codex alimentarius commission

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

WORLD HEALTH ORGANIZATION

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Agenda Item 3 **CX/NFSDU 09/31/3-Add.1**
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JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX COMMITTEE ON NUTRITION AND FOODS FOR SPECIAL DIETARY USES
31st Session

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LIST OF METHODS FOR DIETARY FIBRE AT STEP 7

- ***Comments at Step 6 of the Procedure*** -

Comments from:

BRAZIL
COSTA RICA
DEMOCRATIC PEOPLE´S REPUBLIC OF KOREA
UNITED STATES OF AMERICA

BRAZIL

Brazil thanks for the opportunity to participate in the list of methods for dietary fibre and suggests changes on the dates of Annex references according to the following:

AOAC 985.29 – Prosky et al., 1985;
AOAC 991.43 – Lee et al., 1992;
AOAC 994.13 – Theander et al., 1995;
AOAC 2000~~,11~~ – Craig et al., 2001

COSTA RICA

With regard to the recommendations section, we consider the following:

(i) We support the fact that the Committee will send to the Codex Alimentarius Commission the dietary fibre analysis methods listed in the table included in the document for adoption.
(ii) We are in agreement with assignment of the method types according to the Codex in the right-hand column of the table.
(iii) We support the fact that the Committee should consider the inclusion of the new method of analysis for total dietary fibre (McCleary, 2007) once its AOAC process has been completed.
(iv) We believe that the EWG's recommendation should be respected with regard to not including the methods mentioned in Paragraphs 15 and 16 of the document at this stage and that their inclusion be considered by publication of the pertinent information.
(v) We support amendment of the page footnote added to the definition as suggested by the EWG in Paragraph 20 of the document.

DEMOCRATIC PEOPLE´S REPUBLIC OF KOREA

We think that the methods for dietary fibre listed in this document are complied with the Codex criteria for the selection of methods of analysis.

We support to insert the list into CODEX STAN 234.

It is requested that the difference between McCleary 2007 and AOAC 2001.03 should be distinguished in assigning Codex Types. AOAC 2001.03 (Gordon et.) for total dietary fibre does not measure all of resistant starch. So we suggest assigning Type II to AOAC 2001.03 and support to include McCleary method with Type II, provided that its validation would be completed.

We think that the current Footnote 1 is more concise and easier than that of the last draft (Appendix II, Alinorm 09/32/26).

But we are of view that it would be better to insert the example of other compounds when associated with polysaccharides in the plant cell walls as
following:

“When derived from a plant origin, dietary fibre may include fractions of lignin and/or other compounds associated with polysaccharides in the plant cell walls (for example, proteic fractions, phenolic compounds, waxes, saponins, phytates, cutin, phytosterols, etc). …”

UNITED STATES OF AMERICA

I. GENERAL COMMENTS

The United States acknowledges the contributions of the Delegation of France, other Codex member countries, and observer organizations to identify potential methods of analysis in relation to the most current version of a revised definition of dietary fibre under consideration by the Committee.

The revised Codex definition of dietary fibre recently adopted by the Commission states *inter alia* that "dietary fibre means carbohydrate polymers[1] with ten or more monomeric units[2], which are not hydrolysed by the endogenous enzymes in the small intestine….", with footnote 2 stating that the "decision on whether to include carbohydrates from 3 to 9 monomeric units should be left to national authorities." The definition specifies criteria for competent authorities for use in deciding the inclusion of specific synthetic and isolated carbohydrate polymers—namely that they be "shown to have a physiological effect of benefit to health as demonstrated by generally accepted scientific evidence to competent authorities." (ALINORM 09/32/26, Appendix II).

The United States believes that any proposed Codex provisions on methods of analysis for dietary fibre must be consistent with the adopted definition of dietary fibre.
We are concerned that CX/NFSDU 09/31/3 proposes recommendations on methods of analysis that are not consistent with the adopted definition, misleading, and not representative the views of all members of the electronic working group (eWG). In our specific comments, we provide options for Codex provisions on methods of analysis that aim for consistency with the revised definition.

The United States further believes that an implication of the revised definition is that it may not be possible to identify a Type II method for 'total' dietary fibre which is the one designated Reference Method (where Type I methods do not apply) that is selected from Type III methods because the Codex definition leaves the decision to national authorities on 1) whether to include carbohydrates from 3 to 9 monomeric units and 2) which synthetic or isolated carbohydrate polymers have a physiological effect of benefit to health.

As a final general comment, the United States would like to offer a response to the following statements in paragraph 6 of the report:

> *#6. One member's suggestion "to provide only general guidance on methods of analysis for dietary fibre in the Codex Guidelines on Nutrition Labelling" appears therefore inconsistent with the procedure established by the Codex Alimentarius Commission, the decision by the last session of the Committee to "update" the proposed list and the terms of reference of this electronic working group, and the terms of reference of this electronic working group. The fact that the adopted definition leaves to the decision of each Codex member whether to include or not certain types of compounds is irrelevant to its mandate: the task of selecting a method for analyzing a particular class of chemical compounds (which may be included among "dietary fibres" as defined by the Codex Alimentarius Commission) is based on its applicability and is independent of another issue, i.e., whether a member of Codex would decide to accept this class of compounds as belonging to the category of "dietary fibres".*
>
> U.S. Comments on above paragraph:
> The United States disagrees with the statement in the above paragraph which states that the fact that the adopted definition leaves to the decision of each Codex member whether to include or not certain compounds is irrelevant to the mandate of the eWG or the work of the Committee. Instead, we believe it is incumbent on the Committee to take into account all aspects of the adopted definition to ensure that recommendations on methods of analysis are not misleading.
>
> As a member of the eWG, the United States suggested providing general guidance on methods of analysis for dietary fibre in the Codex Guidelines on Nutrition Labelling along with specific draft wording which we anticipated would be offered for the Committee's consideration in the eWG report. Since it was not included, we are resubmitting the draft text in specific comments that follow

for the Committee's consideration, as well as offering two other options with the aim that Codex provisions on dietary fibre methods are consistent with the definition.

Paragraph 6 states that "…general guidance on methods…" appears inconsistent with the procedure established by the Codex Alimentarius Commission and the report further describes that procedure in paragraph 5 as "all methods of analysis and sampling considered necessary should be included [in the relevant section of a standard]…". The United States notes that the above reference to methods of analysis comes from Section III of the Codex Procedural Manual (18th ed.), which addresses the format for different sections of Codex Commodity standards. We are unaware of provisions for dietary fibre methods generally being included in Codex commodity standards even though the Codex Guidelines on Nutrition Labelling have included a definition of dietary fibre for several years before the latest revision was adopted. We do note that Codex Standard 234-1999 on "Recommended Methods of Analysis and Sampling"--reflecting amendments adopted by the CAC in 2007-- currently has two entries for methods for total dietary fibre—one identifying AOAC 985.29 for "Special Foods" and another identifying AOAC 991.43 for "Follow-up formula;" however, Standard 234-1999 does not currently have a list of dietary fibre methods that is applicable to most foods.

Paragraph 6 of the report also states that "….general guidance on methods…" appears to be inconsistent with "the decision by the last session of the Committee to 'update' the proposed list and the terms of reference of this electronic work group. The United States would like to clarify, however, that the first bullet in the terms of reference was to "review and update, as appropriate, the list of methods of analysis in Appendix II…." . We do not believe that it was the intent of the Committee to forward provisions on methods of analysis for adoption by the Commission that are inconsistent with the Codex definition of dietary fibre.

II. SPECIFIC COMMENTS ON EWG REPORT AND RECOMMENDATIONS

The United States previously noted that the eWG report does not characterize the views of all eWG members. The comments below clarify our views, which generally reflect and expand on previously submitted comments to the Delegation of France as a member of the eWG. Specifically, we offer the following comments on the recommendations made in Section 5, paragraph 21 (i- v) of this report.

Recommendation (i) in the Report

(i) The eWG suggests to the Committee to forward for adoption to the Codex Alimentarius Commission the methods of analysis for dietary fibre listed in the following Table, as the most appropriate to quantify dietary fibre in foods that support the definition of dietary fibres, adopted by the Codex Alimentarius Commission, in view of amending the current list of Recommended Methods of analysis and Sampling (CODEX STAN 234) by inserting a new section on "Dietary Fibres" as follows *(in which a table is proposed with a list of AOAC methods described as for "traditional dietary fibre" and a list of other methods for specific compounds that are identified in the first column of the table as "dietary fibres").*

Comments:

A. Concerns with Recommendation.

The United States does not support the above recommendation. The proposed table is not consistent with the definition of dietary fibre adopted by the Commission, which leaves the decision to national authorities on 1) whether to include carbohydrates from 3 to 9 monomeric units and 2) which synthetic or isolated carbohydrate polymers have a physiological effect of benefit to health. While the United States notes that the first term of reference for this eWG is to "review and update, as appropriate, the list of methods of analysis in Appendix II (of ALINORM 09/32/26), ….", we do not believe it is appropriate to provide a list of methods that characterizes specific synthetic and isolated carbohydrate polymers from 3 to 9 monomeric as "dietary fibres" since some of these compounds may not be accepted as dietary fibre by some Codex member countries based on the criteria in the

Codex definition. Thus, the identification of all the compounds in the proposed table as "Dietary Fibres" is both misleading and inconsistent with the revised Codex definition.

The United States further notes that that the proposed table in paragraph 21 may be misleading because it does address consideration of the applicable food matrices for the methods and appears to assume that all the methods are applicable to all foods. Moreover, there are differences in the way certain methods are characterized in this report under "Performance in Different Food Matrices" and the way they are characterized in a 2005 article in the Journal of AOAC International.[1] Below are examples that the U.S. previously submitted as a member of the EWG:

Method	eWG Report	2005 J AOAC Int Article, Table 2
AOAC 2000.11	"The method has been validated for a range of solid foods and beverages…" (with names of foods identified)	Matrixes studied in inter-laboratory study were limited. Recommendation for additional matrixes to be studied: processed complex carbohydrates (such as RTE cereals), yogurts, fruits, and vegetables
AOAC 2001.02	"Biscuits, dairy products, juice, infant formula, …"(with no additional names of foods identified)	Matrixes studied in inter-laboratory study were limited. Recommendation for additional matrixes to be studied: processed complex carbohydrates (such as RTE cereals), yogurts, fruit products such as jams and jellies, and vegetables (legumes and vegetable products)
AOAC 2001.03	"All type of matrices".	Matrixes studied in inter-laboratory study were limited. Recommendation for additional matrixes to be studied: processed complex carbohydrates (such as RTE cereals), yogurts, fruits and vegetables

The proposed list of methods in CX/NFSDU 09/31/3 may also be misleading without any narrative text to address procedures for combining methods.

B) Alternative Recommendations.

The United States offers for the Committee's consideration three options for addressing methods of analysis with the aim that the provisions be consistent with the revised definition.

Option 1. Provide only general guidance on methods of analysis for dietary fibre in the Codex *Guidelines on Nutrition Labelling*. Below is draft text for consideration:

Methods of Analysis for Dietary Fibre

"AOAC 985.29 and 991.43 are general methods that have been used to measure dietary fibre in most foods. When dietary fibre is defined at the national level to include specific carbohydrates from 3 to 9 monomeric units that meet the criteria in the definition, either a single validated method (e.g., AOAC method) that has been studied in the applicable food matrix or a suitable procedure for combining the results of validated methods for the food matrix should be used. The procedure for combining method results should ensure that individual compounds defined as dietary fibre are not counted more than once (e.g., with the use of a correction factor that is applicable to the food matrix)."

And/or

Option 2. Provide a list of only general methods for "dietary fiber" in CODEX STAN 234 (Recommended Methods of Analysis and Sampling) or in a separate Codex standard that countries can use according to how national authorities have implemented the Codex definition. As illustrated below, the listing of general methods could identify Type III or Type IV methods and include

[1] DeVries JW and Rader JI. Historical perspective as a guide for identifying and developing applicable methods for dietary fiber. Journal of AOAC International. Vol. 88, No. 5. pp. 1349- 1366.

footnotes to address 1) the appropriate use of these methods based on the Codex definition of dietary fibre and 2) the need to consider the applicable food matrices.

Commodity Standard	Provision	Method	Principle	Type
Individual Foods[1]	Dietary Fibre	AOAC 985.29, AOAC 991.43 (alone or in combination with other validated methods)[2]	Enzymatic Gravimetric	III
Individual Foods[1]	Dietary Fibre	AOAC 2001.03[3]	Enzymatic Gravimetric and Liquid Chromatography	~~II~~ III
Individual Foods[1]	Dietary Fibre	McCleary, 2007[4]	Enzymatic-Gravimetric High Pressure Liquid Chromatography Method	IV (Awaiting AOAC Verification)

[1] Refer to the description of each method for the food matrices that were the subject of interlaboratory study in the Official Methods of Analysis of AOAC International.

[2] AOAC 985.29 and 991.43 are general methods that have been used to measure dietary fibre in most foods. When dietary fibre is defined by national authorities to include specific carbohydrates from 3 to 9 monomeric units that meet the criteria in the definition, a suitable procedure for combining the results of validated general and specific methods for the applicable food matrix should be used. The procedure for combining method results should ensure that individual compounds defined as dietary fibre are not counted more than once (e.g., with the use of a correction factor that is applicable to the food matrix).

[3]This method may be used if dietary fibre is defined by national authorities to include carbohydrates from 3 to 9 monomeric units based on the criteria in the definition.

[4]This method has been evaluated by an AOACI collaborative study, and is awaiting s AOAC verification. Once verified, this method could be used if dietary fibre is defined by national authorities to include carbohydrates from 3 to 9 monomeric units based on the criteria in the definition.

Or

Option 3. Remove the column entitled "Standard" with the identification of all compounds as "dietary fibres" in the list of methods in Para 21 of CX/CCNFSDU 09/31/3, and create a new Codex standard for a list of methods that countries can use according to how national authorities have implemented the Codex definition—with separate listings for 1) general methods for dietary fibre and 2) specific methods for carbohydrate fractions. The listing of general methods could identify Type III or Type IV methods and the listing of specific methods for carbohydrate fractions could identify Type II, III, or IV methods. The standard would include introductory text and footnotes to address 1) the appropriate use of these methods based on the Codex definition of dietary fibre and 2) the need to consider the applicable food matrices. For example, a possible format is shown below:

(*New Codex Standard*)
Methods of Analysis for Compounds that Codex Member Countries May Define as Dietary Fibre

Introductory Text.

The Codex definition of dietary fibre states inter alia that "dietary fibre means carbohydrate polymers[1] with ten or more monomeric units[2] which are not hydrolysed by the endogenous enzymes in the small intestine….", with footnote 2 stating that the "decision on whether to include carbohydrates from 3 to 9 monomeric units should be left to national authorities." The definition specifies criteria for competent authorities to use in making decisions about the inclusion of specific synthetic and isolated carbohydrate polymers—namely that they be "shown to have a physiological effect of benefit to health as demonstrated by generally accepted scientific evidence to competent authorities."

Below are methods of analysis that Codex member countries can use to quantify dietary fibre according to how national authorities have implemented the Codex definition.

I. General Methods of Analysis for Dietary Fibre

Note: Footnotes 1 through 4 would be the same as in Option 2.

Commodity Standard	Provision	Method	Principle	Type
Individual Foods[1]	Dietary Fibre	AOAC 985.29, AOAC 991.43 (alone or in combination with other validated methods)[2]	Enzymatic Gravimetric	III
Individual Foods[1]	Dietary Fibre	AOAC 2001.03[3]	Enzymatic Gravimetric and Liquid Chromatography	~~II~~ III
Individual Foods[1]	Dietary Fibre	McCleary, 2007[4]	Enzymatic-Gravimetric High Pressure Liquid Chromatography Method	IV (Awaiting AOAC Verification)

II. Methods of Analysis for Specific Carbohydrate Fractions

Note: The methods for specific carbohydrate fractions from the proposed list in para 21 of CX/NFSDU 09/31/3 would be listed here. In this section, certain methods may be suitable as a Type II method. Footnote 1 would be the same as in Option 2.

Commodity Standard	Provision	Method	Principle	Type
Individual Foods[1]	(1→3)(1→4) Beta-D-Glucans	AOAC 992.28	Enzymatic	[III]
Individual Foods[1]	Beta-D-Glucans	AOAC 995.16	Enzymatic	[III]
Individual Foods[1]	Fructans (oligofructoses, inulin, hydrolyzed inulin, fructooligosaccharides)	AOAC 997.08	Enzymatic & HPAEC-PAD	[III]
Individual Foods[1]	Fructans (oligofructoses, inulin,	AOAC 999.03	Enzymatic & Colorimetric	[III]

	hydrolyzed inulin, fructooligosaccharides)			
Individual Foods[1]	….	….	….	….

Recommendations ii through iv in the Report

(ii) (The eWG) suggests assigning Codex types to each method as proposed in (the) rightmost column of the Table.

> Comments: The United States does not support the identification of any general method for 'total' dietary fibre as a type II method. As indicated earlier, we believe that an implication of the revised dietary fibre definition is that it is not possible to identify a Type II method for 'total' dietary fibre which is the one designated Reference Method (where Type I methods do not apply) that is selected from Type III methods because the Codex definition leaves the decision to national authorities on 1) whether to include carbohydrates from 3 to 9 monomeric units and 2) which synthetic or isolated carbohydrate polymers have a physiological effect of benefit to health.

(iii) In addition, the eWG suggests to the Committee to consider the inclusion of the new method of analysis for total dietary fibre (McCleary, 2007), once its AOAC process has been completed.

> Comments: The United States notes that the above method of analysis—in addition to not having received AOAC verification—includes carbohydrates from 3 to 9 monomeric units. Thus, the determination of the appropriate use of this method for dietary fibre analysis would need to be determined at the national level based on the criteria in the revised Codex definition.

(iv) The eWG does not recommend to include the methods, mentioned in paragraph 15 and 16 in the list at this stage and suggests that, in order to not delay the adoption of a list of methods of analysis, the Committee postpone consideration of this issue until after publication of the relevant information and if a formal request for revision of the list, as new work, is put forward by a member in the future.

> Comments: The United States looks forward to further discussion of this issue in at the upcoming CCNFSDU session.

(v) The eWG suggests amending the footnote appended to the definition as suggested in paragraph 20 above.

> Comments: The United States does not have any further suggested edits to the amended footnote at this time.