href="#">Marmalades</a> , <a href="#">pickled cucumbers</a> )	Sorbates	NMKL 124	Liquid Chromatography	II	CXS 192	Sorbate falls under CXS 192 – Food Additives

Processed Fruits and Vegetables – Appendix I						
Commodity	Provision	Method	Principle	Type	Standard	Comments
Processed fruits and vegetables	Tin	AOAC 980.19 (Codex general method)	<a href="#">Flame Atomic Absorption SpectrophotometryAAS</a>	II	CXS 193	<p>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.</p> <p>Se sugiere incluir el método: NMKL 191 Tin (Sn). Determination in foods by inductively coupled plasma mass spectrometry (ICPMS)</p> <p>Se sugiere incluir el método: UNE-EN 15765 Productos alimenticios Determinación de Estaño (Sn) mediante espectrometría de masa de plasma inductivamente acoplada (ICP-MS) tras digestión a presión.</p>
Processed fruits and vegetables	Total solids	AOAC 920.151	Gravimetry	I		
Aqueous Coconut Products	Total Fats	ISO 1211   IDF 1	Gravimetry (Röse-Gottlieb)	I	CXS 240	Validated on cow, sheep, goat milk
Aqueous Coconut Products	Total solids	ISO 6731   IDF 21	Gravimetry	I	CXS 240	Validated on milk, cream, and evaporated milk

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
Aqueous Coconut Products	Moisture	ISO 6731   IDF 21	Calculation: Gravimetry	I	CXS 240	Validated on milk, cream, and evaporated milk
Canned Apple Sauce	Fill of <u>glass</u> containers	<del>CAC/RM 46* (for glass containers) (Codex general method for processed fruits and vegetables)</del> and <del>ISO 90-1 (for metal containers) (Codex general method for processed fruits and vegetables)</del> <u>ISO 8106</u>	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

Processed Fruits and Vegetables – Appendix I						
Commodity	Provision	Method	Principle	Type	Standard	Comments
<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	
Canned Apple Sauce	Soluble solids	<del>AOAC 932.12</del> 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
Canned green beans and wax beans	Tough Strings	CAC/RM 39	Stretching	I	CXS 297	
<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
Canned green peas	<del>Proper fill (in lieu of drained weight)</del> <u>Fill of metal containers</u>	<del>CAC/RM 45</del> <u>ISO 90-1</u>	<del>Pouring and measuring</del> <u>Weighing</u>	I	CXS 297	CCPFV 24 (2008) agreed to revoke CAC/RM 45
Canned green peas	Types of peas, distinguishing	CAC/RM 48	Visual inspection	I	CXS 297	
Canned mangoes	Syrup	AOAC 932.14C	Brix spindle method	I	CXS 319	Method is “solids in syrups”
Canned mushrooms	<del>Washed</del> <u>Drained weight</u>	<del>CAC/RM 44</del> <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
Canned palmito	Mineral impurities	ISO 762	Gravimetry	I	CXS 297	

Processed Fruits and Vegetables – Appendix I						
Commodity	Provision	Method	Principle	Type	Standard	Comments
Canned Stone Fruits	Drained weight	AOAC 968.30 <del>ISO:2173</del>	Gravimetry	I	CXS 242	ISO 2173 is a method for soluble solids, not drained weight. Wrong provision
Canned Stone Fruits	Soluble solids	<del>AOAC 932.14C</del> <u>ISO 2173</u>	Refractometry	I	CXS 242	Methods are not identical. Suggest retaining ISO method which contains more detailed procedures
Canned strawberries	Calcium	AOAC 968.31	Complexometric titrimetry	II	CXS 62	Validated for canned tomatoes, lima beans, potatoes
Canned strawberries	Mineral impurities	<del>AOAC 971.33</del> <u>ISO 762</u>	Gravimetry	I	CXS 62	AOAC 971.33 is acid-insoluble residue. Recommend replacing with ISO 762
Certain canned citrus fruits	Calcium	NMKL 153	<del>Flame</del> Atomic Absorption Spectrophotometry	II	CXS 254	Calcium firming agents listed in CXS 192 – food additives  Se sugiere incluir el método: FDA 4.4 Inductively Coupled Plasma-Atomic Emission Spectrometric Determination of Elements in Food Using Microwave Assisted Digestion (version 1.1);  Se sugiere incluir el método: UNE-EN 16943 Productos alimenticios Determinación de calcio, cobre, hierro, magnesio, manganeso, fósforo, potasio, sodio, azufre y zinc mediante ICP-OES.
Certain canned citrus fruits	Calcium	AOAC 968.31	Complexometry Titrimetry	III	CXS 254	Calcium firming agents listed in CXS 192 – food additives
<del>Certain Canned Vegetables (palmito)</del>	<del>Mineral impurities (sand)</del>	<del>AOAC 971.33</del> <del>ISO 762</del>	<del>Gravimetry</del>	I		Methods are not identical and AOAC 971.33 is acid-insoluble residue. Mineral impurities in canned palmito already listed above.
Citrus marmalade	Calcium	AOAC 968.31	Complexometric titrimetry	II	CXS 296	Calcium firming agents listed in CXS 192 – food additives
Dates	Identification of defects	Described in the Standard	Visual inspection	I	CXS 143	

Dates	Moisture	AOAC 934.06	Gravimetry (vacuum oven)	I	CXS 143	
Desiccated coconut	Total acidity of the extracted oil	<u>ISO 660</u>   <u>AOCS Cd 3d-63</u> <del>ISO 660 or AOCS Cd 3d-63</del>	Titrimetry	I	CXS 177	Changed method format to maintain consistency with previous decisions, i.e. named vegetable oils
Desiccated coconut	Ash	AOAC 950.49	Gravimetry	I	CXS 177	

Processed Fruits and Vegetables – Appendix I						
Commodity	Provision	Method	Principle	Type	Standard	Comments
Desiccated coconut	Extraneous vegetable matter	Described in the Standard	Counting extraneous material with the naked eye	IV	CXS 177	
Desiccated coconut	Moisture	AOAC 925.40	Gravimery (loss on drying)	I	CXS 177	
Desiccated coconut	Oil content	AOAC 948.22	Gravimetry	I	CXS 177	Titled “Fat (Crude)” in method title
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.
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.
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.
Jams (fruit preserves) and jellies	Fill of <u>Glass</u> Containers	<del>CAC/RM 46</del> <u>ISO 8106</u>	Weighing	I	CXS 296	CCMAS 36 (2015) agreed to replace CAC/RM 46 with ISO 8106
Jams (fruit preserves) and jellies	Soluble solids	ISO 2173 <del>AOAC 932.12</del>	Refractometry	I	CXS 296	Methods are not identical. Suggest retaining ISO method which contains more detailed procedures

Processed Fruits and Vegetables – Appendix I						
Commodity	Provision	Method	Principle	Type	Standard	Comments
Mango chutney	Ash insoluble in HCl	ISO 763	Gravimetry	I	CXS 160	
Pickled cucumbers	Acidity, total	AOAC 942.15	Titrimetry	I	CXS 115	
Pickled cucumbers	Drained weight	AOAC 968.30	Gravimetry	I	CXS 115	
Pickled cucumbers	Mineral impurities	<del>AOAC 971.33</del> <u>ISO 762</u>	Gravimetry	I	CXS 115	AOAC 971.33 is acid-insoluble residue. Recommend replacing with ISO 762
Pickled cucumbers	Salt in brine	AOAC 971.27 (Codex general method)	Potentiometry	II	CXS 115	
Pickled cucumbers	Volume fill by displacement	Described in the Standard	Displacement	I	CXS 115	
<u>Preserved tomatoes</u>	<u>Calcium</u>	<u>NMKL 153</u>  AOAC 968.31	<u>Flame Atomic Absorption Spectrophotometry</u>  <u>Volumetria</u>	<u>II</u>	CXS 13	Calcium firming agents listed in CXS 192 – food additives  Se sugiere adicionar el principio del método volumetria y el metodo general del codex AOAC 968.31  Se sugiere incluir el método: FDA 4.4 Inductively Coupled Plasma-Atomic Emission Spectrometric Determination of Elements in Food Using Microwave Assisted Digestion (version 1.1;  Se sugiere incluir el método: UNE-EN 16943 Productos alimenticios Determinación de calcio, cobre, hierro, magnesio, manganeso, fósforo, potasio, sodio, azufre y zinc mediante ICP-OES.
Preserved tomatoes	Calcium	AOAC 968.31	Complexometric titrimetry	III	CXS 13	Calcium firming agents listed in CXS 192 – food additives
<del>Preserved tomatoes</del>	<del>Calcium</del>	<del>NMKL 153</del>	<del>Atomic Absorption Spectrophotometry</del>	<del>II</del>		
Preserved tomatoes	<del>Minimum</del> Drained Weight	AOAC 968.30	Gravimetry (sieving) note: Use a No. 14 screen instead of '7/16' or No. 8	I	CXS 13	



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
Processed tomato concentrates	Lactic acid	<del>EN 2631</del> <u>EN 12631</u>	Enzymatic determination	II	CXS 57	Should be EN 12631. EN 2631 is "Evaluation of human exposure to whole-body vibration"
Processed tomato concentrates	Mineral impurities (sand)	<del>AOAC 971.33</del> <u>ISO 762</u>	Gravimetry	<del>IV</del> I	CXS 57	AOAC 971.33 is acid-insoluble residue. Recommend replacing with ISO 762

Processed Fruits and Vegetables – Appendix I						
Commodity	Provision	Method	Principle	Type	Standard	Comments
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.
<del>Processed tomato concentrates</del>	<del>Natural tomato soluble solids</del>	<del>AOAC 970.59</del>	<del>Refractometry</del>	I		Redundant of “Tomato soluble solids” below
Processed tomato concentrates	Sodium chloride	AOAC 971.27 (Codex general method)	Potentiometry	II	CXS 57	
Processed tomato concentrates	Tomato soluble solids	AOAC 970.59	Refractometry	I	CXS 57	
Raisins	Mineral impurities	<del>CAC/RM 51</del> <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
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?
Raisins	Moisture	AOAC 972.20	Electrical conductance	I	CXS 67	
Raisins	Sorbitol	AOAC 973.28	Gas chromatography	II	CXS 67	
Raisins	Sulphur dioxide	AOAC 963.20	Colorimetry	II	CXS 67	
Table olives	Drained weight	AOAC 968.30 (Codex general method for processed fruits and vegetables)	Sieving Gravimetry	I	CXS 66	

Processed Fruits and Vegetables – Appendix I						
Commodity	Provision	Method	Principle	Type	Standard	Comments
Table olives	Fill of <u>glass</u> containers	<del>CAC/RM 46* (for glass containers)</del> (Codex general method for processed fruits and vegetables) and ISO 90-1 (for metal containers) (Codex general method for processed fruits and vegetables) <u>ISO 8106</u>	Weighing	I	CXS 66	CCMAS 36 (2015) agreed to replace CAC/RM 46 with ISO 8106
<u>Table olives</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 66	
Table olives	pH of brine	NMKL 179 (Codex general method for processed fruits and vegetables)	Potentiometry	II	CXS 66	
Table olives	pH of brine	AOAC 981.12 (Codex general method for processed fruits and vegetables)		III	CXS 66	
Table olives	pH of brine	ISO 1842		IV	CXS 66	

Processed Fruits and Vegetables – Appendix I						
Commodity	Provision	Method	Principle	Type	Standard	Comments
Table olives	Salt in brine	AOAC 971.27   NMKL 178 (Codex general method)	Potentiometry	II	CXS 66	
Table olives	Lead	AOAC 999.11   NMKL 139 (Codex general method)	<u>Flame Atomic Absorption Spectrophotometry</u> <del>AAS (Flame absorption)</del>	II	CXS 66	<p>Se sugiere incluir el método: FDA 4.4 Inductively Coupled Plasma-Atomic Emission Spectrometric Determination of Elements in Food Using Microwave Assisted Digestion (version 1.1;</p> <p>NMKL 186 Trace elements – As, Cd, Hg, Pb and other elements. Determination by ICP-MS after pressure digestion.</p> <p>Se sugiere incluir el método: a 4.7 Inductively Coupled Plasma-Mass Spectrometric Determination of Arsenic, Cadmium, Chromium, Lead, Mercury, and Other Elements in Food Using Microwave Assisted Digestion (version 1.2.</p> <p>Se sugiere incluir el método: AOAC Official Method 2015.01 Heavy Metals in Food Inductively Coupled Plasma- Mass Spectrometry</p>
Table olives	Tin	NMKL 190   EN15764	<u>Flame Atomic Absorption Spectrophotometry</u> <del>AAS</del>	II	CXS 66	<p>Se sugiere incluir el método: NMKL 191 Tin (Sn). Determination in foods by inductively coupled plasma mass spectrometry (ICPMS)</p> <p>Se sugiere incluir el método: UNE-EN 15765 Productos alimenticios Determinación de Estaño (Sn) mediante espectrometría de masa de plasma inductivamente acoplada (ICP-MS) tras digestión a presión</p>

### Ghana

**POSITION 1:** Ghana do not support methods that require high temperature of 900°C for Ash determination.

**RATIONALE:** The determination of ash content at 900°C requires the use of expensive platinum dishes which are not readily availability. However, methods of analysis with temperature of 650°C has been found to be fit for purpose.

**POSITION 2:** Ghana supports the removal of AOAC 993.17 method which requires the use of hazardous reagents (benzene/chloroform) in Appendix 1.

**RATIONALE:** The method uses hazardous reagents (benzene/chloroform) for analysis and is not efficient in the determination of all aflatoxins.

**POSITION 3:** Ghana recommends that the following methods are retained for determination of moisture in certain pulses: ISO 665 and ISO 24557 in Appendix 1/Group 1

**RATIONALE:** ISO 665 method for moisture for certain pulses could not be substituted with ISO 24557 since the later has a scope that does not include soyabean.

**POSITION 4:** Ghana recommends replacing ISO712 with ISO 6540 which includes moisture determination of maize in Appendix 1/Group 1.

**RATIONALE:** The scope of ISO 712 does not cover for maize.

**POSITION 5:** Ghana supports the inclusion of ISO20483 to method for protein determination in degermed maize (corn) meal and maize (corn) grits, sorghum flour and wheat flour in addition to the ICC method in Appedix 1/Group 1.

**RATIONALE:** The ISO method uses the same principle as the ICC method and the required inputs are easily available and affordable for most member states laboratories.

**POSITION 6:** Ghana supports review of the methods under Appendix II and III at a future WG on methods endorsement and others where there was no consensus achieved.

**RATIONALE:** Review to reach consensus on suitable methods or requirements for appendix II. Methods listed under Appendix III for inclusion, should go through the set process for endorsement of methods as prescribed in the Codex procedural manual.

### Nigeria

Nigeria supports that the work on the Cereals, Pulses and Legumes workable package should continue at a future Working Group on methods endorsement.

**Peru****Comentario General:**

Perú ha examinado la CL 2023/13/OCS-MAS y está de acuerdo en ratificar los cambios propuestos a la norma CXS 234-1999, con algunas observaciones editoriales.

**Comentario(s) Específico(s):**

- a. Si pueden aprobar los métodos del Apéndice I de CX/MAS 23/42/5;

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

- b. Considerar "puntos para ulterior consideración" (párr. 21 de CX/MAS 23/42/5), es decir

- si los métodos de humedad deberían prescribirse en CXS 234, o si la identificación del requisito para el uso de un método de humedad específico para un producto commodity podría lograrse utilizando una nota a pie de página con una explicación para abordar el requisito. Se propuso introducir una nota a pie de página en el Apéndice I.

Perú está de acuerdo con la propuesta de la Nota 1: "A correction for moisture content is frequently required for reporting results of the proximate methods (i.e., ash, protein and fat). No moisture methods have been identified to correspond with the proximate methods in the current version of CXS 234. Moisture methods should correspond to those endorsed for the matrices being tested."

- cuál es la mejor manera de abordar las disposiciones en las que no se han podido encontrar métodos que sustituyan a los métodos identificados para su sustitución (Apéndice II de CX/MAS 23/42/5).

Perú está de acuerdo con retirar los métodos que no son aplicables a las matrices, se propone identificar otros métodos de matrices similares y solicitar a los órganos subsidiarios de Codex Alimentarius la realización de estudios de validación de los métodos identificados.

- la inclusión de orientaciones generales en lugar de un método prescrito, para permitir la clasificación de los productos (Apéndice II de CX/MAS 23/42/5).

- i. proporcionar orientación sobre el enfoque para identificar la necesidad de métodos de humedad enumerados para establecer otras disposiciones

Perú propone que durante la realización del CCMAS 42, se proponga la conformación de un nuevo GTE que aborde la revisión de los métodos indicados en el Apéndice II de CX/MAS 23/42/5.

- c. considerar si los métodos enumerados en el Apéndice II y el Apéndice III de CX/MAS 23/42/5 deberían revisarse en un futuro GT sobre ratificación de métodos.

Perú, esta de acuerdo en revisar en un grupo de trabajo por medios electrónicos, los métodos enumerados en los Apéndices II y III del CX/MAS 23/42/5.

N°	Sección/N° Párrafo del documento	Dice							Debe decir	Categoría de comentario <sup>2</sup>	Otros comentarios <sup>3</sup>
	Appendix I	<b>Cereals, Pulses and Legumes and Derived Products</b>									Peru está de acuerdo con la propuesta de cambio
		Commodity	Provision	Codex Standard	Method	Principle	Type	Committee	Comments		
		Certain pulses	Moisture	CXS 171-1989 (2019)	ISO 665 <u>ISO 24557 / AACC 44-17.01</u>	Gravimetry ( <u>oven drying</u> )	I	CCCPL			
		Degermed maize (corn) meal and maize (corn) grits	Ash <sup>1</sup>	CXS 155-1985 (2019)	AOAC 923.03 / ISO 2171 ICC Method No 104/1	Gravimetry ( <u>incineration</u> )	I	CCCPL	-	-	
		Degermed maize (corn) meal and maize (corn) grits	Fat, crude <sup>1</sup>	CXS 155-1985 (2019)	AOAC 945.38F; <u>and</u> 920.39C	Gravimetry (ether extraction)	I	CCCPL			
		Degermed maize (corn) meal and maize (corn) grits	Moisture	CXS 155-1985 (2019)	ISO 742 ICC Method No 110/4 ICC 110/1	Gravimetry ( <u>oven drying</u> )	I	CCCPL			
		Degermed maize (corn) meal and maize (corn) grits	Particle size (granularity)	CXS 155-1985 (2019)	AOAC 965.22 <u>and ISO 3310-1</u>	Sieving	I	CCCPL	-	-	
		Degermed maize (corn) meal and maize (corn) grits	Protein <sup>1</sup>	CXS 155-1985 (2019)	ICC Method No 105/4 <u>ICC 105/2</u>	Titrimetry (Kjeldahl digestion)	I	CCCPL			
		Durum wheat semolina and durum wheat flour	Ash <sup>1</sup> ( <del>semolina</del> )	CXS 178-1991 (2019)	AOAC 923.03 / ISO 2171	Gravimetry ( <u>incineration</u> )	I	CCCPL	-	-	

<sup>2</sup> Categorías de comentario: Editorial, Técnico, Sustancial, Traducción (ver anexo).

<sup>3</sup> Sustento Técnico de cambio /Comentario Específico

		<table border="1"> <tr> <td>Durum wheat semolina and durum wheat flour</td> <td>Moisture</td> <td>CXS 178-1991 (2019)</td> <td>ISO 712 / ICC 110/1</td> <td>Gravimetry (<b>oven drying</b>)</td> <td>I</td> <td>CCCPL</td> <td></td> </tr> <tr> <td>Durum wheat semolina and durum wheat flour</td> <td>Protein<sup>1</sup> (N x 5.7)</td> <td>CXS 178-1991 (2019)</td> <td>ICC 105/42</td> <td>Titrimetry (Kjeldahl digestion)</td> <td>I</td> <td>CCCPL</td> <td>Suggest that N factor be prescribed in commodity standards if internationally agreed, but not in CXS 234. N methods are only validated for N content</td> </tr> </table>	Durum wheat semolina and durum wheat flour	Moisture	CXS 178-1991 (2019)	ISO 712 / ICC 110/1	Gravimetry ( <b>oven drying</b> )	I	CCCPL		Durum wheat semolina and durum wheat flour	Protein <sup>1</sup> (N x 5.7)	CXS 178-1991 (2019)	ICC 105/42	Titrimetry (Kjeldahl digestion)	I	CCCPL	Suggest that N factor be prescribed in commodity standards if internationally agreed, but not in CXS 234. N methods are only validated for N content	-	-	Perú consulta si el método ICC 105 indica el uso de factores de conversión de proteína, de acuerdo con la matriz
Durum wheat semolina and durum wheat flour	Moisture	CXS 178-1991 (2019)	ISO 712 / ICC 110/1	Gravimetry ( <b>oven drying</b> )	I	CCCPL															
Durum wheat semolina and durum wheat flour	Protein <sup>1</sup> (N x 5.7)	CXS 178-1991 (2019)	ICC 105/42	Titrimetry (Kjeldahl digestion)	I	CCCPL	Suggest that N factor be prescribed in commodity standards if internationally agreed, but not in CXS 234. N methods are only validated for N content														
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Instant Noodles	Moisture	CXS 249-2006 (2019)	described in the standard	Gravimetry ( <b>oven drying</b> )	I	CCCPL															
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									propuesta de cambio			
		(Cereals, shell-fruits and derived products (including peanuts))										
		Peanuts (intended for further processing)	Aflatoxins, total	<del>CXS 200-1995 (2019)</del> <b>CXS 193-1995 (2019)</b>	AOAC 979.18	<b>IAC</b> (Holaday-Velasco minicolumn)	<b>III IV</b>	CCCPL/CCCF	Qualitative/ semi-quantitative screening method; does not meet performance criteria in Procedural Manual; <b>recommend removal</b>	-	-	Perú está de acuerdo con la propuesta de cambio
		Pearl millet flour	Ash <sup>1</sup>	CXS 170-1989 (2019)	AOAC 923.03 / <b>ISO 2171</b>	Gravimetry ( <b>incineration</b> )	I	CCCPL		-	-	Perú está de acuerdo con la propuesta de cambio
		Pearl millet flour	Colour	CXS 170-1989 (2019)	<i>Modern Cereal Chemistry</i> , 6th Ed., D.W. Kent-Jones and A.J. Amos (Ed.), pp. 605-612, Food Trade Press Ltd, London, 1969.	Colorimetry using (specific colour grader)	IV	CCCPL	Colour-grading equipment used in method is no longer available, possible use of other item capable of results of the style of the original; sample is affected by bleach and method requires benzene; there does not appear to be a conversion factor from Kent-Jones units to the more commonly used CIELab color space, making it difficult to determine whether or not the products comply with the limit/range listed in the Standard. <b>reconsideration of provision/method suggested by reviewers</b>	-	-	Nos abstenemos de comentar esta propuesta
		Pearl millet flour	Fat, crude <sup>1</sup>	CXS 170-1989 (2019)	AOAC 945.38F; <b>and</b> 920.39C	Gravimetry (ether extraction)	I	CCCPL		-	-	Perú está de acuerdo con la propuesta de cambio
		Pearl millet flour	Fibre, crude <sup>1</sup>	CXS 170-1989 (2019)	ISO 5498 ( <b>B.5 Separation</b> )	Gravimetry ( <b>extraction and filtration</b> )	I	CCCPL		-	-	Perú está de acuerdo con la propuesta de cambio
		Pearl millet flour	Moisture	CXS 170-1989 (2019)	ISO 712 / ICC 110/1	Gravimetry ( <b>oven drying</b> )	I	CCCPL		-	-	Perú está de acuerdo con la

									propuesta de cambio			
		Pearl millet flour	Protein <sup>1</sup>	CXS 170-1989 (2019)	<del>AOAC 920.87</del> <b>ISO 20483</b>	Titrimetry (Kjeldahl digestion)	I	CCCPL			Perú está de acuerdo con la propuesta de cambio	
		Quinoa	Moisture content	CXS 333-2019 (2020)	ISO 712 <sup>1</sup> AACCI 44-15.02	Gravimetry <b>(oven drying)</b>	I	CCCPL	-	-		
		Quinoa	Protein <sup>1</sup> (N x 6.25 in dry weight basis) <sup>1</sup>	CXS 333-2019 (2020)	<b>ISO 20483</b> -ISO 1874	Titrimetry (Kjeldahl digestion)	<del>IV</del> !	CCCPL	Suggest that N factor be prescribed in commodity standards if internationally agreed, but not in CXS 234.	-	-	Perú está de acuerdo con la propuesta de cambio
		Sorghum flour	Ash <sup>1</sup>	CXS 173-1989 (2019)	AOAC 923.03 / ISO 2171 ICC 404/4	Gravimetry <b>(incineration)</b>	I	CCCPL			Perú está de acuerdo con la propuesta de cambio	
		Sorghum flour	Colour	CXS 173-1989 (2019)	<i>Modern Cereal Chemistry</i> , 6th Ed., D.W. Kent-Jones and A.J. Amos (Ed.), pp. 605-612, Food Trade Press Ltd, London, 1969.	Colorimetry using (specific colour grader)	IV	CCCPL	Colour-grading equipment used in method is no longer available, possible use of other item capable of results of the <i>style</i> of the original; sample is affected by bleach and method requires benzene; there does not appear to be a conversion factor from Kent-Jones units to the more commonly used CIELab color space, making it difficult to determine whether or not the products comply with the limit/range listed in the Standard. <b>reconsideration of provision/method suggested by reviewers</b>	-	-	Nos abstenemos de comentar esta propuesta
		Sorghum flour	Fat, crude <sup>1</sup>	CXS 173-1989 (2019)	AOAC 945.38F; <b>and</b> 920.39C	Gravimetry (ether extraction)	I	CCCPL			Perú está de acuerdo con la propuesta de cambio	

		Sorghum flour	Fibre, crude <sup>1</sup>	CXS 173-1989 (2019)	ICC 113 / ISO 6541	Gravimetry <b>(separation, incineration)</b>	I	CCCPL	Difference in crucible type (ICC 113 = quartz or glass, ISO 6541 = silica), same reagents/steps	-	-	Perú está de acuerdo con la propuesta de cambio
		Sorghum flour	Moisture	CXS 173-1989 (2019)	ISO 712 / ICC 110/1	Gravimetry <b>(oven drying)</b>	I	CCCPL		-	-	Perú está de acuerdo con la propuesta de cambio
		Sorghum grains	Protein <sup>1</sup>	CXS 172-1989 (2019)	ICC 105/42	Titrimetry (Kjeldahl digestion)	I	CCCPL		-	-	Perú está de acuerdo con la propuesta de cambio
		Sorghum grains	Protein <sup>1</sup> (N x 6.25)	CXS 172-1989 (2019)	ISO 1871	Titrimetry, Kjeldahl digestion	I	CCCPL	ISO 1871 Type IV listed in CXS-172, not CXS 234, <b>review of ICC 105/2 completed in 2021/22 and accepted</b>	-	-	Perú está de acuerdo con la propuesta de cambio
		Sorghum grains	Tannins <sup>1</sup>	CXS 172-1989 (2019)	ISO 9648	Spectrophotometry	I	CCCPL		-	-	Perú está de acuerdo con la propuesta de cambio
		Soy protein products	Ash <sup>1</sup>	CXS 175-1989 (2019)	AOAC 923.03 / ISO 2171-(Method B)	Gravimetry <b>(incineration)</b>	I	CCVP		-	-	Perú está de acuerdo con la propuesta de cambio
		Soy protein products	Fibre, crude <sup>1</sup>	CXS 175-1989 (2019)	ISO 5498	Gravimetry <b>(separation)(extract ion and filtration)</b>	I	CCVP		-	-	Perú está de acuerdo con la propuesta de cambio
		Soy protein products	Moisture	CXS 175-1989 (2019)	AOAC 925.09	Gravimetry (vacuum oven)	I	CCVP		-	-	Perú está de acuerdo con la propuesta de cambio
		Vegetable protein products	Ash <sup>1</sup>	CXS 174-1989 (2019)	AOAC 923.03 / ISO 2171 <b>(Method B)</b>	Gravimetry <b>(incineration)</b>	I	CCVP		-	-	Perú está de acuerdo con la propuesta de cambio
		Vegetable protein products	Fibre, crude <sup>1</sup>	CXS 174-1989 (2019)	AACC 32-47 32-10.01	<b>Gravimetry</b> (Ceramic filter filtration)	I	CCVP		-	-	Perú está de acuerdo con la propuesta de cambio
		Vegetable protein products	Moisture	CXS 174-1989 (2019)	AOAC 925.09	Gravimetry (vacuum oven)	I	CCVP		-	-	Perú está de acuerdo con la propuesta de cambio
		Wheat flour	Ash	CXS 152-1985 (2019)	AOAC 923.03 / ISO 2171 ICC 404/1	Gravimetry <b>(incineration)</b>	I	CCCPL		-	-	Perú está de acuerdo con la propuesta de cambio
		Wheat flour	Fat acidity <sup>1</sup>	CXS 152-1985 (2019)	AOAC 939.05 <b>ISO 7305</b>	Titrimetry <b>(extraction)</b>	I	CCCPL		-	-	Perú está de acuerdo con la propuesta de cambio
		Wheat flour	Moisture	CXS 152-1985 (2019)	ISO 712: / ICC 110/1	Gravimetry <b>(oven drying)</b>	I	CCCPL		-	-	Perú está de acuerdo con la propuesta de cambio

		Wheat flour	Particle size (granularity)	CXS 152-1985 (2019)	AOAC 965.22 <b>and ISO 3310-1</b>	Sieving	I	CCCPL				Perú está de acuerdo con la propuesta de cambio
		Wheat flour	Protein <sup>1</sup>	CXS 152-1985 (2019)	ICC 105/42	Titrimetry (Kjeldahl digestion)	I	CCCPL	-	-		
		Wheat flour	Protein <sup>1</sup> (N x 5.7)	CXS 152-1985 (2019)	ISO 1871	Titrimetry (Kjeldahl digestion)	I	CCCPL	-	-	ISO 1871 Type IV listed in CXS-152, not CXS 234, review of ICC 105/2 completed in 2021/22 and accepted	Perú está de acuerdo con la propuesta de cambio
		Wheat protein products including wheat gluten	Fibre, crude <sup>1</sup>	CXS 163-1987 (2001)	AOAC 962.09	Ceramic fibre <b>ceramic fibre filtration</b>	I	CCVP	-	-		Perú está de acuerdo con la propuesta de cambio
		<b>Wheat protein products including wheat gluten</b>	<b>Moisture</b>	<b>CXS 163-1987 (2001)</b>	<b>AOAC 925.09</b>	<b>Gravimetry (vacuum oven)</b>	I	<b>CCVP</b>	-	-		Perú está de acuerdo con la propuesta de cambio
		Wheat protein products including wheat gluten	Crude Protein <sup>1</sup> ; excluding added vitamins, minerals, amino acids and	CXS 163-1987 (2001)	Vital wheat gluten and devitalized wheat gluten AOAC 979.09 (wheat protein in grain N x 5.7) <b>ISO 20483</b>	Titrimetry (Kjeldahl digestion)	I	CCVP	-	-	Suggest that N factor be prescribed in commodity standards if internationally agreed, but not in CXS 234.	Perú está de acuerdo con la propuesta de cambio
		optional ingredients			Solubilized wheat protein AOAC 920.87 (wheat protein in flour N x 5.7) <b>ISO 20483</b>	Kjeldahl Titrimetry (Kjeldahl digestion) (wheat protein in flour N x 5.7)	I	CCVP	-	-		Perú está de acuerdo con la propuesta de cambio
		Wheat protein products including wheat gluten	Ash <sup>1</sup>	CXS 163-1987 (2001)	AOAC 923.03 / ISO 2171-method B	Gravimetry ( <b>incineration</b> )	I	CCVP				Perú está de acuerdo con la propuesta de cambio
		Whole and decorticated pearl millet grains	Ash <sup>1</sup>	CXS 169-1989 (2019)	AOAC 923.03 / <b>ISO 2171</b>	Gravimetry ( <b>incineration</b> )	I	CCCPL	-	-		Perú está de acuerdo con la propuesta de cambio
		Whole and decorticated pearl millet grains	Fat, crude <sup>1</sup>	CXS 169-1989 (2019)	AOAC 945.38F; <b>and</b> 920.39C	Gravimetry (ether extraction)	I	CCCPL				Perú está de acuerdo con la propuesta de cambio

		Whole and decorticated pearl millet grains	Fibre, crude <sup>1</sup>	CXS 169-1989 (2019)	ISO 5498 (B-5 separation)	Gravimetry ( <u>filtration through filter paper</u> )	I	CCCPL			Perú está de acuerdo con la propuesta de cambio	
		Whole and decorticated pearl millet grains	Moisture	CXS 169-1989 (2019)	ISO 712 / ICC 110/1	Gravimetry ( <u>oven drying</u> )	I	CCCPL	-	-		
		Whole and decorticated pearl millet grains	Protein <sup>1</sup>	CXS 169-1989 (2019)	AOAC 920.87 <u>ISO 20483</u>	Titrimetry (Kjeldahl digestion)	I	CCCPL				
		Whole maize (corn) meal	Ash <sup>1</sup>	CXS 154-1985 (2019)	AOAC 923.03 / ISO 2171 ICC 104/4	Gravimetry ( <u>incineration</u> )	I	CCCPL			Perú está de acuerdo con la propuesta de cambio	
		Whole maize (corn) meal	Crude Fat, crude <sup>1</sup>	CXS 154-1985 (2019)	AOAC 945.38F; <u>and</u> 920.39C	Gravimetry (ether extraction)	I	CCCPL	-	-		
		Whole maize (corn) meal	Moisture	CXS 154-1985 (2019)	ISO 712 ICC 110/1 / <u>ISO 6540</u>	Gravimetry ( <u>oven drying</u> )	I	CCCPL				
		Whole maize (corn) meal	Particle size (granularity)	CXS 154-1985 (2019)	AOAC 965.22 <u>and ISO 3310-1</u>	Sieving	I	CCCPL	AACC 66-20.01 not identical, uses a very specific nest of sieves and sieve apertures not consistent with the CXS 154 limits	-	-	Perú está de acuerdo con la propuesta de cambio
		Whole maize (corn) meal	Protein <sup>1</sup>	CXS 154-1985 (2019)	ICC 105/4 <sup>2</sup>	Titrimetry (Kjeldahl digestion)	I	CCCPL	-	-	Perú está de acuerdo con la propuesta	
		<u>Gari</u>	<u>Total acidity<sup>1</sup></u>	<u>CXS 151-1989 (2019)</u>	<u>ISO/DP 7305</u> <u>AOAC 1975-14.064 – 14.065 (AOAC 939.05)</u>	<u>Titrimetry (ethanol extraction)</u>	!	<u>CCCPL</u>	<u>AOAC 1975 14.064 – 14.065 is AOAC 939.05, using an earlier numbering system. AOAC 939.05 reviewed 2021/2022 and proposed for wheat flour, but was recommended for replacement due to hazardous chemical usage</u>	-	-	Perú está de acuerdo con la propuesta de cambio
		Gari	Crude fibre <sup>1</sup>	CXS 151-1989 (2019)	ISO 5498	Gravimetry (separation)	I	CCCPL	General method	-	-	Perú está de acuerdo con la propuesta de cambio
		Gari	Ash <sup>1</sup>	CXS 151-1989 (2019)	ISO 2171	Gravimetry (incineration)	I	CCCPL		-	-	Perú está de acuerdo con la

										propuesta de cambio		
		Edible Cassava flour	Moisture	CXS 176-1989 (2019)	ISO 712	Gravimetry ( <u>oven drying</u> )	I	CCCPL	No method given in CXS 176, listed in CXS 234: ISO 712 accepted for other commodities	-	-	Perú está de acuerdo con la propuesta de cambio
		Edible Cassava flour	Crude fibre	CXS 176-1989 (2019)	ISO 5498 (B-5 separation)	Gravimetry (separation)	I	CCCPL	General method	-	-	
		Edible Cassava flour	Ash <sup>1</sup>	CXS 176-1989 (2019)	ISO 2171	Gravimetry (incineration)	I	CCCPL		-	-	

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### **Anexo**

Existen **cuatro categorías de comentarios** establecidos por Codex Internacional:

- **Editorial**: Este tipo de comentario aclara o simplifica el texto sin cambiar el significado. Incluye correcciones ortográficas o gramaticales, sugerencias de palabras diferentes pero equivalentes y la simplificación de la estructura de la frase.
- **Sustancial**: Este tipo de comentario tiene en cuenta cambios conceptuales y la adición de nuevos aspectos o ideas. Incluye adiciones o ampliaciones así como cambios, reorganización del texto o eliminaciones que dan lugar a la alteración del contenido de una frase, párrafo o sección del proyecto de documento.
- **Técnico**: Este tipo de comentario tiene en cuenta correcciones científicas y ajustes técnicos. Su objetivo es aclarar y mejorar en mayor medida la norma y, en ocasiones, ajustarla a otras normas desde el punto de vista técnico.
- **Traducción**: Este tipo de comentario corrige puntos cuya traducción a otra versión lingüística del texto se considera inexacta.

### 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):

CX/MAS 23/42/5 Cereals, pulses and legumes workable package					
Group I Methods reviewed by CPL EWG with decisions					
Degermed maize (corn) meal and maize (corn) grits Pearl milled flour Sorghum grain Sorghum flour Whole and decorticated Pearl milled grains Whole maize (corn) meal	Fat, crude	ISO 11085			We agree with ISO recommendation
Degermed maize (corn) meal and maize (corn) grits	Moisture	ISO 6540			We agree with ISO recommendation
Wheat flour	Particle size (granularity)	AACC 2000.10 Method 66-20			
Degermed maize (corn) meal and maize (corn) grits Durum wheat semolina and durum wheat flour Sorghum flour Sorghum grains Wheat flour Whole maized (corn) meal	Protein	ISO 20483			We agree with ISO recommendation
Sorghum grains	Moisture	ISO 712			We suggest same method as Sorghum flour
Soy protein products Vegetable protein products	Moisture	AOCS BC 2-49			
Peanuts (raw, intended for further processing)	Aflatoxins total	Performance numerical criteria			We suggest performance numerical criteria for this provision
Grupo II Methods requiring additional follow up action					



Soy protein products Vegetable protein products	Fat	ISO 659 Método FOSFA			
Soy protein products Vegetable protein products	Protein; excluding added vitamins, minerals, aminoacids and food additives	ISO 5983-1 Método FOSFA			

Uruguay agree that methods listed in Appendix II and Appendix III should be reviewed at a future WG on methods endorsement.

Related with the ITEMS FOR FURTHER CONSIDERATION we suggest that:

- i. We understand the moisture methods should be prescribed in CXS 234
- ii. We are proposing methods to include in Appendix II.