NMKL -NEWSLETTER 80

Nordic Committee on Food Analysis, www.nmkl.org

No. 80, February 2012

Contents:

The chairpersons of the NMKL National Committees:
From left: Urd Bente Andersen (Norway), Arne Højgård Jensen (Denmark), Harriet Wallin (Finland), Franklin Georgsson (Iceland) and Ulla Edberg (Sweden, also chair of NMKL)

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The chairs of the NMKL National Committees and the NMKL Secretary General were gathered in Iceland 3-5 February, discussing NMKL projects and strategic plans of NMKL.
The aim of NMKL is to :

- be a network / cooperation forum for Nordic researchers and analysts within the food analysis methodology
- prepare and publish appropriate and well-documented methods for analysis of foodstuffs
- evaluate and certify alternative methods for food, feed and environmental samples through the activities of NordVal
- develop guidelines for laboratories and users of analytical results
- organize relevant courses, workshops and seminars
- promote Nordic interests internationally on topics pertaining to food methodology

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AOAC EUROPE - NMKL/NordVal International Symposium;

Rapid Methods

- chemical, microbiological and sensory analysis of foods

7 – 8 May 2012, IDA Meeting Centre, Kalvebod Brygge 31-33,
Copenhagen, Denmark

The symposium starts Monday at 12:30 and ends about 16:30 on Tuesday.

The exhibition will be open both days,
and there will be a poster exhibition on Tuesday.

Remember registering before 16 April 2012 via NMKL's homepage: www.nmkl.org

Direct link: http://www.nmkl.org/AOAC-NMKL2012/AOAC-NMKL2012.htm

The event is a cooperation between AOAC Europe and NMKL/NordVal , and gives an unique opportunity for networking.
It is still possible to forward abstract for poster presentation. Deadline: 1 April 2012

Register now, via NMKL's homepage www.nmkl.org.

Draft program:

Monday 7 May	
12:30 Chairpersons:	Registration Ulla Edberg, Chair of NMKL & Sune Eriksson, President of AOAC Europe
13:00	Opening (NMKL & AOAC Europe) News from the organizations *Ulla Edberg, Chair of NMKL, National Food Administration, Sweden* *Sune Eriksson, President of AOAC Europe, Sweden*
13:30	Definitions of rapid, proprietary, screening and alternative methods *Hilde Skår Norli, NMKL Secretary General, Norway*
13:45	Importance of validation organisations in food safety management *Sven Qvist, Chair of NordVal, Denmark*
14:00	EU/Codex regulations on the use of analytical methods (rapid to conventional methods)
14.30	The advantages/disadvantages with the use of rapid methods *Charlotta Engdahl Axelsson, Eurofins, Sweden*
15.00	Coffee break / Exhibition
16:00	The value of standardization and an independent review *Mika Tuomola, Finland*
16:30	Validation and verification of analytical tools *Russ Flowers, Past President of AOAC International, Silliker, USA*
17:00	Food Safety Aspects in China - use of rapid methods in food control?

Tuesday 8 May: Three parallel sessions: Chemistry / Microbiology/ Sensory

	Chemistry Moderator: Harriet Wallin, Chair of the NMKL Chemical Committee, Finnish Food Safety Authority, Evira
09:00 09:30 10:00	- Overview of validation protocols, *Krystyna McIver, AOAC INTERNATIONAL, USA* - ELISA validation protocol and NordVal protocol, *Ylva Sjögren, National Food Administration, Sweden* - Method performance criteria of molecular methods and modular validation, *Arne Holst Jensen, Norwegian Veterinary Institute*
10:30	Coffee break/ Exhibition / Posters
11.00 11:30 12:00	- Food allergens profiling with an imaging surface plasmon resonance-based biosensor *Moniqe Bremer, Wageningen University and Research Centre, Germany* - Rapid methods for determination of algae toxins, *Ingunn Anita Samdal, Norwegian Veterinary Institute* - NIRS Standards EN ISO 12099 and EN 15948 – setting new performance standards for calibrations, *Jürgen Müller, Consultant, Sweden*
12:30	*Lunch / Exhibition / Posters*
13:30 14:15	*- 3 Poster presentations* - Can LC/MS/MS be used as a routine tool for Allergens analysis including Mustard? *Dr Stephen Lock, ABSCIEX*
14.30	*Coffee break/ Exhibition / Posters*
15:00 15:20 15:40 16:00 16:20	- Accurate quantification of regulated mycotoxins by UHPLC-MS/MS using ^{13}C isotope labeled internal standards, *John Lee, Agilent* - Rapid analysis of solid and liquid Samples by direct introduction with triple quadruple (GC-MS/MS), *Dr. Gordon van 't Slot, Bruker Daltronics* - Rapid Test Methods versus LC-MS/MS Technology in Routine Multi Mycotox in Analysis, *AloisSchiess, Romer Labs* - A HACCP based approach for mycotoxin management: RIDA®QUICK tests plus RIDA®QUICK Scan, *Ronald Niemeijer, R-Biopharm AG* - Gluten detection with a new generation of monoclonal antibody, *Elisabeth Hammer, Romer Labs*

	Microbiology Moderator: Sven Qvist, Chair of NordVal, Denmark
09:00 09:25 09:30 10:00	- Microbiological Criteria (EU 2073/2005) *Niels L. Nielsen, Danish Veterinary and Food Administration* - CEN mandate – status on the validation of the reference methods, *Sven Qvist* - Comparing the different protocols for validation of proprietary methods *Russ Flowers, Silliker, Chair of ISPAM (International Stakeholder Panel on Alternative Methods, AOAC International)* - Development and validation of molecular methods for the detection of food-borne pathogens - current status of the method standardisation *Dietrich Maede, Landesamt für Verbraucherschutz Sachsen-Anhalt, Germany*
10:30	Coffee break/ Exhibition / Posters
11.00 11:30 11:30	- Rapid Methods in the Meat Industry *Flemming Hansen, Danish Technological Institute* - The use of rapid methods for the microbiological quality control in the food chain, *Adrianne Klijn, Rdls, NestleResarch Centre, Switzerland* - Why and how – RAPID' Salmonella, an example from a test-kit producer. *Frederic Martinez, Bio-Rad, France*
12:30	Lunch / Exhibition / Posters
13:30 14.00	- Current developments and future trends in rapid methods technology. *Jeffrey Hoorfar, Technical University of Denmark* - Two Poster presentations
14.30	Coffee break/ Exhibition / Posters
15:00 15:30 16:00	- Two Poster presentations - An easy, fast and accurate method for the detection of the TOP 7 Shiga Toxigenic *E.coli* (STEC), including *E.coli* O157:H7. *Verena Peggion, BioControl Systems* - Performance of a New Molecular Platform for the Detection of *Salmonella* and *E.coli* O157, *Julie Yang*, *3M*

	Sensory Moderator: Grethe Hyldig, Technical University of Denmark
09:00 09:30 10:00	-Ensuring quality in sensory analysis, how to report sensory date / measurement uncertainty of sensory analysis *Per Lea, Nofima, Norway* - Rapid Sensory Descriptive Methodologies – Scope and Applications *Christian Dehlholm, University of Copenhagen, Department of Food Science, Denmark* - Quality index Method – An objective Rapid Tool for Determination of Sensory Quality of Fish. *Grethe Hyldig, DTU Food – National Food Institute, Denmark*
10:30	Coffee break/ Exhibition / Posters
11.00 11:30 12:00	-Sensory characters of Cabernet Sauvignon dry red wine from Changli County (China) *Ninino Federico, University of Udine, Italy* - Rapid and simultaneous analysis of xanthines and polyphenols as bitter taste markers in bakery products by FT-NIR spectroscopy, *Michele Suman Barilla SpA, Parma, Italy* - Holistic approach for consumer surveys, *LeneMeinert, Consultant, Denmark*
12:30	Lunch / Exhibition / Posters
13:30 14:00	State of the Art of the Artificial Nose—What we are up against, can do and expect *Prof. Thomas Lindblad, KTH – Physics Department and NoseLabs AB* 2 Poster presentations
14.30	Coffee break/ Exhibition / Posters
15:00 15:30	The software PanelCheck – quality control of the sensory analysis, *Technical University of Denmark* 2 Poster presentations

InterAgencyMeeting, IAM

IAM is a forum for international organisations (such as AOAC, AOCS, IDF, ISO, NMKL) working in the area of analytical methods and quality assurance guides.

At 13:30 – 17:30 in Budapest, Hungary International organisations, members of InterAgency-Meeting, arranges the workshop:

Choosing the Right Laboratory for Official Control.

This workshop is held in connection with the meeting of Codex Committee on Methods of Analysis and Sampling.

Program:

1) Welcome by IAM and MoniQA Association, *Richard Cantrill, AOCS, USA and Roland Poms, ICC, Austria*
2) Introduction to the topic, *Roger Wood, UK*
3) Choosing the right laboratory for official control, *Stanley Bacler, Health Canada*
4) Food Safety Modernization Act / an FDS perspective, *Gregory Noonan, FDA, USA*

15:00 - 15:30 Coffee break

5) Tenders in the EU/EFSA calls for data
6) Tenders by FAO/WHO—selection criteria and experiences
7) Requirement specifications for food analysis, *Astrid Nordbotten, Norwegian Food Safety Authority*
8) Panel discussion, *Roger Wood, UK*

Fee: CCMAS members and IAM members: One free, 150 Euro for each additional, non members: 290 Euro

For registration, follow the link at www.nmkl.org

Botulinum neurotoxin. Detection in foods, feeds and animal sample materials

NMKL Method No. 79, 3rd. Ed., 2012

Botulinum neurotoxins are highly toxic to man, higher mammals and fish, acting by blocking the cholinergic synapses of the nervous system. The work with these toxins requires special security measures in the laboratory.

This is a biological method and the principles of ethical animal experimentation must be followed. Use of this method requires appropriate license from national authorities. Unnecessary animal experiments must not be done. Selection of sample dilutions and/or neutralizing antibodies to be tested must be carefully considered based on expertise to avoid redundant testing.

Botulinum neurotoxins are high-molecular thermolabile proteins produced by *Clostridium botulinum* and some strains of *Clostridium butyricum* and *Clostridium baratii*. Botulinum neurotoxin producing clostridia form a heterogeneous group. Based on their antigenic properties, botulinum neurotoxins are divided into seven types A-G. The toxin types A, B, E, and F are toxic to humans and some animals, while types C and D toxins are toxic to animals. Type G toxin has not been related to disease. Botulinum neurotoxins inhibit cholinergic synapses.

The neurotoxin is eluted from the material under investigation and demonstrated by injection into experimental animals. The toxin concentration can be determined by diluting the eluate with a suitable fluid and injecting the dilutions into experimental animals. Final identification is made by neutralization tests with specific antitoxins raised against the different neurotoxin serotypes.

The method has been elaborated by Miia Lindström, University of Helsinki, Finland in cooperation with Øystein Angen, Demark, Eggert Gunnarson, Iceland, Per Einar Granum, Norway and Charlotta Engdahl Axelsson, Sweden.

Professor Miia Lindström Department of Food Hygiene and Environmental Health, Faculty of Veterinary Medicine, University of Helsinki

Call for laboratories to a collaborative study on:

Fat - Determination in foods by NMR (Nuclear Magnetic Resonance)

If you would like to participate, please e-mail nmkl@vetinst.no for further information.

Do you have subscription on NMKL methods?

With an online subscription, the newest version of the method is only a click away.

Visit www.nmkl.org for information about:

- NMKL publications (methods, procedures, protocols)
- NordVal Certificates
- Courses/seminars/ symposiums
- List of reference laboratories in the Nordic countries, NRL and EU-RL and their tasks
- Comparison between ISO and NMKL methods relevant for the EU 2073/2005
- Link to database for PT –schemes
- NMKL's working program

Salmonella occurs worldwide and is one of the most common food-borne infections. There are over 2,000 different variants/ serotypes of *salmonella* bacteria. Most of them can cause disease in humans, but the ability to cause disease can vary a lot between the different serotypes.

Salmonella has been isolated from a variety of foods, including meat and meat products, dried spices, fruits and vegetables (e.g. tomatoes, lettuce, sprouts and melons), eggs, chocolate, almonds, cereals, fish and shellfish from temperate waters, unpasteurized milk and milk products and water.

Salmonella grows well in perishable foods stored without adequate cooling. For example, a low number of bacteria in a nutrient-rich product that stands a few hours at room temperature quickly multiply to such numbers that people may become ill. The bacteria survive freezing even though the number of bacteria present in the food may decrease. *Salmonella* can survive for a long time in dry foods such as spices and chocolate.

Source: Fact sheet on www.vetinst.no

iQ-Check™ *Salmonella* II kit - NordVal Certificate 038

The iQ-Check™ *Salmonella* II is a qualitative method allowing the detection of *Salmonella* spp specific DNA sequences after enrichment by culture in buffered peptone water. It is based upon polymerase chain reaction and real time detection using fluorescent probes.

iQ-Check™ *Salmonella* II describes the following procedures, differing from each other in preliminary enrichment and lysis steps:

Standard Protocol I: 18h ± 2h at 37°C ± 1°C enrichment in buffered peptone water followed by the standard lysis protocol.

Easy Protocol I in micro plates: 21 h ± 1h at 37°C ± 1°C enrichment in buffered peptone water, followed by a simplified extraction protocol, no longer requiring the first centrifugation step.

Standard Protocol II: specific for raw meat: 10h ± 2h at 37°C ± 1°C enrichment in buffered peptone water followed by the standard lysis protocol.

Easy Protocol II in microplates, specific for raw beef: 21 h ± 1h at 37°C ± 1°C enrichment in buffered peptone water, followed by a simplified extraction protocol, no longer requiring the first centrifugation step.

Easy Protocol II, specific for meat products, 18h ± 2h at 37°C ± 1°C enrichment in buffered peptone water followed by the standard lysis protocol.

The method is applicable for the detection of *Salmonella* spp in food, animal feed and environmental samples. It has been tested in extensive validations against the reference method EN ISO 6579:2002 – Food microbiology - Horizontal method for the detection of *Salmonella* spp.

The expert laboratories l'Institut Pasteur de Lille and ADRIA Développement, France, studied the method in 2007 and 2008. The validations were carried out according to ISO 16140. For the recent renewal of the NordVal Certificate, the following changes were approved based on validation data from ADRIA Développement:

- DNA extraction from meat products using a new "Deep-well plate"
- a new protocol of extraction for meat products, Easy Protocol II, 18h ± 2h

The results of all the five procedures showed that the method is working satisfactory with regard to sensitivity, specificity, selectivity and agreement between the results obtained by iQ-Check™ *Salmonella* II kit and the reference methods.

iQ-Check™ *Salmonella* II kit is manufactured and supplied by Bio-Rad Laboratories, France. For further information see **www.bio-rad.com**.

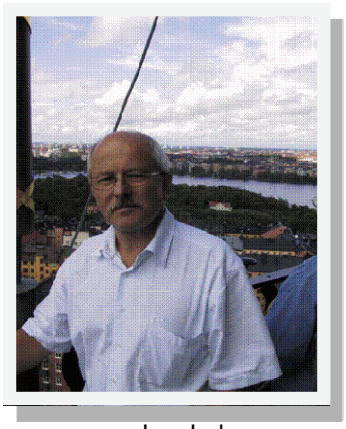
The NordVal certificate, including result of the validation, is available at www.nmkl.org under NordVal.

Photo: Source www.bio-rad.com

New NMKL Procedure: Recovery information in analytical measurement

NMKL Procedure No. 25, 2012

The use of recovery information is related to adjustment of experimental values with the dual purpose of either compensating for analyte loss and matrix effects in the analyte measurement, or checking an analytical method in order to estimate the complete systematic deviation of the process. Different sectors have different practices, and the estimation and use of the term recovery has given rise to some confusion in the field of analytical chemistry. Recovery is primarily an issue in methods with an extraction or pre-concentration step.



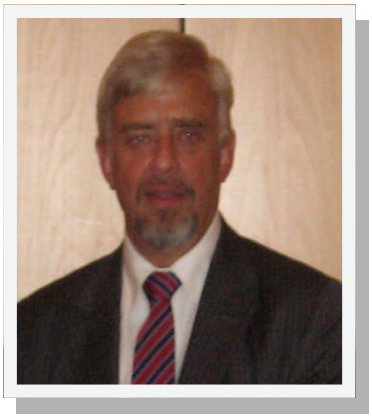
Lars Jorhem,
NFA, Sweden

In the literature three different terms are used:

- Recovery
- Apparent recovery
- Calibration recovery

Recovery is defined as the measurement of the yield of an analytical process in relation to extraction or pre-concentration, while the Apparent Recovery is the observed concentration following the analytical process, estimated from a calibration curve. Calibration Recovery is the relation between matrix and concentration.

The purpose of this guideline is to provide information on recovery in analytical measurement, to outline where recovery is applicable and where it is not, and to explain how to use recovery information for quality control purposes. The terms Recovery, Apparent Recovery and Calibration Recovery are described in the procedure.



Håkan Johnsson,
NFA, Sweden

This NMKL procedure has been elaborated by a Nordic working group, consisting of the following persons:

Denmark: Arne Højgård Jensen (Project leader), Danish Veterinary and Food Administration
Finland: Eija-Riitta Venäläinen, Finnish Food Safety Authority, Evira
Iceland: Ásta Margrét Ásmundsdóttir, University of Akureyri
Norway: Tone Normann Asp, Norwegian School of Veterinary Science
Sweden: Lars Jorhem and Håkan Johnsson, National Food Administration

Lars Jorhem and Håkan Johnsson have been the main contributors to the procedure.

NMKL Procedure No. 21: "Guide for sensory analysis of fish and shellfish", is now available in Finnish.

The translation is conducted by Leena Lilleberg, Finnish Food Safety Authority, Evira.

The procedure was elaborated in a project group led by Grethe Hyldig, Technical University of Denmark, in 2008. The procedure focuses primarily on aspects which are specific to sensorial analysis of fish and shellfish. Fish and shellfish are highly perishable foods with limited shelf life. The sensory changes, which occur during the rather short shelf life of fish, are very rapid. The early sensory changes of fish after it has been caught/slaughtered and during storage, are most prominent in appearance and texture. Thus, several aspects have to be considered when performing sensory analyses on fish and shellfish.

There are some sensorial characteristics that are specific to fish and shellfish, and some people may be "blind" to them, i.e. they cannot taste or smell them. Examples of such sensorial characteristics are rancid flavour, iodine and geosmin. Also, some people have a very low response to cold-storage flavour and rancidity. This has to be considered when selecting and training assessors. In addition to such aspects, sample handling and sample preparation are described in the procedure.

Available NMKL Procedures

No 1, 2. Ed. 2005	Calibration and performance checking of laboratory balances
No 2, 1995	Performance check and in-house calibration of thermometers
No 3, 1996	Control charts and control materials in internal quality control in food chemical laboratories
No 4, 3. Ed. 2009	Validation of chemical analytical methods
No 5, 2. Ed. 2003	Estimation and expression of measurement uncertainty in chemical analysis
No 6, 1998	Yleiset ohjeet aistinvaraisten laboratorioiden laadunvarmistukseen (avail. Danish/Finnish)
No 7, 1998	Checking of UV/VIS spectrophotometers
No 8, 4. Ed. 2008	Measurement of uncertainty in quantitative microbiological examination of foods
No 9, 2. Ed. 2007	Evaluation of method bias using certified reference materials.
No 10, 2001	Control of microbiological media
No 11, 2.Ed. 2010	Procedure for sensory analysis of drinking water
No 12, 2002	Guide on sampling for analysis of foods
No 13, 2003	Volumetric control
No 14, 2004	SENSVAL: Guidelines for internal control in sensory analysis laboratories
No 15, 2004	Temperature control in microbiological laboratories
No 16, 2005	Sensory quality control
No 17, 2006	Guidelines for requirement specifications for food analyses
No 18, 2006	The use of reference materials, reference strains and control charts in a food microbiological laboratory
No 19, 2007	Guideline for sensorial analysis of food containers/packages
No 20, 2007	Evaluation of results from qualitative methods
No 21, 2008	Guide for sensory analysis of fish and shellfish
No 22, 2008	Considerations regarding evaluation of immunochemical test kits for food analysis
No 23, 2008	Guide on quality assurance in microbiological laboratories (replacing NMKL Report No. 5)
No 24, 2010	Guidelines for quality assurance for food chemical laboratories
No 25, 2012	Recovery information in analytical measurement