AOAC Annual Meeting 2018 (Toronto)

Meeting notes from the Contaminants Community Chair, Vicki Siegel

SPIFAN, August 25th 2018

Robert Rankin from INCA gave an update on Codex activities; joint AOAC/ISO/IDF methods are being submitted to Codex to get Type II dispute resolution status

During this process the methods are introduced at CCNFSDU (dietary use committee) who then refers potential methods to CCMAS (sampling committee) for technical review. Methods endorsed by CCMAS are referred to CAC, responsible for adoption of methods as Type II. To date 13 SPIFAN methods have been adopted as Type II, the most recent being biotin, vitamin D and chloride. CCMAS 40 will meet in May 2019 and CAC42 will meet in July of 2019 and SPIFAN is looking to submit methods in November for their consideration

- Minerals and trace elements (ICP-MS method as a Type II method and ICP-AES method as a Type III method)
-Folate
-Vitamin K

They are looking at methods for the B vitamins and tryptophan for future submissions. For vitamin B12 they hope to obtain Type III status for more methods and they hope to extend the scope of methods to section B formulas and follow-up formulas

Melissa Phillips from NIST gave an update on the work being done by an AOAC OMB working group to update Codex standard 234 (CXS 234-1999) "Recommended methods of analysis and sampling". This standard covers 1252 methods sorted into commodity categories; 350 of these are AOAC methods. Starting with select dairy methods, the OMB WG has developed a rubric to evaluate the methods for fitness-for-purpose (FFP). Similar activities are being taken on by AOCS (fats and oils methods) and ACC for the cereals methods. Should methods no longer deemed FFP for Codex still be included in OMA?

Marcel de Vreeze gave an update on the AOAC-ISO-IDF joint collaboration; activities involve ISO TC 34 WG 14 (vitamins, carotenoids and other nutrients) and ISO TC 34 SC 5 / IDF (milk and milk products). WG14 is developing standards for Vitamins C and D (published in July 2018). A ballot for a standard for biotin is to be held in April 2019 and draft international standards (DIS) have been published for vitamins K and B along with the multi-lab testing (MLT) data; DIS for both choline and carnitine are waiting for MLT data; the NWP has been approved for carotenoids and the MLT is in progress.
SC5/IDF activities include submission of standards for chloride and minerals and trace elements (by ICP-AES and ICP-MS) for publication in September 2018. The DIS for FOS is waiting on the MLT data. The MLT data for whey protein has been approved and there will be a ballot for the DIS in November 2018. They need protocols for both GOS and fluoride, and they have agreed to begin work on a standard for amino acids.
The original AOAC-ISO-IDF collaboration period was 2012-2017 and renewal is in the final approval stage {update – AOAC announced the renewal had been approved October 22nd 2018 and is a 5 year agreement that extends beyond milk and milk products to include any TC 34 food products }. Future

priorities for global standards development may expand to include contaminants, adulterants and pesticide residues so this will become even more relevant to the Contaminants Community!

The India Section of AOAC gave an update on their progress with updating the Official India microbiology method for vitamin B12 (growth of Lactobacillus correlated to B12 content) to an LC method. They have published their work in SLV 2011.10, extending the scope to include malt-based chocolate adult nutritionals and verifying FFP of the method. Abbott Nutrition collaborated on the method, which initially struggled to perform well for malt-containing products due to matrix interferences. Abbott introduced modifications that include enzyme pre-treatment and specific SPE clean-up; FFP of the method has been verified and the work is to be published in JAOAC. The modified method has been approved by Indian regulators; this demonstrates the importance of collaboration on scope expansion for regional use of AOAC methods.

Dr. Linag Cheng-Zu gave an update from the China section concerning their project to formulate new GB standards for China. As part of this project they are evaluating 254 GB standards, of which 226 are chemistry methods, for FFP. They are identifying gaps where the current method is not FFP or where there is no current method. They have developed performance criteria guidelines for the methods and 10 WGs comprised of stakeholders are meeting and reporting back with recommendations. There are 49 GB standards for infant formula and dairy products. The performance criteria include comparison to other international methods. The draft report from the project will be published at the end of 2018 and the AOAC China section is coordinating discussion meeting regarding the new GB standards.

SPIFAN MLT updates

MLTs are performed using NIST SPIFAN matrices (14) and allow for reproducibility data to be collected in support of the first action methods becoming final action methods. It was noted that they are running into “lab fatigue”. The ERP meeting later this afternoon will be reviewing B vitamins (B1, B2, and B6 for final action; B3 for first action) and tryptophan (final action). It was noted that the choline MLT is being re-run in combination with the carnitine MLT. Potential candidate methods for MLT study is MCPD / GE.

NIST SRMs – NIST has a new infant formula SRM 1869 which is a complement to 1849a (WPC only). 1869 is a hybrid nutritional powder including soy, whey and milk protein and includes all the nutrients in 1849a and then added many others. This was released in August and has a 5 year expiration date when stored at -20 C. The extras include carotenoids, fluoride (will be updated, current is considered an estimate) and FOS.

MCPD/GE

Kate Mastovska gave an update on the methods for 2-, and 3-MCPD, total glycidol and glycidol esters (industrial contaminants bound in oils and fats). SMPR 2017.017 was approved in September 2017 for powder and liquid samples and the call for methods resulted in submission of two methods. An ERP met to review the methods in March 2018 and both methods were adopted as first action in July 2018. Note that limits for 3-MCPD and glycidol have been established in amendment of EC No 1881/2006 by Commission Regulation (EU) 2018/290 of 26 February 2018 for hydrolyzed vegetable protein, soy sauce

(3-MCPD) and vegetable oils, fats, infant formula, medical foods for infants and children (glycidol). EFSA is still discussing limits for 2-MCPD. Collaborative studies are being designed for FFP evaluation.

AOAC Infant formula Proficiency Program

This new program had its first round in March 2018 and the next shipment went out in September 2018; 14 labs participate with 50% from outside the U.S. It has been challenging to find a good supply of homogeneous material so that they can increase the scope of nutrients as new methods obtain OMA status. They started with a pilot program and used feedback to clarify instructions to participants. The goal of the Program is to support the SPIFAN method validation activities.

SMPR 2014.013 Amino acids (Ping Feng & Phillip Haselberger)

Original methods call did not find any methods capable of meeting the SMPRs; the SMPRS were revised by the WG and reviewed in March 2018 but were not approved by the stakeholder panel. The revised SMPRs are a compromise and included footnotes about the analytes that had more trouble meeting performance requirements. The panel discussed whether to keep the original SMPRs and let the ERP deal with the poor method performance, or whether the SMPRs should be changed to accommodate what the methods can achieve. The panel tried to balance failure rates with the original SMPRs; perhaps there is a need for two methods with different specifications (good and bad actors?). Protein trade needs to rely on amino acid determination for fraud prevention so the poor performance of the methods needs to be tackled. Note that ~one third of the analytes are bad actors. The panel prefers to have better accuracy than precision and the new SMPRs do meet the needs of current regulations. The panel approved a motion to remove the footnote from the revised SMPRs and put out another call for methods based on the revised SMPRs. Additional guidance will be provided during the new call for methods.

Future work of the panel included the repeal of some first action methods that will not be made final action based upon performance during MLTs.

SPSFAM, August 26th 2018 [see posted minutes]

ERP status
Allergens [SMPR 2016.002], one method approved First action
Bisphenol-A in water & beverages [SMPR 2017.018], one method approved First action; accepting re-submissions for other four methods submitted
Cannabis - Cannabinoids in edible chocolate [SMPR 2017.019], no submitted methods (still open)
Cannabis - Cannabinoids in plant material [SMPR 2017.001], no methods approved; accepting re-submissions for the two submitted methods
Cannabis - Cannabinoids in concentrates [SMPR 2017.002], no methods approved; accepting re-submission for the submitted method
Heavy Metals in foods & beverages [SMPR 2012.07], one method approved First action; ERP met August 26th for Final action consideration

Arsenic Species in foods & beverages [SMPR 2015.006], one method approved First action; ERP met August 26th for Final action consideration.

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SMPR approvals

Sugars & low-lactose WG:

Lactose in low lactose or lactose free milk, milk products and products containing dairy ingredients – SMPR had been out for public comment through Jun and July 2018; received comments were discussed and the SMPRs were approved with a few editorial changes. Watch for the upcoming call for methods.

Veterinary Drug Residues WG:

Screening and identification method for regulated veterinary drug residues in food –
SMPR had been out for public comment through July 2018; received comments were discussed. Method is targeting the fast identification of residue-free products so that they can go to market *asap*. Further analysis will be required on products with identified residues. A reference was added and several minor changes were made to the SMPRs before being approved. Watch for the upcoming call for methods.

Cannabis WG:

Identification and quantitation of selected pesticide residues in dried cannabis materials -
SMPR had been out for public comment through July 2018 and received comments were discussed. Much discussion concerned how the LOQs were selected and the fact that they are too restrictive (5 ppb for residues with no action limit defined). Several changes were made to the SMPRs prior to their approval by the panel. Method developers are encouraged to submit their methods even if they don't meet the specified limits. The WG will be developing SMPRs for food products or inhaled cannabis.

MS-based multi-mycotoxin methods

Kai Zhang from FDA presented on the use of LC-MS methods for mycotoxins analysis. Since there are no Official LC-MS methods, stakeholders should contact AOAC with their interest in formation of WG.

Food fraud task force recommendations

The task force has recommended the development of both targeted testing (TT) and non-targeted testing (NTT) approaches for the food industry. These initiatives need two WGs and John Szpylka is Chairing the TT WG and Joe Boison will Chair the NTT WG. More to come from these groups!

Future topics

Furans in jar baby food, cereal and coffee; furfuryl alcohol (Prop 65)-
An International consortium on the chemistry of heated carbohydrates is in discussion with AOAC about potential for starting WGs to develop standards.

Available or glycemic carbohydrates – Barry McCleary proposed formation of a WG to establish SMPRs for available carbohydrates that are distinct from unavailable carbohydrates (dietary fiber). Contact AOAC if you are interested.