

## CODEX ALIMENTARIUS COMMISSION



Food and Agriculture  
Organization of  
the United Nations



World Health  
Organization

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Agenda Item 6

CX/PFV 14/27/8

August 2014

JOINT FAO/WHO FOOD STANDARDS PROGRAMME  
CODEX COMMITTEE ON PROCESSED FRUITS AND VEGETABLES

27<sup>th</sup> Session  
Philadelphia, Pennsylvania, United States of America,  
8 – 12 September 2014

METHODS OF ANALYSIS FOR CANNED FRUITS AND QUICK FROZEN VEGETABLES

(Prepared by the Electronic Working Group led by the United States of America)

**Background/Introduction**

1. The 25<sup>th</sup> Session of the Committee on Processed Fruits and Vegetables (October 2010) acting on the report of the CCPFV Priorities working group initiated the revision of the existing ten specific Codex standards for quick frozen vegetables and three specific Codex standards for canned fruits. An electronic working group led by the United States was tasked to revise the standards for quick frozen vegetables and another working group led by Cuba was tasked to revise the standards for canned fruits. Both working groups were directed to use a horizontal approach in revising the standards. These revised standards were renamed “certain quick frozen vegetables” and “certain canned fruits”.<sup>1</sup> The 36<sup>th</sup> Session of the Codex Alimentarius Commission agreed to the revision of these standards as proposed by CCPFV.

2. To expedite the revision of the standards for certain canned fruits and for certain quick frozen vegetables, the 26<sup>th</sup> Session of CCPFV (October 2012) established an Electronic Working Group on Methods of Analysis and Sampling<sup>2</sup>. This EWG led by the United States would undertake a review of methods of analysis and sampling related to the standards under development/review for consideration at the 27<sup>th</sup> Session of the Committee.

3. Currently eleven individual quick frozen vegetable standards are now merged into one standard, while three individual canned fruit standards are merged. Both draft revised standards follow the lateral format: (i) general provision - comprising of requirements that are common to all the commodities being standardized and (ii) individual annexes - comprising special requirements based each commodity unique characteristics. Each “annex” i.e. a current standard already has method of analysis and sampling sections. However, as part of the revision process, these provisions need to be reviewed. To facilitate ease of review the existing Codex standard names are listed.<sup>3</sup>

4. Circulated are two tables containing recognized method of analysis and sampling for certain quick frozen vegetables (Table 1) and for certain canned fruits (Table 2).

**Certain Quick Frozen Vegetables:**

Broccoli	(CODEX STAN 110-1981)
Brussels sprouts	(CODEX STAN 112-1981)
Carrots	(CODEX STAN 140-1983)
Cauliflower	(CODEX STAN 111-1981)
Corn-on-the-cob	(CODEX STAN 133-1981)
French fried potatoes	(CODEX STAN 114-1981)
Green beans & wax beans	(CODEX STAN 113-1981)
Leek	(CODEX STAN 104-1981)
Peas	(CODEX STAN 41-1981)
Spinach	(CODEX STAN 77-1981)
Whole kernel corn	(CODEX STAN132-1981)

<sup>1</sup> REP11/PFV, para 117.

<sup>2</sup> REP13/PFV, paras 51 and 85.

<sup>3</sup> REP13/CAC, Appendix VI.

**Certain Canned Fruits:**

Pears	(CODEX STAN 61-1981)
Pine apples	(CODEX STAN 42-1981)
Mangoes	(CODEX STAN 159-1987)

5. Codex members and observers are invited to consider Tables 1 and 2 and advise CCPFV whether the methods listed are relevant or any other more suitable method can be recommended in addition to or in replacement to the those listed in the tables. In particular for the Codex Recommended Method (CAC/RMs) developed by Codex, Codex members and observers are invited to propose alternative validated methods developed by recognized international organizations e.g. AOAC, ISO, IUPAC, etc. following the advice of the 20<sup>th</sup> Session of the Committee on Methods of Analysis and Sampling that commodity committees should consider replacing Codex Methods of Analysis (CAC/RMs) with more modern methods as appropriate and to replace the CAC/RM numbers with the original literature references, if possible.<sup>4</sup>

6. Note that volumes of the Codex Alimentarius including Volume 13 on Methods of Analysis and Sampling have been discontinued and therefore no longer available. Therefore, if these Codex Recommended Methods are still relevant they should be described in the Standard and CCMAS should be informed accordingly. Conversely, if these Codex Recommended Methods are no longer relevant and can be replaced with more updated international validated method of analysis, they should be recommended for revocation by CCMAS.

7. When considering methods of analysis listed in Tables 1 and 2, the Committee should give due consideration to the *General Criteria for the Selection of Methods of Analysis* as set out in the *Principles for the Establishment of Codex Methods of Analysis* of the Procedural Manual of the Codex Alimentarius Commission.<sup>5</sup> The Committee is also invited to take into account the *Relations between Commodity Committees and General Committees (Methods of Analysis and Sampling)* and any other relevant section of the Procedural Manual related to the selection of methods of analysis and sampling for compliance with provisions in Codex standards.<sup>5</sup>

8. It is also noted that where there is a specification or labelling requirement in the Standard, it is necessary to recommend a method(s) for the provision. However, if there is no specification or labelling requirement, there is no need to select methods of analysis.

9. Codex members and observers are also invited to provide advice to CCPFV on the appropriateness to refer to sampling plans with an AQL of 6.5 for composition and quality provisions for quick frozen vegetables. It is noted that these sampling plans generally applied to canned fruits and vegetables and desiccated coconut.

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<sup>4</sup> ALINORM 97/23, para 52.

<sup>5</sup> Section II, Procedural Manual of the Codex Alimentarius Commission.

Table 1 - Methods of Analysis and Sampling for Certain Quick Frozen Vegetables

COMMODITY STANDARD	PROVISION	CURRENT METHODS / PRINCIPLE / TYPE	PROPOSED METHODS / PRINCIPLE / TYPE
Broccoli	Net weight	CAC/RM 34-1970 Weighing / I	AOAC 963.26 Weighing / I
Brussels sprouts	Net weight	CAC/RM 34-1970 Weighing / I	AOAC 963.26 Weighing / I
Carrots	Net weight	CAC/RM 34-1970 Weighing / I	AOAC 963.26 Weighing / I
Carrots (whole only)	Mineral impurities	CAC/RM 54-1974 Flotation and sedimentation / I	AOAC 971.33 Gravimetry / I
Cauliflower	Net weight	CAC/RM 34-1970 Weighing / I	AOAC 963.26 Weighing / I
Corn on the cob	Net weight	CAC/RM 34-1970 Weighing / I	AOAC 963.26 Weighing / I
Corn-on-the-cob	Alcohol insoluble solids	CAC/RM 35-1970/ Gravimetry / I	AOAC 971.29 Gravimetry / I
Corn-on-the-cob	Soluble solids	ISO 2173:2003 or AOAC 932.12 Refractometry / I	ISO 2173:2003 or AOAC 932.12 Refractometry/ I
French fried potatoes	Net weight	CAC/RM 34-1970 Weighing / I	AOAC 963.26 Weighing / I
French fried potatoes	Moisture	AOAC 984.25 Gravimetry / Convection oven / I	None
French fried potatoes	Free fatty acids	[Not specified]	
Green beans & wax beans	Net weight	CAC/RM 34-1970 Weighing / I	AOAC 963.26 Weighing / I
Green beans & wax beans	Tough strings	CAC/RM 39-1970 Stretching I	None
Leek	Net weight	CAC/RM 34-1970 Weighing / I	AOAC 963.26 Weighing / I
Leek	Mineral impurities	CAC/RM 54-1974 Flotation and sedimentation / I	

COMMODITY STANDARD	PROVISION	CURRENT METHODS / PRINCIPLE / TYPE	PROPOSED METHODS / PRINCIPLE / TYPE
Peas	Net weight	CAC/RM 34-1970 Weighing / I	AOAC 963.26 Weighing / I
Peas	Alcohol insoluble solids	CAC/RM 35-1970 Gravimetry / I	AOAC 971.29 Gravimetry / I
Spinach	Net weight	CAC/RM 34-1970 Weighing / I	AOAC 963.26 Weighing / I
Spinach	Salt-free dry matter	Method described in the Standard Weighing / I	
Spinach	Mineral impurities	CAC/RM 54-1974 Flotation and sedimentation / I	AOAC 971.33 Gravimetry / I
Whole kernel corn	Net weight	CAC/RM 34-1970 Weighing / I	AOAC 963.26 Weighing / I
Whole kernel corn	Alcohol insoluble solids	CAC/RM 35-1970 Gravimetry / I	AOAC 971.29 Gravimetry / I
Whole kernel corn	Soluble solids	ISO 2173:2003 or AOAC 932.12 Refractometry / I	ISO 2173:2003 or AOAC 932.12 Refractometry / I

**Table 2 - Methods of Analysis and Sampling for Certain Canned Fruits**

<b>COMMODITY STANDARD</b>	<b>PROVISION</b>	<b>METHODS</b>	<b>PRINCIPLE</b>	<b>TYPE</b>
Pears	Drained weight	AOAC 968.30 (Codex general method)	Sieving Gravimetry	I
Pears	Fill of container	ISO 90.1:1999 (metal containers)	Weighing	I
Pears	Soluble solids	ISO 2173:2003 or AOAC 932.12	Refractometry	I
Pineapples	Drained weight	AOAC 968.30 (Codex general method)	Sieving Gravimetry	I
Pineapples	Fill of container	ISO 90.1:1999 (metal containers)	Weighing	I
Pineapples	Soluble solids	ISO 2173:2003 or AOAC 932.12	Refractometry	I
Pineapples	Lead (Pb)	AOAC 972.25 (Codex general method)	AAS (Flame absorbtion)	II
Pineapples	Tin (Sn)	AOAC 980.19 (Codex general method)	AAS (Flame absorbtion)	II
Mangoes	Drained weight	AOAC 968.30 (Codex general method)	Sieving Gravimetry	I
Mangoes	Fill of container	ISO 90.1:1999 (metal containers)	Weighing	I
Mangoes	Soluble solids	ISO 2173:2003 or AOAC 932.12	Refractometry	I
Mangoes	Lead (Pb)	AOAC 972.25 (Codex general method)	AAS (Flame absorbtion)	II
Mangoes	Tin (Sn)	AOAC 980.19 (Codex general method)	AAS (Flame absorbtion)	II

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