Report on the Codex 2011 Meeting: AACC Intl. Methods and Codex Are in Sync

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In the world of AACC International Approved Methods, a year can go by so fast. You will recall that 12 months ago I was reporting on the Codex Committee for Methods of Analysis and Sampling (CCMAS) meeting in Budapest. You may remember the focus of my report was the methods for dietary fibre analysis (and the cold winds from Austria!).

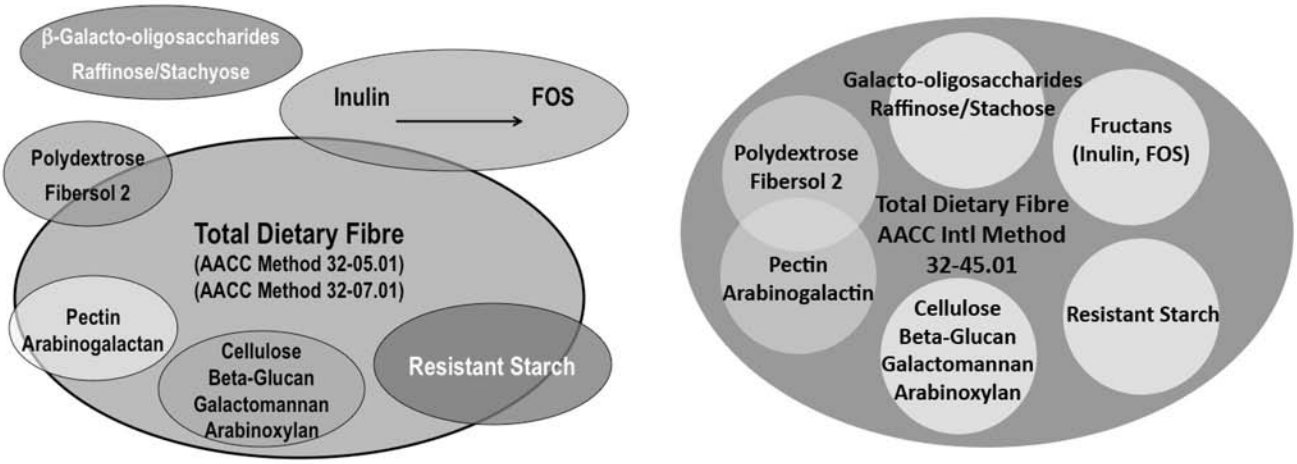
The Codex Alimentarius program is a year-round process, and several important committees, from an AACC Intl. perspective, have met in the interim. The first highlight for AACC Intl. was the Codex Alimentarius Commission Executive meeting held in July 2010, during which this body considered AACC Intl.'s application for recognition. At this meeting, the Executive Committee agreed to recommend to the director-generals of FAO and WHO that they grant observer status to AACC Intl. Observer status ensures that AACC Intl. representatives can attend relevant committee meetings and be recognized through our member comments.

The second series of meetings followed the request to the Codex Committee on Nutrition and Foods for Special Dietary Uses from CCMAS for additional information regarding application(s) of the dietary fibre methods. This request underwent review, and a revised table of recommended methods was returned to the March 2011 meeting of CCMAS for further discussion (Table I). This year, AACC Intl. President Barry McCleary represented the association at the CCMAS meeting. As a world-recognized leader in the development of dietary fibre methods, McCleary was able to provide additional expert guidance to the CCMAS method endorsement process, and he supported the successful recommendation of the methods with the appropriate typing. Type I methods are defining methods; Type II and III methods are both reference methods (one Type III method is selected, identified as the corresponding Type II method, and used for dispute resolution and calibration); and Type IV methods are tentative methods (helpful for research but not useful for trade).

AACC Intl. Method 32-45.01 (2009) is included in the dietary fibre methods approved as a Type I method applicable for determining the content of dietary fibre of higher and lower molecular weights. The method is applicable in foods that may, or may not, contain resistant starches. This method matches the Codex definition for dietary fibre. A full table of AACC Intl. dietary fibre methods recognized by CCMAS is scheduled to be published in the *AACC International Approved Methods of Analysis, 11th Edition*, online in May 2011. A further discussion on dietary fibre methods by CCMAS suggests the need for development of a decision tree to facilitate the selection by analysts of appropriate methods based on the situation. AACC Intl. is working on a decision tree for the *AACC International Approved Methods of Analysis*.

Other methods endorsed by CCMAS include methods for mineral waters and, of particular interest to AACC Intl. members, a method for melamine detection in milk and milk products proposed by ISO and the International Dairy Federation (IDF). This method has not yet been tested in collaborative trials and is potentially important for food safety. The CCMAS agenda covered other critical areas for the international food trade, including the final text for the revised "Guidelines on Measurement Uncertainty," and proposed new work on principles for the use of sampling and testing.

The committee also accepted a proposal for new work on provisions for proprietary methods to be included in the *Codex*



The diagrams highlight the components measured by AACC Intl. total fibre methods.

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Table I. Dietary fibre methods adapted from Codex CCMAS 2011

Standard[a]	Provisions	Method	Principle	Codex Type
General methods that do not measure the lower molecular weight fraction (i.e., monomeric units ≤9)[b]				
All foods	Method applicable for determining dietary fibres that do not include the lower molecular weight fraction[c]	AACC Intl. 32-05.01 (1991, 1999) AOAC 985.29	Enzymatic gravimetry	Type I
All foods	Method applicable for determining dietary fibres that do not include the lower molecular weight fraction; includes determination for soluble and insoluble dietary fibres[c]	AACC Intl. 32-07.01 (1999, 1991) AOAC 991.43 NMKL 129, 2003	Enzymatic gravimetry	Type I
All foods	Method applicable for determining dietary fibres that do not include the lower molecular weight fraction in foods and food products containing >10% dietary fibres and <2% starch (e.g., fruits)[c]	AOAC 993.21	Gravimetry	Type I
All foods	Method applicable for determining dietary fibres that do not include the lower molecular weight fraction; provides sugar residue composition of dietary fibre polysaccharides, as well as Klason lignin content[c]	AACC Intl. 32-25.01 (1999, 1994) AOAC 994.13 NMKL 162, 1998	Enzymatic GC/colorimetry gravimetry	Type I
All foods	Insoluble dietary fibres in food and food products[c]	AACC Intl. 32-20.01 (1999, 1982) Specific for insoluble fibre AOAC 991.42	Enzymatic gravimetry	Type I
All foods	Soluble dietary fibres in food and food products[c]	AOAC 993.19 Specific for soluble fibre	Enzymatic gravimetry	Type I
General methods that measure both the higher (monomeric units >9) and lower molecular weight (monomeric units ≤9) fractions[b]				
All foods	Method applicable for determining the content of dietary fibres of higher and lower molecular weights in foods where resistant starches are not present	AACC Intl. 32-41.01 (2002) AOAC 2001.03	Enzymatic gravimetry and liquid chromatography	Type I
All foods Matches Codex definition	Method applicable for determining the content of dietary fibres of higher and lower molecular weights; applicable in foods that may, or may not, contain resistant starches	AACC Intl. 32-45.01 (2009) AOAC 2009.01	Enzymatic-gravimetry HPLC	Type I
Methods that measure individual specific components (monomeric units: whole range for each type of components is covered)[b]				
All foods	(1→3)(1→4) β-D-Glucans	AACC Intl. 32-23.01 (1999, 1995) AOAC 995.16	Enzymatic	Type II
All foods	Fructans (oligofructoses, inulin, hydrolyzed inulin, polyfructoses, fructooligosaccharides); applicable to added fructans	AACC Intl. 32-31.01 (2001) AOAC 997.08	Enzymatic and HPAEC-PAD	Type II
All foods	Fructans (oligofructoses, inulin, hydrolyzed inulin, polyfructoses, fructooligosaccharides); not applicable to highly depolymerised fructans	AACC Intl. 32-32.01 (2001) AOAC 999.03	Enzymatic and colorimetric	Type III
All foods	Polydextrose	AACC Intl. 2-28.01 (2001) AOAC 2000.11	HPAEC-PAD	Type II
All foods	*trans*-Galacto-oligo saccharides	AACC Intl. 2-33.01 (2001) AOAC 2001.02	HPAEC-PAD	Type II
All foods	Resistant starch; recommended for RS3	AACC Intl. 32-40.01 (2002) AOAC 2002.02	Enzymatic	Type II

[a] Users should consult the description of each method for the food matrices that were the subject of interlaboratory study in the *AACC International Approved Methods of Analysis*.
[b] Two issues are left for authorities: to include monomeric units 3–9 and which isolated or synthetic compounds have physiological benefits (refer to the *Guidelines for Nutrition Labelling* [CAC/GL 2-1985], as revised in 2009).
[c] Quantitation lost for inulin, resistant starch, polydextrose, and resistant maltodextrins (refer to specific methods).

Procedural Manual standards. Quoting from the CCMAS meeting report,

> The paper noted that proprietary methods were not clearly defined, highlighted some concerns that could arise from their use, and in particular that: they might prevent further development of new and better techniques, distort competition between companies producing the reagents, and create difficulties for government authorities if particular reagents were not readily available for official methods. It was recalled that the R5 method for the determination of gluten illustrated some of these problems as the reagents were not generally available.

AACC Intl. has taken the position that methods are preferred when there is open access; however, we do consider proprietary methods for collaborative trials when they are important and valuable for our members to manage their businesses. We continue to monitor activity in these and other Codex committees. We would like to hear from members who have particular interests in international food safety and trade.

Anne Bridges received her academic training in Australia and Canada. She is chair of the AACC International Approved Methods Technical Committee and a member of the AACC Intl. Downunder Section. She is based in Australia and shares her time between consulting for food quality assurance and food biotechnology issues and humanitarian relief work. She can be reached at annebridges001@earthlink.net.